Phase I Completion Report

RTRR Property 18251 West Jefferson Riverview, Michigan

Riverview-Trenton Railroad Company

April 19, 2021

ASTI ENVIRONMENTAL





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Phase I Completion Report RTRR Property – Former McLouth Steel 18251 West Jefferson Avenue,

18251 West Jefferson Avenue, Riverview, Michigan ASTI Project Number: 10860

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1 Introduction

This Phase I Completion Report was prepared in accordance with the Corrective Action Consent Order ("CACO") dated November 1, 2018 between the Riverview-Trenton Rail Road Company ("RTRR") and the Michigan Department of Environment, Great Lakes, and Energy ("EGLE") for the property located at 18251 West Jefferson Avenue in the City of Riverview, Wayne County, Michigan ("Subject Property"). The CACO is pursuant to Sections 11115a and 11151 of Part 111, Hazardous Waste Management of the Michigan Natural Resources Protection Act, 1994 PA 451, as amended, Michigan Compiled Laws ("MCL") 324.11101 ("NREPA"), Part 201, Environmental Remediation, of the NREPA, the rule promulgated under these parts, and the authority vested in EGLE as an authorized state under the Federal Resource Conservation and Recovery Act of 1976, as amended ("RCRA").

The 75.8-acre Subject Property is zoned for industrial use and is located west of the Trenton Channel, south of the Grosse Ile Toll Bridge and Monguagon Creek, east of railroad tracks and West Jefferson Avenue, and north of the Former McLouth Steel Facility. The Sibley Quarry is located approximately 3,600 feet ("ft") west of the Subject property. The portion of the Subject Property south of Sibley Road is located in Trenton, Michigan and the remainder of the Subject Property is located in Riverview, Michigan. Figure 1 provides a Site Location Map.

The parcels listed below comprise the entirety of the Subject Property:

Name	Address	Size	Also Known As	Parcel ID No. (PIN)
Riverview Trenton Railroad (RTRR) Property	18251 West Jefferson Ave., Riverview, MI	75.8 acres	Former McLouth Steel Property	51009030001000, 54001010082300, 54001990006704, and part of 54001990007701

The legal descriptions for parcels 51009030001000, 54001010082300, and 54001990006704 are provided in Attachment A¹ (DTE Electric Company has an easement on Parcel Number 54001990007701):

1.1 Project Objectives

The project objectives for Phase I, as defined in the CACO, were to conduct a groundwater investigation, investigate five Waste Management Units ("WMUs"), conduct an evaluation of stormwater management options, and provide a Dust Control Plan. Individual reports were submitted to EGLE for each task as described below.

1.2 Site History

The Subject Property originally consisted of wetlands and open water with some uplands in the northwestern portion of the property. The Monguagon Creek formerly bisected the property; flowing north to south before turning east to empty into the Trenton Channel of the Detroit River at about the eastern extension of Sibley Road. By 1952, much of the Subject Property had been filled to the current bank of the Trenton Channel but open water remained in the original Monguagon Creek Channel. By 1954, the mouth of the Monguagon Creek had been enlarged for docking and at least five above ground storage tanks ("ASTs") were located to the north of the mouth (on the Subject Property). The ASTs were associated with a former bulk oil storage

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¹ www.landgrid.com

facility located on the Subject Property. By 1964, the original Monguagon Creek channel had been filled and the creek was redirected to its current location along the northern extent of the Subject Property and no open water remained on the Subject Property.

The McLouth Steel Company ("McLouth Steel") operated a steel manufacturing facility on the adjacent property to the south and west. McLouth Steel acquired the Subject Property sometime between 1956 and 1961. McLouth Steel used the Subject Property for storage of raw materials, waste, and product that supported steel production between the time they acquired the property until about 1975. A large slag processing operation, operated by E. C. Levy Company, was also located on the Subject Property. After about 1975, steel production decreased at the McLouth Steel facility, and operations ceased in April of 1996 after McLouth Steel filed for Chapter 11 bankruptcy protection in September of 1995, which resulted in a reduction in activities on the Subject Property.

Hamlin Holdings, Inc. acquired the Subject Property in July of 1996. The Detroit Steel Company ("DSC Ltd") obtained title for the Subject Property in August of 1996 and used it for storage and conducted removal activities. DSC resumed pickling of strip steel at the McLouth Facility in July 1998 and those operations closed in 2005. On June 2, 2000, Crown Enterprises purchased the Subject Property but did not use it for any activities other than container storage and conveyed the property to RTRR in November of 2000. RTRR acquired the Subject Property after preparing a Baseline Environmental Assessment ("BEA") in accordance with Part 201 of the NREPA. The BEA indicated that the Subject Property was subject to RCRA corrective action and Part 201 response activities as described in the December 17, 1999, Comprehensive Corrective Action and Remedial Consent Order between DSC Ltd. and EGLE (then known as the Michigan Department of Environmental Quality ["DEQ"] under RCRA with respect to an area referred to as the "Trenton Facility" ("DSC Consent Order"). All structures have been removed from the Subject Property and only two concrete pads remain.

The "Trenton Facility" included the Subject Property along with the remainder of the former McLouth Steel Facility which adjoins the Subject Property to the south and west. The DSC Consent Order identified five (5) Waste Management Units ("WMUs") and five (5) Areas of Concern ("AOCs") on the Subject Property.

1.3 Waste Management Units

The five WMUs are depicted on Figure 2 – Site Features Map and are described in the sections below:

1.3.1 WMU-26 – Former North Debris Piles

WMU-26 is an approximately 20-acre area on the central portion of the Subject Property that McLouth Steel used to accumulate debris generated at the plant for reclamation prior to disposal.

Numerous solid waste streams, including refractory material, slag, air pollution control solids ("bag houses"), basic oxygen furnace ("BOF") scrubber sludge, and scale pit sludge are assumed to have been collected in various piles. The piles were magnetically processed and screened to reclaim steel-containing material. Processed residuals were then stockpiled in the area pending transportation to McLouth's Gibraltar Landfill. Piles of ore and slag were also stored in this area.

Waste streams designated for reclamation were not segregated, but randomly mixed in the former piles area. DSC began processing the debris piles for recovery of recyclable steel scrap

in June 1997². The debris was processed using magnetic separation and screens to generate three types of materials; recovered steel, steel fines, and processed debris residuals (all non-magnetic material that passed through the processing plant). Reclaimed steel-containing materials were recycled in the steel-making process and processed debris residuals were transferred to new piles in the same area or directly into trucks for transfer to a landfill.

In July 2000, Detroit Steel Corporation ("DSC") began transporting remaining debris pile material to the Countywide Landfill for disposal. Removal actions at WMU-26 took place beginning in July 2000 and continued into late 2002. Approximately 400,000 cubic yards of debris pile material was processed for recovery, disposal, or spread onsite³.

1.3.2 <u>WMU-27 – Former Equipment Storage Yard</u>

WMU-27 was a fenced area of approximately 1.2 acres on the northern portion of the Subject Property that was used for secure storage of valuable surplus electrical and mechanical equipment. The area is identified as a WMU because it may have been used to store surplus transformers before construction of the Toxic Substance Control Act ("TSCA") Storage Building ("WMU-29") in 1980. A small (approximately 1,000 square feet) building was located in the northwest corner of the storage yard. The building was not known to have been used for equipment storage; therefore, it is not considered part of the WMU. The primary equipment stored in this area was blast furnace equipment and it was also used to store surplus transformers prior to construction of the TSCA Storage Building. The chain-link fence around the former Equipment Storage Yard has been removed.

1.3.3 <u>WMU – 29 – Former TSCA Storage Building</u>

WMU-29 was a concrete block building constructed around 1980 which measured approximately 46 feet by 20 feet. The building was used to store containers of transformers containing polychlorinated biphenyls ("PCBs") and materials in compliance with TSCA regulations. The sealed concrete floor was constructed with secondary containment curbs that served as footings for the block walls. The building was demolished by early 2001 and only the concrete pad and secondary containment curbs remain.

1.3.4 <u>WMU-30 – Former Electric Arc Furnace Admission Control/Dust Storage Pile</u>
McLouth Steel used both BOF and an Electric Arc Furnace ("EAF") for production. The waste emission control dust generated from the EAF air pollution control systems was designated as a listed hazardous waste (K061) under RCRA. Sludge was accumulated in a concrete sump and transferred to the interim status EAF Dust Pile storage area. McLouth filed a notification of waste activity and a RCRA Part A permit on November 17, 1980 for storage of EAF dust prior to treatment or disposal. The unit was classified as an Interim Status Hazardous Waste Storage Unit in McLouth's 1980 Part A permit application. WMU-30 was a roughly 25,000 square feet area with an earthen berm built on top of the fill that covers most of the Subject Property.

Part B of McLouth's RCRA storage permit application was called in by the United States Environmental Protection Agency ("USEPA") in 1984. McLouth made various submissions, resulting in a final RCRA/Act 64 permit application dated February 27, 1988. After rejection of that permit, McLouth decided to close the EAF Dust Pile and accumulate EAF dust for no longer than 90 days.

McLouth operated the waste management unit continuously until early 1989, when new concrete accumulation tanks (WMU-31) were constructed and placed into use. Final removal

² Debris Pile Characterization Plan, Techna Corporation, June 8, 1998

³ Status of Consent Order Activities, Trenton and Gibraltar, Michigan, DSC Ltd., June 2002

of waste took place in 1991. Approximately 980 tons of EAF dust were transported to Horsehead Resource Development Company in Palmerton, Pennsylvania.

McLouth prepared the EAF Dust Pile Closure Plan ("Closure Plan") in August 1988 and revised the Closure Plan in response to comments by EGLE (then known as the Michigan Department of Natural Resources). The revised Closure Plan was approved on October 31, 1988 with a stipulation which required a hydrogeological investigation. The hydrogeological investigation plan was approved by EGLE (then known as the DEQ) on October 17, 1995.

Closure activities were conducted in accordance with the revised Closure Plan and the Hydrogeological Investigation Plan. The closure activities consisted of the following:

- Final removal of waste,
- Soil assessment,
- Groundwater assessment, and
- Final Closure Report and Certification.

McLouth initiated the closure activities in accordance with the revised Closure Plan through removal of residual waste material from the EAF Dust Storage pile area on September 23, 1991. McLouth continued waste removal activities until November 13, 1991. Clayton Environmental Consultants, Inc. ("Clayton") completed the initial soil sampling, supplemental soil sampling, and Soil Assessment Report and Certification between February 1997 and August 1997.

The hydrogeological investigation began on October 30, 1996 with the installation of five groundwater monitoring wells: three upgradient of WMU-30 and two downgradient of WMU-30. Four consecutive quarters of groundwater sampling and analysis began in November 1996 and were completed in August 1997. Groundwater analytical results from downgradient wells were compared to results from upgradient wells to determine if the EAF Dust Storage Pile impacted groundwater. Based on that investigation, Techna concluded that contaminants from the EAF Dust Storage Pile were not released to groundwater. The Final Closure Report provides details of the geology and hydrogeology of the WMU-30 area.

The Final Closure Report and Certification – Interim Status Hazardous Waste Storage Unit ("Final Closure Report") prepared by Techna Corporation ("Techna") in March 1998 provides detail about the assessment and closure activities.

1.3.5 WMU-31 - Former EAF Emission Control Sludge/Dust Storage Tanks

The EAF Emission Control Sludge/Dust Storage Tanks were reinforced concrete tanks used to accumulate EAF air pollution control sludge and baghouse dust. Two tanks were used to store the material for less than 90 days before shipment off-site for disposal or reclamation at RCRA permitted hazardous waste facility as K061 waste. The tanks and concrete secondary containment structure were constructed beginning in late 1988 to early 1989 and were used until steel-making operations ceased. No releases to the interstitial space or surrounding ground were reported. McLouth reportedly removed all wastes and cleaned the unit in 1996, after EAF operations ceased. After removal of the tanks, the cavity was backfilled to grade and the concrete pad remains in place.

In the first quarter of 2001, DSC transported approximately 14.7 tons of material from the EAF Emission Control Sludge/Dust Storage Tanks and transported it to the EQ Landfill in Belleville, Michigan as K061 waste. The interior walls and floors of the storage tanks were then pressure washed and 16 concrete chip samples were collected from the tank walls and floors for analysis of total barium, total lead, and total manganese and the laboratory analytical results were

compared to the EGLE Generic Nonresidential Cleanup Criteria ("GNRCC") under Part 201 of Michigan's *Natural Resources and Environmental Protection Act, 1994 PA 451, as Amended* (Part 201) for direct contact ("DC"). Additionally, the samples were analyzed using the Synthetic Precipitation Leaching Procedure (SPLP) for barium and lead.

Three concrete samples contained concentrations of lead which exceeded GNRCC for DC. Therefore, the areas with exceedances were pressure washed a second time and two verification samples were collected. Analytical results for the verification samples did not contain lead concentrations in exceedance of the GNRCC for DC.

1.4 Areas of Concern

Five Areas of Concern ("AOCs") were also identified at the Subject Property in the DSC Consent Order. The AOCs are listed below:

- AOC-58 North Slag Processing Plant,
- AOC-64 Possible Fill Area,
- AOC-67 Former Oil Terminal,
- AOC-68 Former Monguagon Creek Channel, and
- AOC-72 Former Coke Storage Area.

The ACOs are described in more detail below; however, no investigation of these AOCs was required by the CACO.

AOC-58 - North Slag Processing Plant

The Former Slag Processing Plant – North was located in the southern portion of the Subject Property. This AOC was reportedly a process area operated by the E.C. Levy Company to reclaim and store slag product for later sale.

ACO-64 - Possible Fill Area

The Possible Fill Area was depicted in the 1999 Consent Order in the northern portion of the Subject Property, east of WMU-29 (Figure 2). The area was reportedly filled prior to McLouth's occupation of the Subject Property.

AOC-67 - Former Oil Terminal

The Former Oil Terminal was located in the central portion of the Subject Property. The Former Oil Terminal included five above ground storage tanks ("ASTs") and was removed from the Subject Property by 1964.

AOC-68 - Former Monguagon Creek Channel

Prior to 1964, the Monguagon Creek flowed south through the Subject Property from the northern portion of the Subject Property. The creek bed was located west of the Former Oil Terminal (Figure 2). South of the Former Oil Terminal, the creek turned east and emptied into the Trenton Channel. After 1964, the Monguagon Creek bed on the Subject Property was filled and the creek was rerouted to its present-day channel (Figure 2).

AOC-72 - Former Coke Storage Area

The Former Coke Storage Area was located in the northwestern portion of the Subject Property. The area was used to store piles of coke used in the blast furnace.

1.5 Geology and Hydrogeology

The Subject Property is in the Eastern Lowlands Physiographic Region of Michigan. This region is located near the coast in the southeastern part of Michigan and extends north to the tip of the Lower Peninsula. The lowlands were deposited under large glacial lakes and rose when the lakes lowered. This region is defined by its flat topography and poorly drained soils⁴.

The Subject Property is underlain by the Dundee Limestone formation which overlies the Detroit River Group⁵. The Middle Devonian Dundee Limestone underlies most of the Southern Peninsula and averages a thickness of approximately 100 ft in the southeastern portion of Michigan's Southern Peninsula. The Dundee Limestone is a gray to buff cherty, crystalline limestone of high purity which was formerly mined at the Sibley Quarry located south of Sibley Road and approximately 3,600 ft west of the Subject Property (Figure 1). Bedrock was encountered in four soil borings (MW-104, MW-108, MW-109, and MW-110) during the groundwater investigation at elevations between approximately 535.5 ft above mean sea level ("AMSL") and 588 ft AMSL. Bedrock was encountered at a higher elevation in borings in the southern portion of the Subject Property. Limestone was visually confirmed at two of the four locations (MW-104 and MW-110) during drilling. Bedrock cuttings were not returned in the other two borings and the determination of bedrock was based on the driller's opinion due to change in subsurface characteristics encountered by response of the rig.

The confined deep aquifer lies above the bedrock and below the basial clay unit. The deep aquifer which, consists of clayey sand and gravel, was not present at each location during the groundwater investigation. Two groundwater monitoring wells (MW-102D and MW-107D) were installed into the deep aquifer during the groundwater investigation. Well MW-107D was installed as a nested well pair with MW-107s set into the shallow aquifer. Well MW-102D was set near existing shallow well TMW-27. Groundwater elevations in the deep aquifer were lower than those in the shallow aquifer. Based on the presence and thickness of the clay unit and groundwater elevations, the deep aquifer does not appear to be hydraulically connected to the shallow aquifer.

A clay layer overlies the deep aquifer (where present) beneath the Subject Property and the thickness of the clay layer increases toward the northern portion of the Subject Property based on lithology encountered during the groundwater investigation. The clay layer was thinner in areas which were formerly open water; however, based on the groundwater investigation, the clay layer appears to be present below the entirety of the Subject Property and the top of the clay layer was encountered at elevations between 551 ft AMSL and 581 ft AMSL. The lowest elevation of the top of the clay layer was encountered in the northern most boring; drilled into the former Monguagon Creek bed in the northern portion of the Subject Property.

The basal clay unit is overlain primarily by fill material. The Subject Property consisted of wetlands prior to about 1952 and the wetlands have since been filled in. The shallow aquifer exists primarily in the fill material and above the basal clay unit. The water table was present at elevations ranging between approximately 572 ft AMSL and 581 ft AMSL during the groundwater investigation. Based on groundwater elevation data collected during the investigation, groundwater flow in the shallow aquifer beneath the Subject Property is toward the Trenton Channel in the southern portion of the Subject Property and toward the Monguagon Creek in the northern portion of the Subject Property.

⁴ http://geo.msu.edu/extra/geogmich/phy-regions.html

⁵ https://www.deg.state.mi.us/GeoWebFace/

Regional groundwater flow is assumed to be controlled by the Detroit River. The Eastern Lowlands Physiographic Region is characterized by deposits of glacio-lacustrine clay and silt deposits. These deposits are not a significant source of groundwater due to their low permeability. The Dundee Limestone can yield significant quantities of groundwater; however, high mineral concentrations limit consumptive use.

2 Project Organization

2.1 Scope of Work

The Scope of Work, as provided in the CACO (Attachment A – Statement of Work) is provided below:

- 1. Groundwater Investigation: A hydrogeological investigation will be conducted on the RTRR Facility to determine the vertical and horizontal extent of impacts including: (a) an evaluation of the flow direction and hydrogeologic conductivity across the RTRR Facility; (b) an evaluation of groundwater contamination on the RTRR Facility, including an assessment of the nature of any off-site sources of groundwater contaminants and an assessment of the nature and extent of groundwater contamination at the RTRR Facility; and (c) a determination of groundwater flow (including volume and contaminant composition) from the RTRR Facility to the Detroit River and Monguagon Creek. The investigation will include up to ten groundwater monitoring wells to be installed in the upper aquifer along the property line and river to determine upgradient and downgradient impacts. Seven of these wells will include a nested well in the lower aquifer, and four wells will include nested pairs in the upper and lower portions of the upper aquifer. An additional two monitoring wells will be installed in the upper aquifer, one each downgradient of WMU27 and WMU29. When possible, groundwater monitoring wells from previous investigations will be used for sample collection. Four quarterly sampling events will be completed. Samples will be analyzed for chemicals of interest as identified in Appendix 1. Analytical results will be compared to applicable non-residential criteria under Part 201 of Michigan Act 451. A report detailing the results of the investigation will be prepared and provided to the DEQ.
- 2. Dust Control: A dust control plan for the RTRR Facility will be prepared and implemented until the property has been developed or meets restricted non-residential criteria under Part 201 of Michigan Act 451. This plan will consist of the following items: haul roads will be covered with asphalt millings; other exposed surfaces where site activities will be conducted will be wetted as required to control dust; trucks will be decontaminated, as necessary, before leaving the property. Dust monitoring for manganese will be conducted at the property line during soil or material removal or excavation.
- 3. Surfacewater Run-Off: Options for stormwater management to eliminate sheet flow to the Trenton Channel and Monguagon Creek will be assessed. This will include, among other options, regrading the site to collect stormwater. Options for stormwater management will include on-site retention, discharge under a general permit, discharging it to the Trenton Channel according to an NPDES permit, or discharge to the City of Trenton POTW. A report indicating feasible options for stormwater control will be prepared and provided to the DEQ.
- 4. Investigation of WMU26 North Debris Pile: The area of the former North Debris Pile will be inspected and surveyed to document that the pile has been removed and that the

remaining surfacing materials are similar to other materials on the RTRR Facility. A report detailing the results of the investigation will be prepared and provided to the DEQ.

- 5. Investigation of MWU27 Equipment Storage Yard: A soils investigation around the former storage yard will be conducted to determine the horizontal and vertical extent of PCBs in soils that exceed 25 ppm (parts per million). Sample results will be compared to the low-occupancy closure options under TSCA. Based on the DEQ guidance document titled "Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria" dated 2002, or optionally using incremental sampling, an estimated 20 randomly selected boring locations will be installed, with two to three samples collected per boring location, based on site conditions, and shall include surface samples (1-3 inches BGS) for PCBs. A report providing the results of sampling and analysis, and further identifying any necessary measures to be taken to prevent unacceptable human exposure to PCBs, will be provided to the DEQ.
- 6. Cleaning and Investigation of WMU29 TSCA Storage Building: The existing concrete pad from the former TSCA storage building will have the surfaces removed or cleaned by power washing. Cleaning liquids will be characterized and either disposed off-site as allowed under 40 CFR 761 .79(g) and 761 .79(b)(1), or discharged to the City of Trenton POTW under permit. Following surface removal or cleaning activities, concrete samples will be collected and analyzed for total PCBs. If the sampling results indicate the presence of PCBs over 25 ppm, the contaminated surfaces will be removed for off-site disposal or recleaned and retested until sampling results indicate PCBs below 25 ppm.

A soils investigation around the former storage building will be conducted to determine the horizontal and vertical extent of PCBs in soils that exceed 25 ppm. Sample results will be compared to the low-occupancy closure options under TSCA. Based on the DEQ guidance document titled "Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria" dated 2002, or optionally using Incremental Sampling, an estimated 16 boring locations will be installed around and beneath the concrete pad, with two to three samples collected per boring location, based on site conditions, and shall include surface samples (1-3 inches BGS) for PCBs. A report providing the results of sampling and analysis, and further identifying any necessary measures to be taken to prevent unacceptable human exposure to PCBs. will be provided to the DEQ.

- 7. Investigation of WMU30 Former Electric Arc Furnace Admission Control/Dust Storage Pile: This regulated unit was "clean closed" under Part 111 on September 1, 1998. A soils investigation in this area will be conducted to determine the horizontal extent of lead in surface soils that exceed nonresidential generic direct contact criteria. In conducting the soils investigation, existing data from other studies in this area may be used. A report providing the results of the investigation and analysis will be provided to the DEQ, including measures to be taken to prevent unacceptable human exposure to lead, if any.
- 8. Investigation of WMU31 Electric Arc Furnace Emission Control Sludge/Dust Storage Tanks: This WMU was cleaned and closed in 1996. In the event that appropriate closure documentation can be identified it will be provided to the DEQ. In the event that documentation is insufficient, concrete samples from the remaining enclosure will be collected and analyzed for the ten Michigan metals. If concentrations are above the applicable non-residential criteria for soils using the groundwater surface water interface criteria under Part 201 of Michigan Act 451, the concrete will again be recleaned and retested, or will be removed for off-site disposal. A report providing the results of investigation and analysis will be provided to the DEQ.

9. Manganese: Historic data will be used to identify dust control measures to be taken to prevent unacceptable human exposure to manganese. As additional data are available, the dust control measures will be adjusted to continue to prevent unacceptable human exposure to manganese.

2.1.1 Chemicals of Interest

The chemicals of interest selected for this investigation vary between the WMUs and groundwater based on previous use and the results of previous investigations. The chemicals of interest for each area and matrix of investigation are provided in the Statement of Work above and summarized in the table below:

Area of Investigation	Chemical(s) of Interest
WMU-26	N/A
WMU-27	Polychlorinated Biphenyls ("PCBs")
WMU-29	PCBs PCBs
WMU-30	Lead
WMU-31	Michigan 10 Metals (arsenic, barium,
	cadmium, chromium (total), copper, lead,
	mercury, selenium, silver, and zinc)
Groundwater	Ammonia, arsenic, barium, chloride,
	chromium, copper, free cyanide, lead,
	manganese, mercury, nickel, selenium,
	silver, vanadium, zinc, volatile organic
	compounds ("VOCs"), semi-volatile organic
	compounds ("SVOCs"), PCBs, total
	dissolved solids

2.1.2 Project Work Plans

In accordance with the CACO, ASTI submitted the following work plans to EGLE for review on April 1, 2019:

- Dust Control Work Plan,
- Groundwater Investigation Work Plan,
- Stormwater Management Work Plan, and
- Waste Management Unit Investigations Work Plan ("WMU Work Plan").

EGLE provided comments to the work plans via emails dated May 10, 2019 and June 3, 2019. Based on EGLE's comments, ASTI revised the work plans and resubmitted to EGLE on June 28, 2019. EGLE approved all four work plans in a letter dated July 29, 2019.

ASTI submitted the project Quality Assurance Project Plan ("QAPP") on October 2, 2019. Based on comments provided by EGLE on October 8, 2019, ASTI revised and resubmitted the QAPP on October 8, 2019. EGLE provided approval of the QAPP in a letter dated October 11, 2019.

ASTI completed the scope of work for the WMU-31 area as described in the WMU Work Plan and submitted the WMU-31 Concrete Investigation Report ("WMU-31 Investigation Report") to EGLE on January 22, 2021, then resubmitted to EGLE on March 3, 2021 based on comments received from EGLE. Based on ASTI's recommendation to collect additional concrete samples, EGLE requested a work plan for the recommended sampling. ASTI submitted the Work Plan

– Additional Concrete Investigation – Waste Management Unit 31 (WMU-31 Work Plan) to EGLE on February 9, 2021. EGLE provided approval of the WMU-31 Work Plan in a letter dated February 19, 2021. Attachment B includes EGLE's Work Plan Approval letters for the July 29, 2019, October 11, 2019 and February 19, 2021 approval dates as described above.

2.1.2.1 Deviations from Work Plans

ASTI conducted the investigations in accordance with the applicable work plans except for the deviations noted below.

Groundwater Investigation Work Plan

The Groundwater Investigation Work Plan stated that hollow-stem augers would be used to install the groundwater monitoring wells. Based on the requirement to install nested wells, Rotosonic drilling methods were employed.

Several locations which required screening of the top and bottom of the upper aquifer were screened using one well screen due to the limited thickness of the saturated zone. Installing multiple wells in the upper aquifer in those locations would have been impracticable. The wells installed in those locations contained a screen which screened the water table and the lower portion of the upper aquifer.

ASTI chose a subset of the newly installed wells for aquifer testing (slug testing). The chosen subset of wells tested provides a representation of the shallow aquifer beneath the Subject Property.

A bladder pump was employed for sample collection from newly installed groundwater monitoring well ("MW") MW-102D due to the depth to water within the well. The depth was beyond the capability for a peristaltic pump.

During the final two quarterly groundwater sampling events, low-level mercury analysis (USEPA Method 1631E) was added to the list of parameters above. Low-level mercury analysis was required to achieve detection limits below the EGLE Generic Cleanup Criteria under Part 201 of Michigan's *Natural Resources and Environmental Protection Act, 1994 PA 451, as Amended* (Part 201) for the Groundwater Surface Water Interface (GSIC).

WMU Work Plan

The WMU Work Plan described concrete sampling and cleaning (if necessary) in the WMU-29 area. Concrete sampling and cleaning were conducted previously by others and samples collected after cleaning contained PCB concentrations above 25 micrograms per kilogram ("mg/kg" or parts per million ["ppm"]). The soil investigation was completed in the WMU-29 area as described in the WMU Work Plan and the laboratory analytical results for PCBs in soil beneath the pad indicated concentrations above the action level. Concrete removal will be required to access the soil for remedial excavation, but due to winter conditions, was not completed as part of this report. The concrete will be removed and transported off site for proper disposal and an addendum to this report will be provided.

The WMU Work Plan stated that concrete core samples would be collected from the remaining pad at WMU-31. Instead, ASTI collected pulverized concrete samples during that concrete investigation.

2.1.3 Site Layout

The Subject Property is surrounded by a fence except for along the Trenton Channel. Access to the Subject Property is through a locked gate near West Jefferson Avenue in the northwestern portion of the Subject Property. The asphalt-paved entrance leads to an asphalt-paved parking area and short access road (Figure 2).

No structures currently exist at the Subject Property. The concrete pad and curb remain at the former TSCA Waste Storage Building (WMU-29) and the concrete apron remains for the former EAF Emission Control Sludge/Dust Storage Tanks (WMU-31).

A steel pylon seawall is located along the bank of the Trenton Channel near the northern portion of the Subject Property. The seawall begins approximately 130 feet south of the confluence of the Monguagon Creek and the Trenton Channel and extends south for approximately 270 feet.

2.1.3.1 Haul Roads

One haul road extends south from the asphalt parking area. Portions of the haul road are paved, and the unpaved portion is covered with asphalt milling or other coarse grain material which limited nuisance dust during routine travel required for completion of Phase I of the CACO.

2.1.4 Problems Encountered

ASTI and EGLE personnel visited the Subject Property on May 13, 2019 to evaluate current conditions, discuss the work plans, and evaluate a suspected drainage issue along West Jefferson Avenue, north of the Subject Property. During the visit, a downed power pole including a non-PCB transformer was observed near the east-central portion of the Subject Property. No surface staining was observed near the downed transformer. The downed power pole and transformer were later removed by the power company.

During the May 13, 2019 visit, damage to the chain-link portion of the fence along West Jefferson Avenue in the northern lobe of the Subject Property was noted. The section of damaged fence was approximately 100 feet and that section has since been repaired.

Stormwater drains along West Jefferson Avenue, north of the Subject Property, do not function properly and ponding was historically reported in that area. ASTI and EGLE observed that the catch basins, located on West Jefferson Avenue adjacent to the northwest corner of the Subject Property appeared to be filled with sediment which prevents proper drainage. EGLE was concerned that the ponding was caused from storm water run-off from the Subject Property on to West Jefferson Avenue. Based on observations made during the May 13, 2019 visit, specifically the existing berms, it is unlikely that stormwater from the Subject Property is the cause of the ponding along West Jefferson Avenue and the blockage in the storm drains is the cause of the ponding. The ground surface in the northwestern portion of the Subject Property is sloped such that storm water does not flow off of the Subject Property on to West Jefferson Avenue at the northwest corner of the Subject Property.

Per EGLE's request, ASTI collected pH readings of the ponded water on West Jefferson Avenue in October 2019. EGLE representatives were on-site at the time and witnessed pH readings of 7.1 and 7.2 standard units.

3 Project Implementation

Project implementation for each WMU and for the groundwater investigation are described below.

3.1 <u>Waste Management Unit Investigations</u>

3.1.1 WMU-26 – Former North Debris Piles Investigation

ASTI performed a non-invasive investigation of the WMU-26 Area (Figure 2) to determine if the former debris piles were still present at the Subject Property. To complete this investigation, ASTI reviewed historical and current topographic maps, historical reports, and performed field reconnaissance to determine if the debris material is still present.

Review of the topographic map produced in 2000 depicts several mounds throughout the WMU-26 area which are not present in the topographic map produced in 2018. The heights of the mounds generally ranged from 15 feet to 30 feet with an approximate maximum elevation of 610 ft AMSL. The approximate maximum elevations depicted in the 2018 topographic map were approximately 595 ft AMSL.

No large-scale mounding was observed in the southern portion of WMU-26 during field reconnaissance. One construction debris pile was evident near the western border of the Subject Property. ASTI observed a gently sloped mound consisting of asphalt millings located in the northern portion of WMU-26. A review of historical aerial photographs shows that the asphalt millings were placed after January 2004 and before March 2005 and was placed after removal of the debris piles.

Additional details for the WMU-26 investigation are provided in the Waste Management Unit 26 Investigation Report completed by ASTI and dated May 18, 2019. The WMU-26 Investigation Report is included as Attachment C. The topographic maps produced in 2000 and in 2018 are included in the WMU-26 Investigation Report.

3.1.2 WMU-27 Soil Investigation

ASTI performed a soil investigation at the WMU-27 area to determine if PCBs were present in soil based on former use of the area (Section 1.3.2). In addition to the subsurface investigation, ASTI reviewed historical PCB data for the WMU-27 area. Soil investigations, completed by others in October 2000 and January 2001, resulted in collection of 24 soil samples for laboratory analysis of PCBs. The maximum reported PCB concentration during the October 2000 soil investigation was 0.4 ppm. The maximum detected PCB concentration in samples collected during the January 2001 soil investigation was 33 ppm. That sample (identified as W27-08-06 0-6") was collected between ground surface and six inches below ground surface ("bgs"). The soil sample collected from the interval between six inches and 12 inches bgs in the same soil boring, contained a total PCB concentration of 2.9 ppm.

On December 16, 2019, ASTI conducted the soil investigation as described in the approved WMU Investigation Work Plan. ASTI installed 20 soil borings whose locations were predetermined using a systematic random approach as described in the EGLE Guidance Document titled Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria ("S3TM" [EGLE, 2002]). At each sampling location ASTI collected one surface soil sample and one deeper soil sample for laboratory analysis of PCBs. Additionally, for quality assurance/quality control ("QA/QC"), ASTI collected two duplicate soil samples.

The laboratory analytical results for the soil samples collected by ASTI in December 2019 did not report PCB concentrations greater than 13 ppm in any sample. One soil sample collected from the WMU-27 area during multiple investigations contained PCB concentration exceeding

the 25-ppm action level. Soil removal took place in the third quarter of 2001 and laboratory analysis of eight soil verification samples did not detect PCB concentrations above 25 ppm. Attachment D provides a copy of the Waste Management Unit 27 Soil Investigation Report completed by ASTI and dated May 21, 2020 ("WMU-27 Soil Investigation Report"). The WMU-27 Soil Investigation Report Includes the laboratory analytical report and chain-of-custody, a figure showing sample collection locations, and a summary of the laboratory analytical data.

Note that institutional controls, such as a deed restriction for the WMU-27 area, will be required due to the presence of PCB concentrations less than 25 ppm and greater than 1 ppm.

3.1.3 WMU-29 Soil Investigation

ASTI reviewed historical investigations for the WMU-29 area and conducted a PCB investigation of soils beneath and adjacent to the existing concrete pad for the former TSCA Waste Storage Building (WMU-29).

Review of historical investigations showed that after an attempt to clean the concrete, PCBs were still present in the concrete at a concentration greater than 50 ppm. In addition, soil sampling and analysis detected PCB concentrations in soil beneath the concrete pad at a maximum concentration of 806 ppm.

ASTI conducted a soil investigation on December 17, 2019. ASTI installed 14 soil borings from predetermined locations around the concrete pad and collected two soil samples from each soil boring. Soil boring locations were determined using the Systematic Random Approach as described in the EGLE S3TM Guidance Document. Additionally, two soil borings were installed through the concrete pad in locations were elevated PCB concentrations were historically detected in soil.

ASTI collected a total of 28 soil samples and one duplicate soil sample from the 14 soil borings adjacent to the concrete pad. PCBs were not detected at a concentration exceeding 25 ppm (maximum concentration of 12.7 ppm) in any of these samples. Additionally, ASTI collected a total of four soil samples from the two borings installed beneath the concrete pad. Total PCBs were detected at a maximum concentration of 2,200 ppm in soil beneath the concrete pad. That concentration was detected in soil collected from the interval between zero and three inches below the pad. The sample collected from the same boring at a depth of 6 ft bgs to 7 ft bgs contained PCBs at a concentration of 0.15 ppm.

Redevelopment plans are not complete at this time; however, based on this investigation and the historical data, the concrete pad will be removed, and soil removal will take place to remove PCB impacted soil to a depth of approximately two feet to achieve low-occupancy closure under TSCA. Additional details regarding ASTI's December 17, 2019 WMU-29 soil investigation, including the laboratory analytical report and chain-of-custody, figure showing sample locations, and a summary of the laboratory analytical data, are included in the Waste Management Unit 29 Soil Investigation Report prepared by ASTI and dated January 19, 2021 included as Attachment E.

3.1.4 WMU-30 Surface Soil Lead Investigation

Multiple WMU-30 surface soil lead investigations were conducted by others in November 1996, February 1997, and July 1997. Soil samples were collected in accordance with the approved EAF Dust Pile Closure Plan dated August 1988 ("Closure Plan") and its subsequent revision.

ASTI reviewed the surface soil lead investigation and compared the results to the current GNRCC for DC (900 mg/kg) but did not collect additional samples. Soil samples were collected on a grid which measured 50 feet by 50 feet, as originally described in the Closure Plan.

Soil sampling during the November 1996 investigation consisted of pre-determined sample locations and the analytical results showed that the locations were not sufficient to provide delineation of lead in surface soil to concentrations below the current GNRCC for DC. Therefore, additional sampling was performed in February 1997 to target the areas where delineation was not complete. The results of the February 1997 investigation delineated lead in surface soil with respect to the current GNRCC for DC (900 mg/kg) with one exception; a duplicate sample collected in the northern portion of the grid area contained a lead concentration exceeding 900 mg/kg. Therefore, additional sampling conducted in July 1997 provided delineation in this northern portion of the grid area. Additional details of the surface soil lead investigation, including the laboratory analytical reports and chain-of-custody (within attachments), a figure showing sample locations, and a tabularized summary of the laboratory analytical data, are provided in the Waste Management Unit 30 Surface Soil Lead Investigation – Revision 1 prepared by ASTI and dated March 29, 2021, included as Attachment F.

3.1.5 WMU-31 Concrete Investigation

In accordance with the WMU Work Plan, ASTI collected concrete samples from the existing pad at the WMU-31 area on July 7, 2020. ASTI determined a grid area based on the S3TM Guidance Document. Prior to collection, ASTI calculated random sample locations within each grid. ASTI collected one sample of pulverized concrete from each grid and one duplicate sample for laboratory analysis of the Michigan 10 Metals.

The laboratory analytical results for the concrete samples indicated concentrations of total chromium and arsenic in exceedance of the GNRCC for Groundwater to Surface Water Interface Protection ("GSIP") in each sample and for selenium in one sample. ASTI provided the Waste Management Unit 31 Concrete Investigation report ("WMU-31 Investigation report") to EGLE on January 22, 2021, with resubmittal based on verbal comments on March 3, 2021.

In the WMU-31 Investigation report, ASTI recommended collection of additional concrete samples for analysis of hexavalent chromium to determine the speciation of chromium and leachability testing for constituents which exceeded the GNRCC for GSIP.

ASTI collected additional concrete samples in accordance with the approved WMU-31 Work Plan on March 5, 2021. Each sample was analyzed for hexavalent chromium and the remaining sample was held by the laboratory pending those results. Hexavalent chromium concentrations did not exceed the GNRCC for GISP. Therefore, the remaining volume of each sample was analyzed for toxicity characteristic leach procedures ("TCLP") arsenic and one sample was analyzed for TCLP selenium due to exceedances of the GNRCC for GSIP in the samples collected in July 2020. The TCLP analysis did not report any arsenic or selenium concentrations above the laboratory detection limit. ASTI prepared an addendum to the WMU-31 Investigation Report and submitted to EGLE on April 5, 2021. A copy of the WMU-31 Concrete Investigation Report prepared by ASTI and dated January 22, 2021, and its Addendum prepared by ASTI and dated April 5, 2021, are included as Attachment G. The WMU-31 Concrete Investigation Report and its Addendum include the laboratory analytical data, a figure showing sample locations, and a summary of the laboratory analytical data.

3.2 Stormwater Options Report

In accordance with the Stormwater Management Work Plan, ASTI conducted an analysis of potential stormwater management options for the Subject Property. The potential options included:

• Grade the Subject Property to collect stormwater,

- On-site retention,
- Discharge under a general permit,
- Discharge to the Trenton Channel under a National Pollutant Discharge Elimination System ("NPDES") permit, or
- Discharge to the publicly owned treatment system ("POTW").

ASTI evaluated the potential options and provided the Stormwater Management Options Report to EGLE on March 3, 2021. A copy of the Stormwater Management Options Report dated March 3, 2021 is included as Attachment H.

3.3 Groundwater Investigation Report

In accordance with the Groundwater Investigation Work Plan, ASTI installed 14 new groundwater monitoring wells throughout the Subject Property. Monitoring wells were installed in the upper portion of the shallow aquifer, the lower portion of the shallow aquifer, and in the deep aquifer. Existing monitoring well TMW-27 was also used for collection of groundwater elevation data and for collection of groundwater analytical samples during the investigation. After installation, ASTI developed each new well and existing well TMW-27, then a licensed surveyor provided a location and elevation survey for each newly installed well, TMW-27, and a location at the steel pylon seawall along the Trenton Channel ("TC-1") to measure the depth to surface water. Depth to groundwater measurements and depth to surface water were collected prior to each quarterly groundwater sampling event and one additional measurement event was conducted on July 7, 2020. The groundwater monitoring wells used during the investigation and TC-1 are depicted on Figure 3.

Lithology encountered during well installation showed that the Subject Property is underlain by the shallow aquifer (between 4 ft bgs and 15 ft bgs) which is confined from the deep aquifer by the basal clay unit. The deep aquifer was found beneath the basal clay unit and above bedrock. No groundwater monitoring wells were installed below the deep aquifer (i.e. into bedrock) during this investigation.

Based on evaluation of the groundwater elevation contours, ASTI determined that there are two flow zones in the shallow aquifer: groundwater flow toward the Monguagon Creek north of the steel pylon wall ("Northern Flow Zone") and groundwater flow toward the Trenton Channel south of the steel pylon wall ("Southern Flow Zone"). The steel pylon wall restricts groundwater flow to the Trenton Channel along the wall. Based on a review available online of depth sounding charts for the Trenton Channel adjacent to the Subject Property, and the elevation of the bottom of the basal clay unit near the channel, the deep aquifer does not appear to be directly hydraulically connected to the Trenton Channel.

ASTI conducted slug tests on a subset of the newly installed monitoring wells on August 4, 2020 to evaluate the average hydraulic conductivity in the shallow aquifer at the Subject Property. The average hydraulic conductivity, along with the gradient was used to calculate groundwater flow from the Subject property to the Monguagon Creek in the Northern Flow Zone and to the Trenton Channel in the Southern Flow Zone. Additional details about groundwater investigation including groundwater elevation contour maps, are provided in the Groundwater Investigation Report, prepared by ASTI, and dated April 12, 2021, which is included as Attachment I.

ASTI collected groundwater analytical samples from each of the newly installed monitoring wells, except for well MW-109s, and from TMW-27 during four consecutive quarters between the fourth quarter of 2019 and the third quarter of 2020 ("2019-2020 Sampling Event"). The

bottom of the well screen for MW-109s was set above the top of the water table. A deeper well, MW-109D was later determined to be set in the shallow aquifer.

Groundwater samples were collected using low flow purging techniques and submitted to Fibertec Laboratory in Holt, Michigan ("Fibertec") for analysis of the parameters listed above. The Groundwater Investigation Report (Attachment I) provides additional details about groundwater sampling and analysis.

ASTI reviewed the Mixing Zone Determination Request ("Mixing Zone Request") submitted by Environmental Strategies Corporation ("ESC") on behalf of DSC Ltd. on April 23, 2001. The Mixing Zone Request was later denied by EGLE (then MDEQ) based on a potential for the discharge of chemicals to cause or contribute to exceedances of water quality standards in surface waters. It should be noted that ESC's investigation was conducted in the Southern Flow Zone as defined by ASTI's April 12, 2021 Groundwater Investigation Report. The table below provides a summary of the maximum concentrations reported by ESI for use in the mixing zone determination and the maximum concentrations detected during this groundwater investigation.

Constituent	2019-2020 Maximum Detected Concentration (µg/L) ⁽¹⁾	ESC Maximum Detected Concentration (2) (µg/L)
Arsenic	470	
Barium	(3)	1,140
Vanadium		140
Total Chromium	52	
Mercury	0.424	1.0
Selenium	12	
Silver	0.63	
Aniline	7.3	
Carbazole	12	32
Dibenzofuran	4.2	23
2,4-Dimethylphenol		3,800
3- and 4- Methylphenol	110	
Fluoranthene	3.1	14
Phenanthrene	5.8	48
Phenol		1,700
Naphthalene	240	340
1,3,4-Trimethylbenzene	51	
Vinyl Chloride	29	
Xylenes	84	
Chloride	290,000	
Total Dissolved Solids	2,900,000	

^{(1) – &}quot;µg/L" – micrograms per liter or parts per billion

Blank – constituents not included in the mixing zone request (not analyzed or did not exceed GNRCC for GSI).

The table presented above shows that the maximum detected concentrations in groundwater identified during the 2019-2020 Sampling Event were lower than those presented in ESC's Mixing Zone Request.

^{(2) –} ESC samples were collected in June and September 2000

^{(3) &}quot;--" No exceedance of the GNRCC for GSI.

In addition, the 2019-2020 Sampling Event resulted in a lower estimated volume of groundwater venting to the Trenton Channel due to a lower hydraulic conductivity value and lower gradient. A mixing zone determination was not requested as part of this investigation.

3.4 Quarterly Reporting

ASTI prepared quarterly status reports to provide updates to the progress of the work performed, samples collected, and planned tasks. The first CACO Quarterly Progress Report was submitted to EGLE for the fourth quarter of 2018 and the most recent report was submitted for the fourth quarter of 2020 on January 15, 2021. Quarterly reporting will continue until the CACO requirements are complete and approved by EGLE.

4 Conclusions

ASTI completed the tasks described above in accordance with the Statement of Work provided in the CACO and provided reports for each task completed (Attachments C-I). The conclusions for each portion of the Statement of Work are provided in the individual reports and are summarized below.

4.1 WMU-26 – Former North Debris Piles

Based review of historical documentation, topographic maps, and site reconnaissance, ASTI believes that the debris piles were removed from the Subject Property. The asphalt millings pile near the center of the Subject Property was placed after the former North Debris Piles were processed.

4.2 WMU-27 – Former Equipment Storage Yard

The soil investigation conducted by ASTI did not detected PCBs in soil in the former Equipment Storage Yard at a concentration above 13 ppm. One historical soil sample contained a PCB concentration which exceeded 25 ppm, and soil removal took place to remove that soil. Verification sampling did not detect PCBs above 25 ppm.

Soil containing PCB concentrations below 25 ppm remains at the WMU-27 area. Institutional controls will be required to prevent unacceptable human exposure to PCBs. The institutional control will likely consist of maintenance of the existing fences around the Subject Property and a deed restriction for the WMU-27 area to allow for a low-occupancy closure.

Shallow groundwater monitoring well MW-104 was installed immediately downgradient of WMU-27 for the groundwater investigation. Groundwater sampling took place during four consecutive quarters and PCBs were not detected in samples collected from MW-104.

4.3 WMU-29 – Former TSCA Waste Storage Building

Based on concentrations of PCBs beneath the concrete pad detected during ASTI's soil investigation, ASTI recommends removal of impacted soil for proper offsite disposal. The volume of soil to remove will depend on future use of the WMU-29 area. Assuming low occupancy use of the area, soil will be removed to meet one of the requirements presented in 40 Code of Federal Law § 761.61(a)(4)(i)(B)(1) through (3). Each of these remedial options require removal of the concrete pad, because the pad contains concentrations of PCB above the minimum requirement (1 ppm) for a protective cap. The concrete will be removed from the Subject Property for proper disposal and if required for the intended future use, soils will be removed for proper disposal. Samples will be conducted as necessary to characterize waste materials for disposal or to delineate remaining soil impacts.

Dust control measures will be implemented during excavation activities as described in the Dust Control Work Plan. The excavation will require movement of heavy equipment in the

WMU-29 area and transport of soil and concrete waste via dump trailers. WMU-29 is accessible from the main entrance of the Subject Property via haul roads which are covered with asphalt millings, therefore dust creation would be expected to be minimal due to soil and concrete transport. However, ASTI will review historical manganese data, and use the data to identify if modifications to the dust control measures described in the Dust Control Work Plan are required. ASTI will implement the best management practices ("BMPs") described in the Dust Control Work Plan including, but not limited to:

- Lightly spraying work areas with water as necessary before and during dustgenerating activities (truck traffic),
- While on the Subject Property, all vehicles will maintain speeds of five miles per hour or less to minimize dust generation,
- Material loaded for transportation will be covered,
- Vehicles will be decontaminated with a brush to remove dust or soil adhered to the vehicle prior to leaving the property, and
- Work will cease, or work will transition to non-dust generating activities, when sustained wind speed in excess of 40 miles per hour for a period of 5 minutes or more as measured by a proximate weather station (the weather station located at the McLouth Steel County property will be used to determine this measurement). Work will resume when the wind speed falls below 40 miles per hour for a minimum of one-half hour.

PCB-containing concrete and soil will be excavated and loaded directly into lined trailers for transport off-site to a license disposal facility. If direct loading cannot take place, the excavated soil and concrete will be staged near the work area on plastic liners with a secondary containment berm surrounding the pile. Any piles of excavated soil and concrete that remain at the end of a workday will be covered with plastic as part of the dust control program.

Soil excavation will remove soil with PCB concentrations above the applicable action level, depending on future use and maintenance of the WMU-29 area. Low occupancy use is assumed for the WMU-29 area.

Shallow groundwater monitoring well MW-105 was installed immediately downgradient of WMU-29 during the groundwater investigation. Groundwater sampling events took place in four consecutive quarters and PCBs were not detected in groundwater samples collected from well MW-105.

4.4 WMU-30 – Former EAF Dust Pile

Soil investigations conducted by others, after removal of the dust pile, delineated lead in surface soil at the WMU-30 area for concentrations exceeding the current GNRCC for DC. Measures to prevent unacceptable human exposure to the surface soil should be considered in this area. Those measures may include installation options such as installation of a low-permeability cap. A deed restriction will be required with the use of the cap and the cap should be maintained until the unacceptable risk to human health is removed.

4.5 <u>WMU-31 – Former EAF Emission Control Sludge/Dust Storage Tanks</u>

ASTI investigated the concrete pad for the former tanks for the presence of the Michigan 10 Metals in comparison to the GNRCC for GSIP. Initial sampling showed that total chromium exceeded the hexavalent chromium criteria (but not trivalent chromium criteria), therefore hexavalent chromium was analyzed on additional samples and showed that neither chromium species exceeded criteria. Arsenic and selenium (at one location) exceeded the criteria, therefore, leachability analysis was performed. Arsenic and selenium were not detected at

concentrations above the laboratory reporting limit in the leachate. Therefore, the arsenic and selenium are bound into the concrete matrix and will not leach from the WMU-31 concrete pad into groundwater at concentrations exceeding the GNRCC for GSIP.

4.6 Groundwater

Evaluation of the data collected during the groundwater investigation show that the shallow aquifer beneath the Subject Property exists primarily in fill material and is underlain by a clay aquitard. The deep aquifer does not appear to be hydraulically connected to the shallow aquifer based on groundwater elevations, the thickness of the clay unit, and chemical concentrations.

Several constituents exceeded the GNRCC for Drinking Water, however the drinking water pathway is not relevant for the Subject Property. No drinking water wells currently exist, and the shallow aquifer will not likely provide sufficient quantities of water. A deed restriction should be placed on the Subject Property to restrict well installation for consumptive use.

Several constituents were detected in groundwater at concentrations exceeding the GNRCC for GSI. Mixing zone calculations were not completed during this investigation however, the Groundwater Investigation Report provides calculations of chemical mass loading to the Monguagon Creek and to the Trenton Channel for the constituents which exceeded the GNRCC for GSI in wells which meet the definition of Groundwater Surface Water Interface monitoring points ("GSI monitoring point"), as well as MW-101. MW-101 does not meet the definition of a GSI monitoring point; however, it is the southernmost well on the Subject Property and was used in chemical mass loading calculations as a conservative measure.

Several SVOCs and VOCs were detected in the MW-100s and MW-100i nested well pair at concentrations exceeding the GNRCC for GSI that were not detected, or did not exceed criteria, in other parts of the Subject Property. The MW-100s and MW-100i nested well pair are located in the former Monguagon Creek bed near the northern property border (Figure 3). These constituents may have been deposited with fill material in the stream before it was rerouted to its current bed. The former stream channel may also serve as a preferential pathway for a localized component of groundwater flow toward the Subject Property from offsite, or from the Monguagon Creek.

The compound 1,2,4-trimethylbenzene exceeded the GNRCC for GSI only in samples collected from MW-101 (in each of the four quarters sampled). MW-101 is located on the upgradient portion of the Subject Property, near the southern extent of the Subject Property. Based on the well location and detection of constituents which did not exceed criteria elsewhere, it is likely that the 1,2,4-trimethylbenzene is a result of migration to the Subject Property from an offsite source.

Results of the groundwater investigation indicate that waste storage in the WMUs did not impact groundwater. Concentrations of metals in groundwater samples exceeding EGLE GNRCC were found in several wells sampled during the investigation with the fewest exceedances detected in the deep wells (MW-102D and MW-107D). However, the exceedances of metals in groundwater samples does not appear to be limited to wells downgradient of the WMUs or to be associated with these WMUs. In specific:

 Groundwater monitoring wells MW-106, MW-107s, MW-107D, and MW-108 were each installed within the footprint of WMU-26. MW-107D is screened in the deep aquifer and is not directly hydraulically connected to the shallow aquifer. Groundwater concentrations in wells MW-106, MW-107s, and MW-108 do not show an apparent trend when compared to other wells sampled during the investigation which are located upgradient or cross-gradient to WMU-26.

- Groundwater monitoring wells MW-104 and MW-105 were installed immediately downgradient of WMU-27 and WMU-29, respectively. PCBs are the chemical of interest for WMU-27 and WMU-29, yet PCBs were not detected in groundwater samples collected from MW-104 or MW-105 during the investigation.
- A hydrogeologic investigation was completed previously by Techna to evaluate if operations at WMU-30 impacted groundwater at the Subject Property. Techna concluded that contaminants from the EAF dust storage pile were not released to groundwater. No wells were installed immediately downgradient of WMU-30 during ASTI's 2019-2020 Sampling Event; however, MW-107s and MW-107D are approximately 500 ft downgradient (east). Mercury was the only metal which exceeded the GNRCC (in two of four samples collected) in MW-107s. MW-107D is installed beneath the clay confining layer and only manganese was detected at a concentration exceeding the GNRCC (in one of four samples collected).
- No releases were reported from the former tanks in WMU-31 and the Michigan 10
 Metals within the concrete matrix are the chemicals of concern for this unit. Based on
 the concrete investigation conducted at WMU-31, metals are not likely to leach from
 the concrete into groundwater.

5 RCRA Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

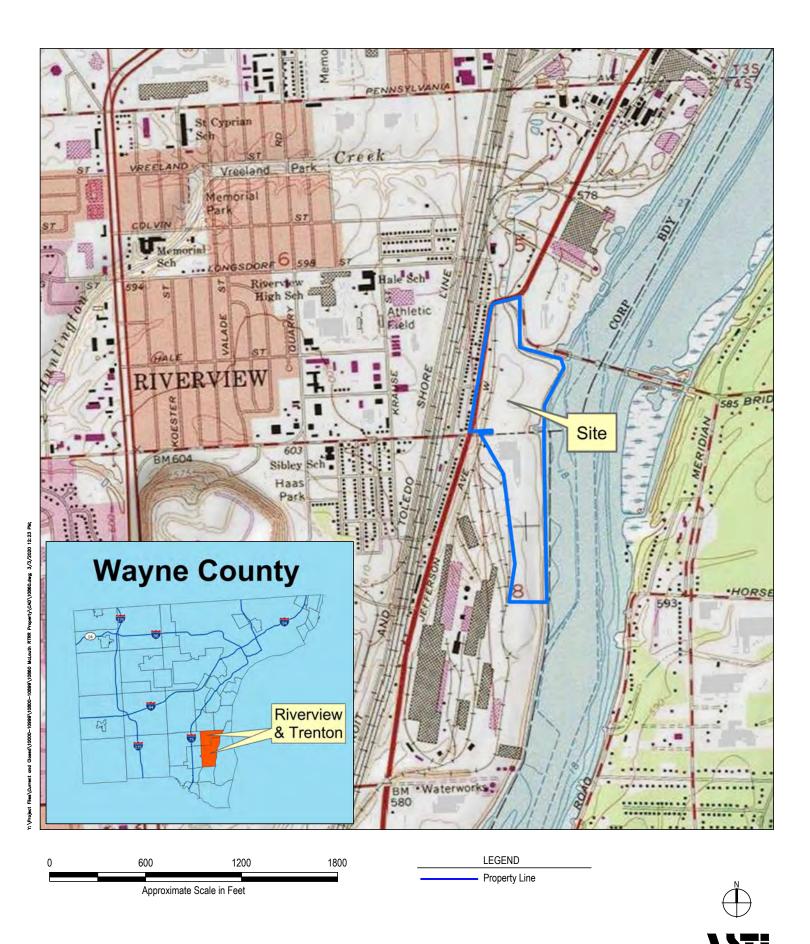
Greg S. Oslosky, P.G.

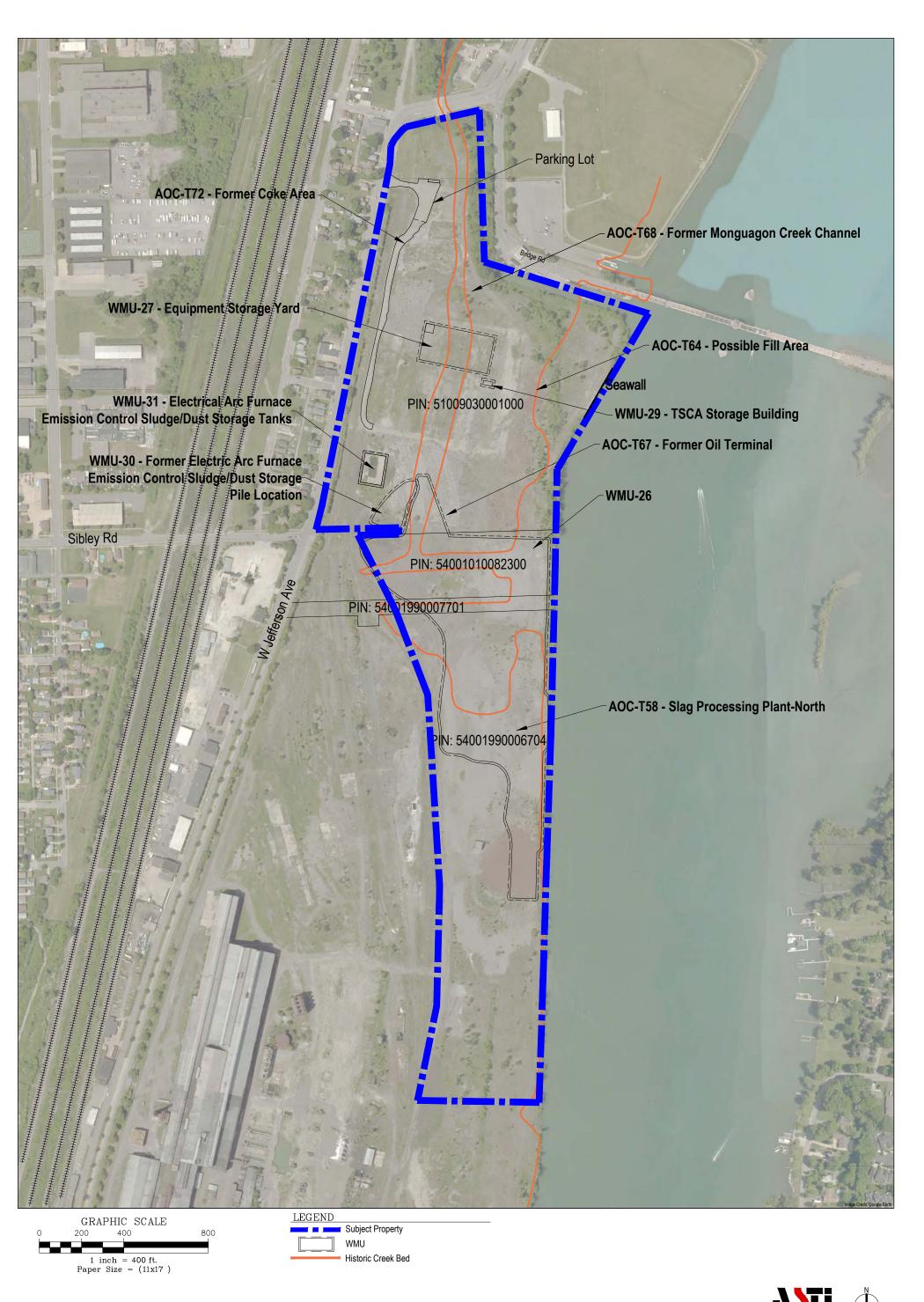
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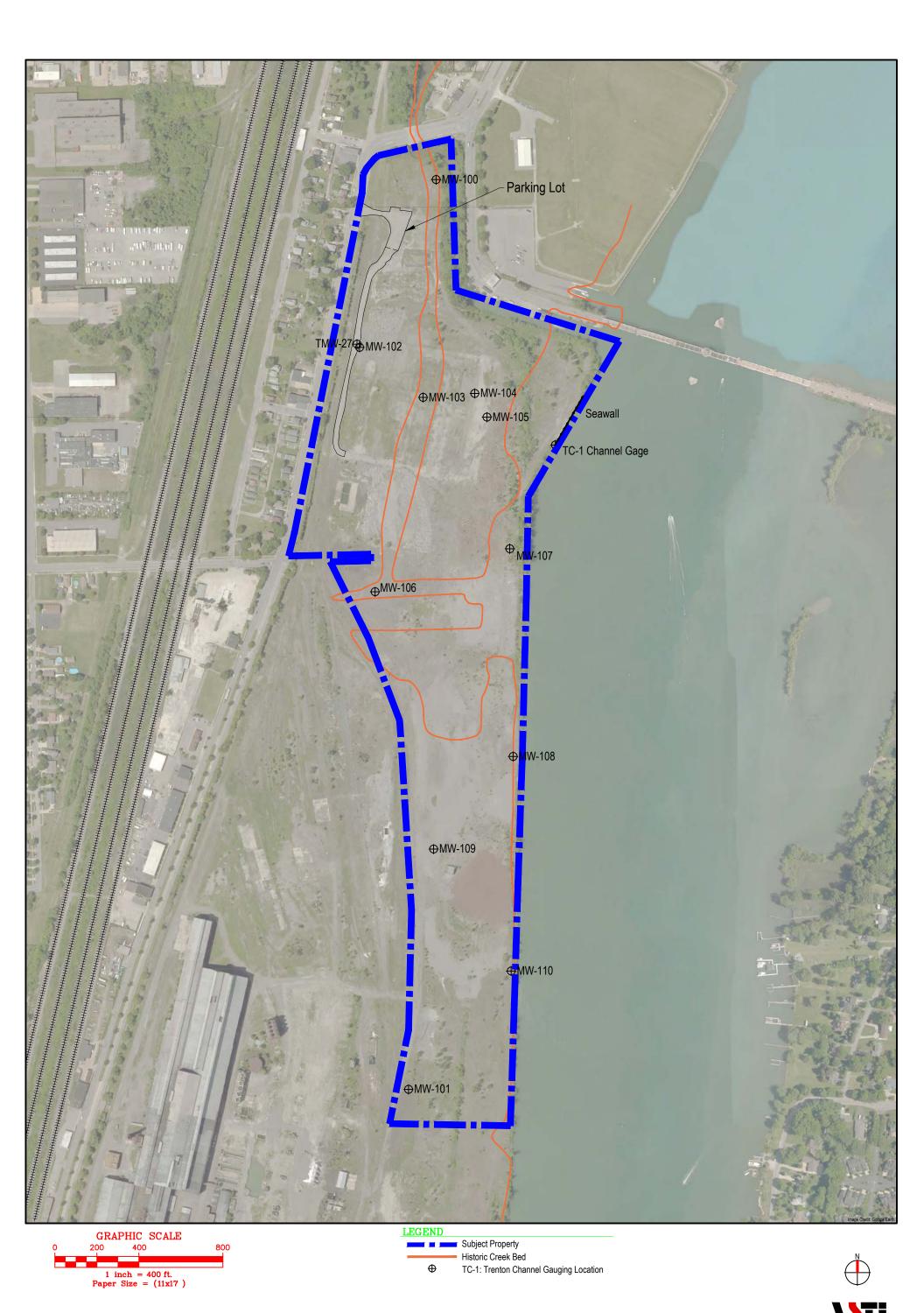
Director - Grand Rapids

FIGURES

- Site Location Map
 RTRR Site Features Map
 Well Location Map







ATTACHMENTS



RTRR – Riverview and Trenton, Michigan Legal Property Descriptions

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Attachment B EGLE Work Plan Approval Letters

GRETCHEN WHITMER

GOVERNOR

STATE OF MICHIGAN

DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

LANSING



July 29, 2019

Mr. Greg Oslosky ASTI Environmental 660 Cascade West Parkway SE, Suite 210 Grand Rapids, Michigan 49546

Dear Mr. Oslosky:

SUBJECT: Approval of Work Plans pursuant to Corrective Action Consent Order

(CACO) No. 111-06-2018; Riverview Trenton Railroad Company (RTRR),

Riverview, Michigan, and Trenton, Michigan; MIK 420 024 889;

Waste Data System Number 497352

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), has completed its review of the submitted Phase I CACO Work Plans for the RTRR site: *Groundwater Investigation Work Plan, Waste Management Unit Investigation Work Plan, Dust Control Work Plan, Stormwater Management Work Plan,* and the *Health and Safety Plan*. The Work Plans were modified by from their initial versions to incorporate necessary changes. Based on the review of the June 28, 2019, versions, the MMD hereby approves the Work Plans subject to the following condition:

1. The well logs from previous investigations referenced in the *Groundwater Investigation Work Plan* are sent to EGLE to confirm depth to groundwater, groundwater/surface water interface, and so on, are reasonable.

Should you have any questions, please contact me at 517-284-6580; RungeJ@Michigan.gov; or EGLE, MMD, P.O. Box 30241, Lansing, MI 48909-7741.

Sincerely.

Jacob Runge, Environmental Engineer

Management and Tracking Unit

Hazardous Waste Section

Materials Management Division

cc: Mr. Tom Wackerman, ASTI Environmental

Mr. Dennis Schreibeis, Crown Enterprises, Inc.

Mr. Richard Conforti, EGLE

Mr. Nathan Erber, EGLE

Corrective Action File



STATE OF MICHIGAN

DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

LANSING



October 11, 2019

Mr. Greg Oslosky ASTI Environmental 660 Cascade West Parkway SE, Suite 210 Grand Rapids, Michigan 49546

Dear Mr. Oslosky:

SUBJECT: Approval of Quality Assurance Project Plan (QAPP) pursuant to Corrective

Action Consent Order (CACO) No. 111-06-2018; Riverview Trenton

Railroad Company (RTRR), Riverview, Michigan, and Trenton, Michigan;

MIK 420 024 889; Waste Data System Number 497352

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), has completed its review of the Phase I CACO QAPP for the RTRR site, submitted by ASTI on October 2, 2019, and revised in response to MMD comments on October 8, 2019. Based on the review, the QAPP is hereby approved.

Should you have any questions, please contact me at 517-284-6580; RungeJ@Michigan.gov; or EGLE, MMD, P.O. Box 30241, Lansing, MI 48909-7741.

Sincerely,

Jacob Runge, Environmental Engineer Management and Tracking Unit Hazardous Waste Section Materials Management Division

cc: Mr. Tom Wackerman, ASTI Environmental

Mr. Dennis Schreibeis, Crown Enterprises, Inc.

Mr. Richard Conforti, EGLE

Mr. John McCabe, EGLE

Mr. Nathan Erber, EGLE

Corrective Action File



STATE OF MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

LANSING



February 19, 2021

VIA E-MAIL AND U.S. MAIL

Mr. Greg Oslosky, Director Western Great Lakes Office ASTI Environmental 660 Cascade West Parkway SE, Suite 210 Grand Rapids, Michigan 49546

Dear Mr. Oslosky:

SUBJECT: Approval of Work Plan pursuant to Corrective Action Consent

Order No. 111-06-2018 (CACO); Riverview Trenton Railroad Company (RTRR), Riverview, Michigan, and Trenton, Michigan;

MIK 420 024 889; Waste Data System Number 497352

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), has completed its review of the Additional Concrete Investigation for Waste Management Unit 31 (Work Plan) at the RTRR site, submitted by ASTI Environmental on February 10, 2021. The Work Plan was reviewed for compliance with the applicable sections of Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and its administrative rules, as well as the site's current CACO. Based on the review, the Work Plan is approved.

If you have any questions, please contact me at 517-242-8496; RungeJ@Michigan.gov; or EGLE, MMD, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Jacob Runge, Environmental Engineer Management and Tracking Unit Hazardous Waste Section Materials Management Division

cc: Mr. Tom Wackerman, President, ASTI Environmental

Mr. Dennis Schreibeis, Director, Crown Enterprises, Inc.

Mr. Richard Conforti, EGLE

Mr. John McCabe, EGLE

Ms. Jennifer Hazelton, EGLE

Mr. Nathan Erber, EGLE

Corrective Action File



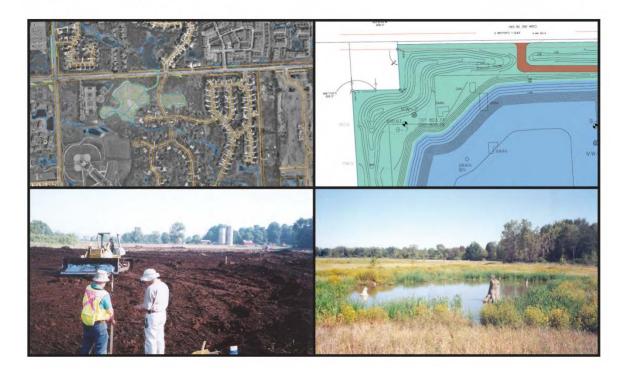
Waste Management Unit 26 Investigation

18251 West Jefferson Riverview, Michigan

Riverview-Trenton Railroad Company

May 18, 2019

ASTI ENVIRONMENTAL





Waste Management Unit 26 Investigation

18251 West Jefferson Riverview, Michigan

May 18, 2019

Prepared For:

Riverview-Trenton Railroad Company 12225 Stephens Road Warren, Michigan 48089

Report Prepared By:

ASTI Environmental 10448 Citation Drive, Suite 100 Brighton, Michigan 48116 (810) 225-2800

ASTI Project No. 10860

Report Prepared by:

Greg S. Oslosky

Director - Grand Rapids Office

Report Reviewed by:

Thomas Wackerman, CHMM

/President



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Appendices

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Figure 1 - Site Location Map Figure 2 - RTRR Site Features Map

Attachment B -Topographic Maps

Photo Log Attachment C -



Waste Management Unit 26 Investigation Riverview-Trenton Railroad Company Former McLouth Steel Site 18251 West Jefferson Avenue Riverview, Michigan

1.0 Introduction

ASTI Environmental ("ASTI") conducted an investigation to determine if the former North Debris Piles were removed from the Riverview-Trenton Railroad Company ("RTRR") property at 18251 W. Jefferson Avenue in the City of Riverview, Wayne County, Michigan ("Subject Property"). The portion of the Subject Property south of Sibley Road lies in the City of Trenton. This investigation was completed on behalf of RTRR as required by the Corrective Action Consent Order ("CACO") between RTRR and the Michigan Department of Environment, Great Lakes, and Energy ("EGLE"), Waste Management and Radiological Protection Division, dated November 1, 2018. This investigation was completed in accordance with the Statement of Work ("SOW") included as Attachment A of the CACO for the Subject Property.

This investigation was completed for the area known as Waste Management Unit 26 ("WMU-26") the former North Debris Piles. Attachment A includes Figure 1 – Site Location Map and Figure 2 – RTRR Site Features Map. Figure 2 includes the extents of WMU-26.

2.0 Background

The McLouth Steel Company (McLouth) acquired the Subject Property between 1956 and 1961, and used portions of it for storage of raw materials, waste, and product to support the integrated production of steel and iron in the production facility located to the south ("McLouth Facility"). A large slag processing operation, operated by E. C. Levy Company, was located on the Subject Property. After about 1975, steel production decreased until McLouth ceased operations in April of 1996 after filing for Chapter 11 bankruptcy protection on September 29, 1995. At that time, only one blast furnace was operational and most other production units were operating at significantly reduced capacities.

Hamlin Holdings, Inc. acquired the Subject Property in July of 1996, although it is unclear what was conducted on the Subject Property during that time. Detroit Steel Company ("DSC") obtained title for the Subject Property in August of 1996, during which time it used the Subject Property for storage and conducted removal activities. DSC resumed pickling of strip steel at the McLouth Facility in July 1998. In support of the pickling operations, DSC started the scrubber, Central Wastewater Treatment Plant, and the pH adjustment station. Those operations closed in 2005. Crown Enterprises purchased the Subject Property on June 2, 2000 and conveyed the property to RTRR in November of 2000.

Historically, the Subject Property included the Monguagon Creek channel, an oil storage terminal, and a large building with docking facilities. By 1961, the large building and oil terminal had been demolished and the Monguagon Creek channel had been rerouted along River Road. By 1967, the original channel and mouth area of Monguagon Creek had been



filled completely and this aera was used for storage of equipment and materials (ore, debris, and scrap)¹.

WMU-26 is an approximately 20-acre area² of the Subject Property located in the central portion of the RTRR property that McLouth Steel used to accumulate various debris from its steel making activities.

3.0 Investigation Activities

3.1 Review of Historical Reports

Based on historical documents, materials placed in the debris piles may have included refractory material, slags, air pollution control solids (from bag houses), basic oxygen furnace ("BOF") scrubber sludge, scale pit sludges, lime handling dust, and air pollution dusts and sludges. The waste streams designated for reclamation were transferred to the Subject Property (former north debris piles) and later processed for recovery of steel scrap and fines.

Waste streams designated for reclamation were not segregated, but randomly mixed in the former piles area. DSC began processing the debris piles for recovery of recyclable steel scrap in June 1997³. The debris was processed using magnetic separation and screens to generate three types of materials; recovered steel, steel fines, and processed debris residuals (all non-magnetic material that passed through the processing plant). Reclaimed steel-containing materials were recycled in the steel-making process and processed debris residuals were transferred to new piles in the same area or directly into trucks for transfer to the landfill.

In July 2000, Detroit Steel Corporation ("DSC") began transporting remaining debris pile material to the Countywide Landfill for disposal. Removal actions at WMU-26 took place beginning in July 2000 and continued into late 2002. Approximately 400,000 cubic yards of debris pile material was processed for recovery, disposal, or spread onsite⁴.

ASTI reviewed historical topographic maps (prior to debris removal by DSC) and compared them to a topographic map created in 2018. The historical topographic map used for comparison was originally included in the *North Area Characterization Plan (Revised)* prepared by Environmental Strategies Corporation ("ESC") and dated November 2, 2000. The historical topographic maps, included in Attachment B, show several piles throughout WMU-26 at the time of the survey. The piles are evident based on topographic highs. ESC provided the extents of WMU-26 on the historical topographic map. The extents of WMU-26 are also depicted in the Site Plan provided as Figure 2. The 2018 topographic map is also included in Attachment B.

The topography in the northern portion of WMU-26 shown in the historical topographic map depicts several mounds throughout the WMU-26 in 2000. The elevation contours depicted in the historical topographic map are five-foot elevation contours. Most of the debris piles have

⁴ Status of Consent Order Activities, Trenton and Gibraltar, Michigan, DSC Ltd, June 2002



-

¹ North Area Characterization Plan, Revised, ESC, November 2, 2000

² RCRA Facility Assessment Report – DSC Ltd. – Trenton Plant, ESC, November 2, 1999

³ Debris Pile Characterization Plan, Techna Corporation, June 8, 1998

a maximum elevation between approximately 610 feet above mean sea level (ft AMSL) to approximately 620 ft AMSL. The heights of the piles generally range from 15 feet to 30 feet.

A review of the topographic map produced in 2018 shows much less mounding compared to the historical topographic map. The elevation contours depicted in the 2018 topographic map are one-foot elevation contours. The elevation in the northern portion of WMU-26 generally ranges between 590 ft AMSL and 595 ft AMSL and is generally consistent with the elevation of the remainder of the property. A few small mounds, approximately five feet in height, are present in the 2018 elevation contours. However, the mounds present in the historical topographic map appear to have been removed from the site.

One large mound is evident in the 2018 topographic map located southeast of the concrete pad of WMU-31. As shown in Figure 2, the footprint of this mound is partially located within the WMU-26 extents. This mound has a maximum elevation of approximately 597 ft AMSL and is approximately six feet to seven feet higher than the surrounding ground surface. Based on a review of Google Earth aerial maps dated between April 2002 and April 2019, it appears that the material comprising the current mound was placed after January 2004 and before March 2005 (after completion of removal of debris material) with additional material placed in the same pile sometime between April 2015 and April 2016. Review of historical documents, and subsequent site investigation, indicated that this mound is composed of asphalt millings.

3.2 Field Investigation

On November 27, 2019, ASTI investigated the area of the former North Debris Piles to determine if the piles are still present. The field investigation consisted of visual reconnaissance of the northern and southern portions of the WUM-26 area as shown on Figure 2. The location of the northern and southern portions of the former North Debris pile were inspected to determine if the surface soil material in those areas are similar to surface soil material outside of the former North Debris pile locations. Photographs taken during the field investigation are shown in the Photo Log included as Attachment C.

The mound currently located partially within WMU-26 near the northern extent is gradually sloped and the material at the surface of the mound was confirmed to be comprised of asphalt millings with grain sizes ranging from coarse sand to fine cobbles mixed with brown silty sand. Some of this material was excavated in 2019, revealing that the asphalt millings range to a depth of up to six feet below the top of the mount.

No large-scale mounding was observed in the southern portion of WMU-26 during the field investigation. One smaller mound was observed near the boarder of the Subject Property and the County Property which is approximately 60 ft long by 20 ft wide and 10 ft high. It does not appear that the material in this mound is associated with the debris from WMU-26 because it appears to be comprised of construction material.

The western portion of the surface in southern WMU-26 is comprised of sand to gravel size slag and asphalt material. Trace amounts of metal debris is present in the surface. The eastern portion of southern WMU-26 is comprised of similar material although more metal debris is present and larger slag debris is present.



4.0 Conclusions

As required by the CACO, ASTI investigated the WMU-26 area. The investigation includes review of historical documents (reports and topographic maps) and a field investigation. Based on the investigation, ASTI believes that the former North Debris Piles have been removed from the Subject Property. One mound, consisting of asphalt millings, is present near the northern extent of WMU-26. Based on a review of historical aerial photos this material was placed after the McLouth Facility ceased operations. Additionally, this mound is located partially outside of the documented extents of WMU-26. A review of the topographic map produced in 2018 shows that surface elevations in the WMU-26 area are generally consistent with the remainder of the Subject Property. Additionally, surface material within the WMU-26 area is consistent with the surface material on other portions of the Subject Property.

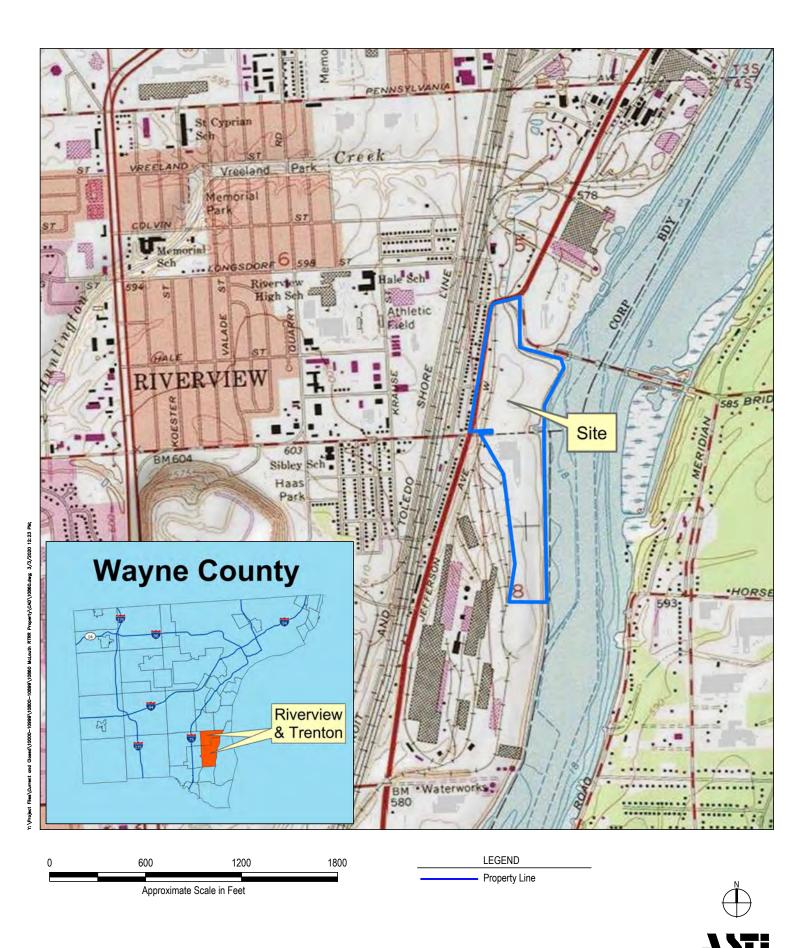
5.0 RCRA Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

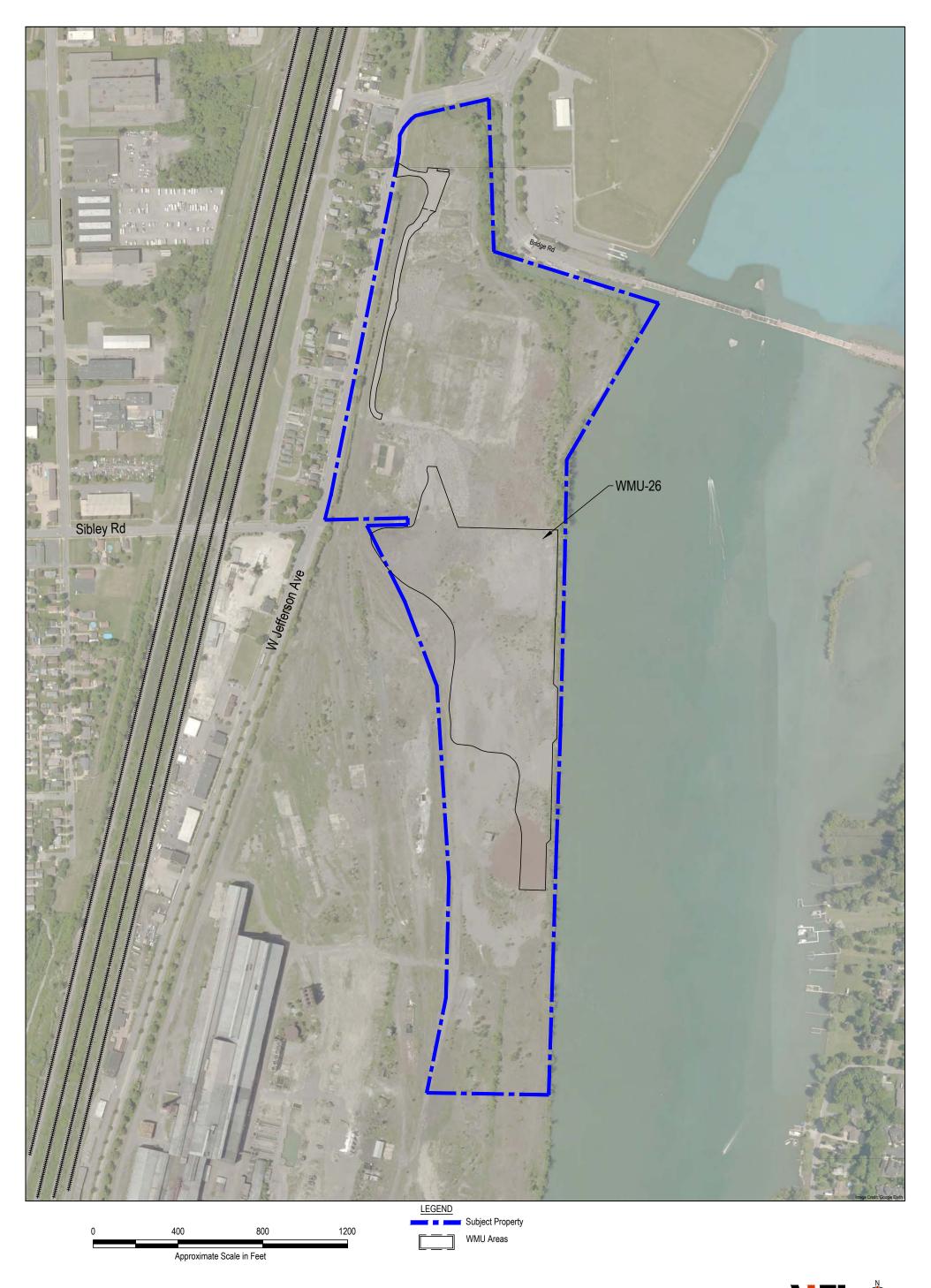
Greg S. Oslosky, P.G. Director – Grand Rapids

Attachment A Figures

Waste Management Unit 26 Investigation

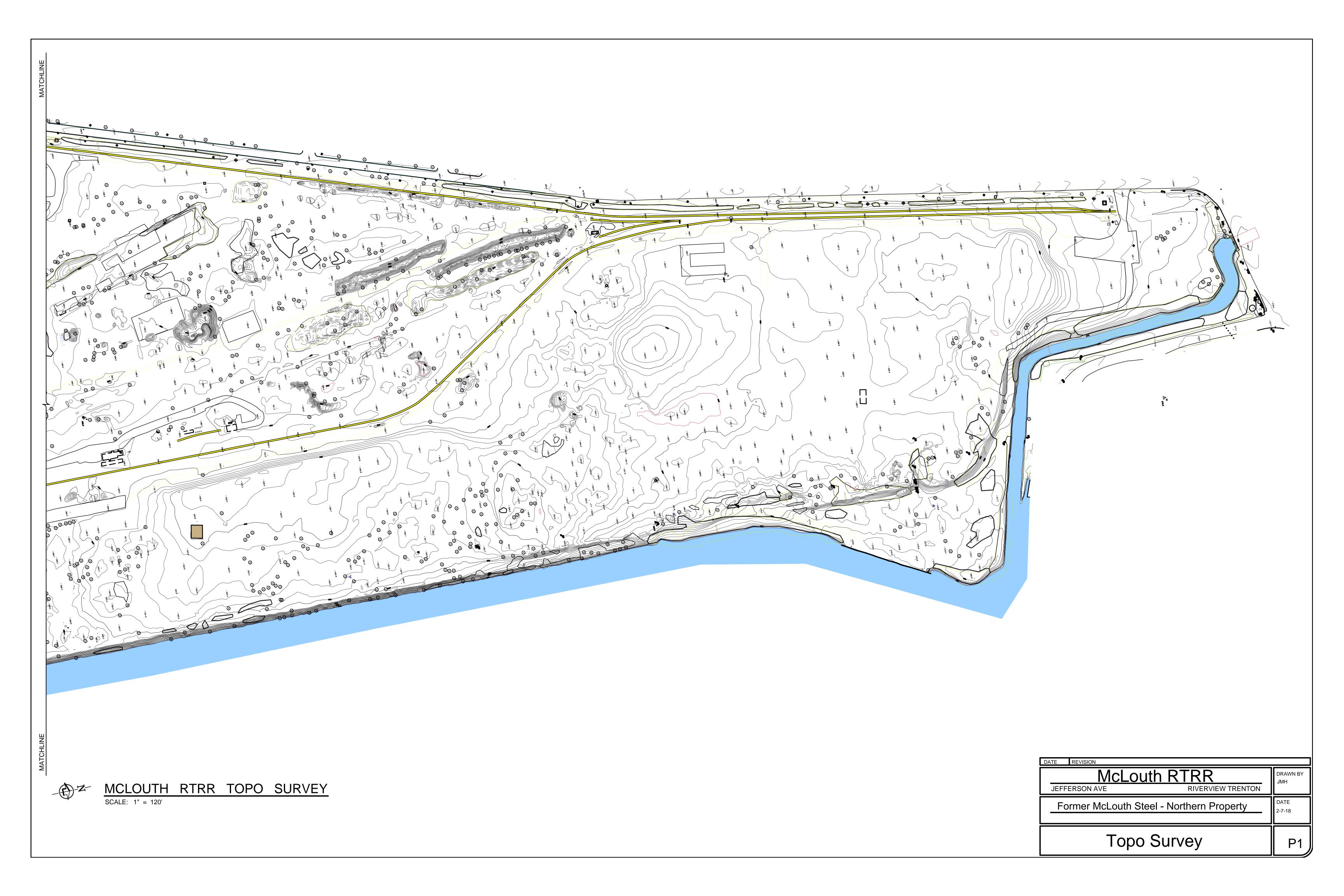


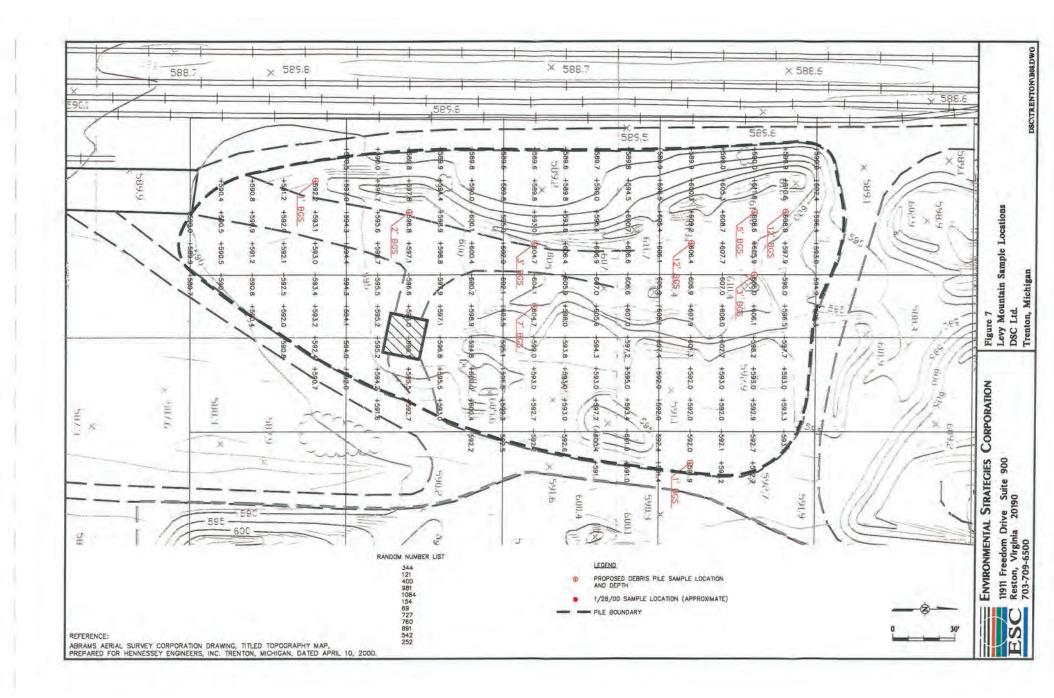
Environmental

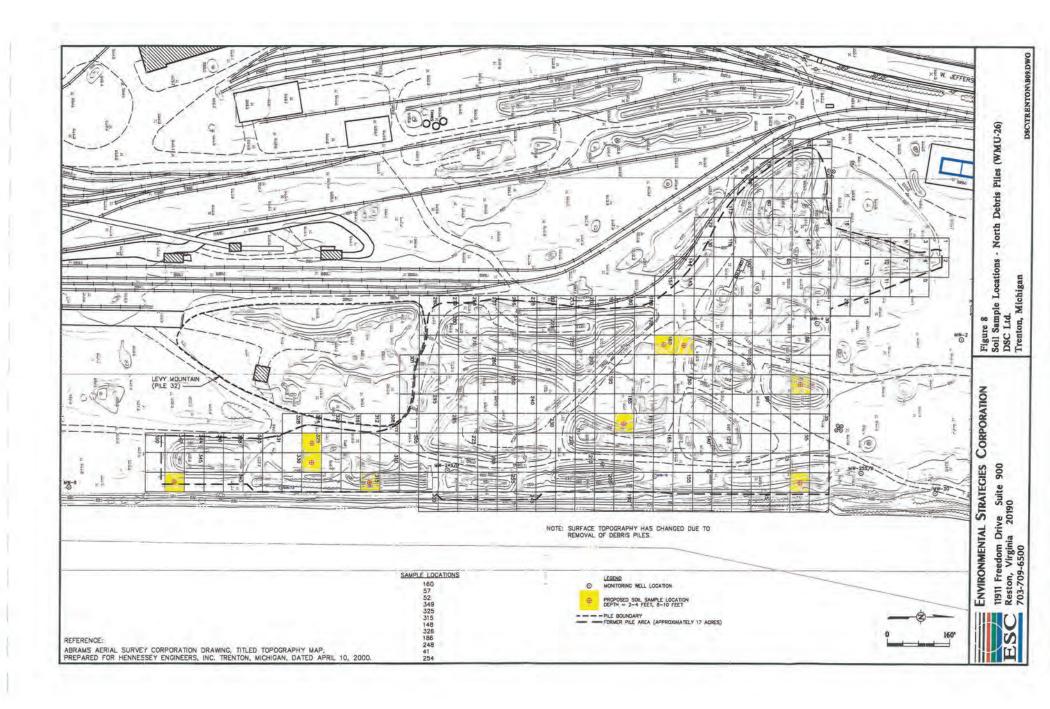


Attachment B Topographic Maps

Waste Management Unit 26 Investigation







Attachment C Photo Log

Waste Management Unit 26 Investigation

WMU-26, RTRR, 18251 West Jefferson Ave., Riverview, Michigan



Photo 1.

View looking south toward former North Debris Pile. Former McLouth Production Facility in the background.



Photo 2.

View looking west toward location of the former North Debris Pile.



Photo 3.

View looking west. Location of former North Debris Pile. Unvegetated area is covered with asphalt millings. Residential area west of West Jefferson in background.



WMU-26, RTRR, 18251 West Jefferson Ave., Riverview, Michigan



Photo 4.

View looking north-northwest. Area of former North Debris Pile in foreground.



Photo 5.

View looking north. Asphalt millings pile in foreground. Gross Ile Bridge Toll Plaza in background.



Photo 6.

View of asphalt millings in the area of former North Debris Piles.



WMU-26, RTRR, 18251 West Jefferson Ave., Riverview, Michigan



Photo 7.

View looking west. Asphalt millings in foreground. Photograph taken from top of topographic high. Intersection of West Jefferson and Sibley Road in background.



Photo 8.

View looking south. Topographic high comprised of asphalt millings in left foreground. Former McLouth Production Facility in background.



Photo 9.

View looking southeast. Location of former North Debris Pile in background. Southwest corner of concrete slab for WMU-31 in foreground.



WMU-26, RTRR, 18251 West Jefferson Ave., Riverview, Michigan



Photo 10.

View looking east-northeast. Location of the former North Debris Pile in the background. Eastern edge of the concrete slab of WMU-31 in foreground.



Photo 11.

View looking west. Apparent construction material pile near western property border. Former McLouth Production Facility in background.



Photo 12.

View looking north. Location of the former location of the southern portion of the North Debris Pile. Former McLouth Production Facility visible in the left half of the photograph.



ASTI ENVIRONMENTAL

ENVIRONMENTAL INVESTIGATION, REMEDIATION, COMPLIANCE AND RESTORATION PROJECTS THROUGHOUT THE GREAT LAKES SINCE 1985.

OUR SERVICES INCLUDE:

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- Environmental Assessments and Impact Statements
- ENVIRONMENTAL OPPORTUNITIES ASSESSMENT
- GIS MAPPING
- HAZARD MITIGATION PLANNING
- MINING AND RECLAMATION ASSISTANCE
- REMEDIATION IMPLEMENTATION, OPERATION AND MAINTENANCE
- PHASE I ESA AND ENVIRONMENTAL DUE DILIGENCE ASSESSMENTS
- REGULATORY COMPLIANCE AND PERMITTING
- Soil and Groundwater Assessments
- Soil and Groundwater Remediation
- STORAGE TANK COMPLIANCE AND CLOSURE
- THREATENED AND ENDANGERED SPECIES SURVEYS
- WATERSHED AND STORMWATER MANAGEMENT PROGRAMS
- WETLAND DELINEATION, PERMITTING, MITIGATION AND BANKING



Attachment D

WMU-27 Soil Investigation Report

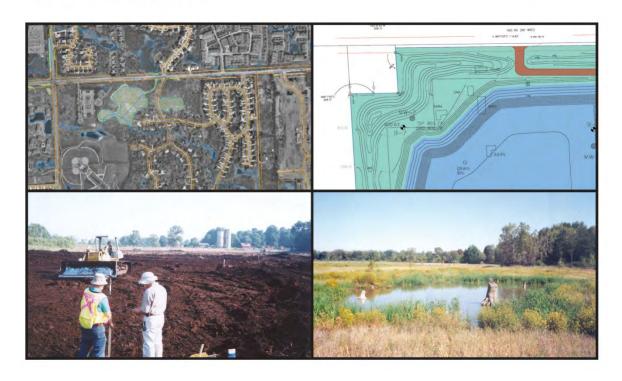
Waste Management Unit 27 Soil Investigation

RTRR Property 18251 West Jefferson Riverview, Michigan

Riverview-Trenton Railroad Company

May 21, 2020

ASTI ENVIRONMENTAL





Waste Management Unit 27 Soil Investigation

RTRR Property 18251 West Jefferson Riverview, Michigan

May 21, 2020

Prepared For:

Riverview-Trenton Railroad Company 12225 Stephens Road Warren, Michigan 48089

Report Prepared By:

ASTI Environmental 10448 Citation Drive, Suite 100 Brighton, Michigan 48116 (810) 225-2800

ASTI Project No. 10860

Report Prepared by:

Greg S. Oslosky

Director - Grand Rapids Office

Report Reviewed by:

Allison J. Rogowski, EP

Associate Environmental Scientist



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	Laboratory Analytical Results	
	Conclusions	
	Measures to Prevent Unacceptable Human Exposure to PCBs	

<u>Tables</u> Table 1 – Summary of Laboratory Analytical Results

Attachments

Attachment A - Figures

Figure 1 - Site Location Map

Figure 2 - RTRR Site Features Map

Figure 3 - WMU-27 Sample Location Map

Attachment B - Historical Sample Location Map

Attachment C - Soil Boring Logs

Attachment D - Laboratory Analytical Report



Waste Management Unit 27 Soil Investigation Riverview-Trenton Railroad Company Former McLouth Steel Site 18251 West Jefferson Avenue Riverview, Michigan

1.0 Introduction

In accordance with the Corrective Action Consent Order ("CACO") dated November 1, 2018 between the Riverview-Trenton Rail Road Company ("RTRR") and the Michigan Department of Environment, Great Lakes, and Energy ("EGLE"), ASTI Environmental ("ASTI") conducted a soil investigation at the property located at 18251 West Jefferson Avenue in the City of Riverview, Wayne County, Michigan ("Subject Property"). The portion of the Subject Property which lies south of Sibley Road, is located in the City of Trenton, Michigan. The investigation was completed in accordance with the Statement of Work included as Attachment A of the CACO for the Subject Property and with the Work Plan – Waste Management Unit Investigations prepared by ASTI dated June 28, 2019 ("Work Plan"). Attachment A includes Figure 1 - Site Location Map and Figure 2 - RTRR Site Features Map.

The investigation was completed for the former Equipment Storage Yard, also known as Waste Management Unit 27 ("WMU-27"). The location of the former Equipment Storage Yard is shown in Figure 2. The purpose of the investigation was to determine the horizontal and vertical extents of polychlorinated biphenyls ("PCBs"). As defined in the CACO, soil analytical results were compared to the Toxic Substance Control Act ("TSCA") PCB Cleanup Level for Low Occupancy Areas of less than or equal to 25 parts per million ("ppm" or milligrams per kilogram).

2.0 Background

The McLouth Steel Company (McLouth) acquired the Subject Property between 1956 and 1961, and used portions of it for storage of raw materials, waste, and product to support the integrated production of steel and iron in the production facility located to the south ("McLouth Facility"). A large slag processing operation, operated by E. C. Levy Company, was located on the Subject Property. After about 1975, steel production decreased until McLouth ceased operations in April of 1996 after filing for Chapter 11 bankruptcy protection on September 29, 1995. At that time, only one blast furnace was operational and most other production units were operating at significantly reduced capacities.

Hamlin Holdings, Inc. acquired the Subject Property in July of 1996, although it is unclear what was conducted on the Subject Property during that time. Detroit Steel Company ("DSC") obtained title for the Subject Property in August of 1996, during which time it used it for storage and conducted removal activities. DSC resumed pickling of strip steel at the McLouth Facility in July 1998. In support of the pickling operations, DSC started the scrubber, Central Wastewater Treatment Plant, and the pH adjustment station. Those operations closed in 2005. Crown Enterprises purchased the Subject Property on June 2, 2000 and conveyed the property to RTRR in November of 2000.



Historically, the Subject Property included the Monguagon Creek channel, an oil storage terminal, and a large building with docking facilities. By 1961, the large building and oil terminal had been demolished and the Monguagon Creek channel had been rerouted along River Road. By 1967, the original channel and mouth area of Monguagon Creek had been filled completely and this aera was used for storage of equipment and materials (ore, debris, and scrap)¹.

After about 1975, production decreased, until McLouth ceased operations in April of 1996 after filing for Chapter 11 bankruptcy protection on September 29, 1995. Hamlin Holdings, Inc. acquired the Subject Property in July of 1996, although it is unclear what was conducted on the Subject Property during that time. Detroit Steel Company ("DSC") obtained title for the Subject Property in August of 1996, during which time it used it for storage and conducted removal activities. Crown Enterprises purchased the Subject Property on June 2, 2000 and conveyed the property to RTRR in November of 2000.

WMU-27 was a fenced area, approximately 1.2 acres, on the northern portion of the RTRR property that was used for secure storage of valuable surplus electrical and mechanical equipment. The area is identified as a Waste Management Unit because it may have been used to store surplus transformers before construction of the Toxic Substance Control Act ("TSCA") Storage Building in 1980. A small (approximately 1,000 square feet) building was located in the northwest corner of the storage yard. The building was not known to have been used for equipment storage; therefore, it is not considered part of the Waste Management Unit². The primary equipment stored in this area was blast furnace equipment. The yard was also used for storage of surplus transformers prior to construction of the TSCA building (WMU-29) in the 1980s. The chain-link fence around the former Equipment Storage Yard has been removed.

3.0 Review of Historical Data

ASTI reviewed historical reports in reference to activities conducted at the WMU-27 area. In October 2000, Earth Tech conducted a PCB investigation in surface soil within the WMU-27 area. Earth Tech collected 12 soil samples from the interval between zero and six inches below ground surface ("bgs") for laboratory analysis of PCBs. The maximum detected PCB concentration was 0.4 ppm. Deeper soil samples (6 inches to 12 inches bgs) were collected during the investigation; however, they were not analyzed due to absence of PCBs in exceedance of 20 ppm which was the cleanup standard set in the Corrective Measures Work Plan (ESC, June 23, 2000).

In January 2001, Environmental Strategies Corporation ("ESC") investigated WMU-27 to determine if PCBs were present in surface soil within the area. Twelve surface soil samples were collected from the interval between zero and six inches bgs for laboratory analysis of PCBs. The maximum detected PCB concentration was 33 ppm (sample identification number W27-08-06 0-6"). The sample collected from the interval between 6 inches and 12 inches bgs in the same soil boring (W27-08-06) contained a total PCB concentration of 2.9

² Corrective Measures Work Plan – Equipment Storage Yard (WMU-27), TSCA Storage Yard (WMU-29), ESC, July 27, 2000



WMU-29 Investigation Report ASTI Project No. 10860

¹ North Area Characterization Plan, Revised, ESC, November 2, 2000

ppm. The remaining PCB concentrations were below 25 ppm³. A map showing the January 2001 sample locations is provided in Attachment B.

In the third quarter of 2001, DSC excavated and loaded approximately 10 cubic yards of PCB-impacted soil from the WMU-27 area. The soil was placed in a roll-off container⁴. On March 8, 2002, the roll-off container was removed from the Subject Property and transported to the Waste Management Woodland Meadows facility for disposal as non-hazardous waste⁵. ASTI could not verify the location of the excavation within WMU-27.

On July 19, 2001, Earth Tech collected eight soil verification samples after removal of PCB-impacted soil from WMU 27⁶. The maximum detected total PCB concentration was less than 5 ppm.

4.0 December 2019 PCB Investigation

4.1 Soil Sample Collection

ASTI conducted a soil investigation in soil in accordance with the CACO and as described in the Work Plan. Prior to field investigation activities, ASTI determined the extents of the former Equipment Storage Yard through review of historical reports and aerial figures. ASTI determined the coordinates of the four corners of the rectangular storage area and the corners were staked by a licensed surveyor prior to field activities. The staked area included the footprint of the former storage yard. Additionally, ASTI's area of investigation extended 10 feet beyond the WMU-27 extents.

In accordance with the CACO Scope of Work, the locations for 20 soil borings were determined using a systematic random approach as described in the EGLE Guidance Document titled Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria ("S3TM" [EGLE, 2002]). WMU-27 measured approximately 330 feet (east/west) by approximately 170 feet (north/south). Including the additional 10 feet beyond side, the area of investigation measured approximately 350 feet (east/west) by approximately 190 feet (north/south). ASTI divided the area of investigation into 20 equally sized subsections, approximately 70 feet (east/west) by 47.5 feet (north/south). Each subsection represented one soil boring location. ASTI used Microsoft Excel to randomly generate specific soil sample locations within each of the 20 subsections. One random number between 0 and 70 was generated for the x-axis (east/west) and one random number between 0 and 47.5 was generated for the y-axis (north/south). The random number generated for the x-axis was 43 and the random number generated for the y-axis was 25. ASTI used these randomly generated numbers to measure from the southwest corner of each subsection; 43 feet east from the southwestern corner and 25 feet north of the southern border of the investigation area. Figure 3 - WMU-27 Sample Location Map shows the WMU-27 investigation area including the grid generated by ASTI and the soil boring locations.

⁶ September – November 2001 Comprehensive Corrective Action and Removal Consent Order Activities, North Area, Trenton and Riverview, Michigan, ESC, December 13, 2001



WMU-29 Investigation Report ASTI Project No. 10860

³ Monitoring Well and Piezometer Installation and Analytical Results transmittal, Former DSC Ltd. Property, Trenton and Riverview, Michigan, ESC, September 18, 2001

⁴ Quarterly Status Report, DSC LTD., Third Quarter 2001

⁵ Quarterly Status Report, DSC LTD., First Quarter 2002

Prior to drilling, ASTI contacted Michigan's MISS DIG system to locate public utilities near the Subject Property. On December 16, 2019, an ASTI scientist supervised installation of 20 soil borings within the WMU-27 area of investigation. Prior to drilling, ASTI marked each soil boring location in the field with a pin flag. The soil borings were installed with the use of a track-mounted hydraulic direct push drill rig. The soil borings were designated as SB-1 through SB-20, with SB-1 located in the southwestern most subsection and numbering continued toward the east (Figure 3).

The ASTI scientist continuously logged and recorded lithology in the project field notebook. Each boring was advanced to drilling refusal and depths ranged from 7 feet bgs to 15 feet bgs. ASTI collected one surface soil sample from the interval between zero and three inches bgs. A second soil sample was collected from the interval directly above the depth of drilling refusal. The Work Plan also proposed collection of a third sample from a boring at an interval if it exhibited the potential for impacts based on visual observations (i.e. staining, odor, etc.). ASTI did not observe any intervals which displayed potential impacts requiring the need for a third sample; therefore, two soil samples were collected from each boring. The soil boring logs are provided in Attachment C.

Soil was retrieved from the borings in a clean disposable acetate liner and scanned with a photoionization detector ("PID"). Prior to sampling, the PID was calibrated to manufacturer specifications using 100 ppm isobutylene span gas. After logging the soil lithology, the ASTI scientist collected soil samples by placing soil directly into clean jars provided by the laboratory. Each sample was labeled with a unique identification number including the Waste Management Unit identification, soil boring identification number, and the depth interval. For example, the soil sample collected from the interval between zero to three-inches bgs in SB-1 was identified as WMU27-SB1-0-3". After collection, the samples were placed on ice and kept cold until delivery to Fibertech Laboratory (Fibertech) in Holt, Michigan using standard chain-of-custody procedures. For the purpose of quality control/quality assurance (QA/QC), ASTI collected a duplicate sample for every 20 samples collected. ASTI collected 40 samples; therefore, 2 duplicate soil samples were collected. Soil samples were analyzed for PCBs by United States Environmental Protection Agency (USEPA) Methods 3546 and 8082A.

4.2 Laboratory Analytical Results

The laboratory analytical results for the WMU-27 soil samples collected in December 2019 indicate that PCBs are not present in the samples at a concentration greater than 25 ppm. The maximum detected concentration detected during this investigation was 13 ppm (13,000 micrograms per kilogram [µg/kg]). This concentration was detected in the sample collected in the interval between 8.5 feet and 9.5 feet bgs in SB-6 (Figure 3). Table 1 provides a summary of the laboratory analytical results for the December 2019 soil investigation. The laboratory analytical report is provided in Appendix D.

5.0 Conclusions

In accordance with the CACO and the Work Plan, ASTI conducted a soil investigation at the WMU-27 area. ASTI collected 40 soil samples (plus 2 QA/QC samples) for analysis of PCBs. Based on laboratory analytical results for the December 2019 soil investigation, PCBs were not detected at concentrations exceeding 25 ppm. The maximum detected concentration was 13 ppm.



Three soil investigations and soil verification sampling has taken place in the WMU-27 area and 71 soil samples (including duplicates) have been collected from the area. One soil sample contained a concentration of PCBs in exceedance of 25 ppm. That sample was collected from the interval between zero and six inches bgs. PCBs were detected in the interval below at a concentration below 25 ppm. PCB-impacted soil was excavated from the WMU-27 area in in the third quarter of 2001 and soil verification sampling did not detect impacted soil above 25 ppm.

6.0 Measures to Prevent Unacceptable Human Exposure to PCBs

Multiple soil investigations have shown that one soil sample contained a concentration of PCBs in exceedance of 25 ppm. Soil excavation was performed, and soil verification sampling confirmed that the exceedance was removed during excavation.

The CACO requires that soil cleanup be based on a comparison to low occupancy closure options under TSCA. The table below provides a summary of low occupancy closure options for PCB impacted soil regulated by TSCA.

TSCA Soil Closure Options – Low Occupancy

Concentration	Remedy
≤25 ppm	Institutional control only
>25 ppm to ≤50 ppm	Fence and marked with a sign including the M ^L mark
>25 ppm to ≤100 ppm	Engineered cap
>100 ppm	Site specific risk-based closure

PCB concentrations are not present in the WMU-27 area in exceedance of 25 ppm. Therefore, institutional controls can be used to prevent unacceptable human exposure to PCBs in this area. An institutional control, such as a deed restriction for the WMU-27 area, could restrict the area to a low occupancy area and that restriction would be maintained in perpetuity.

7.0 RCRA Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Table 1
Summary of Laboratory Analytical Results
Waste Management Unit 27 Investigation

Table 1 Summary of WMU-27 Soil Analytical Results

RTRR - Riverview, Michigan

18251 West Jefferson Ave, Riverview, Michigan

ASTI File No.: 10860

TSCA PCB

Danasatan	Cleanup Level for Low Occupany Areas	WMU27-SB1-0-3" 0-3" 12/16/2019	WMU27-SB1-11-12' 11-12' 12/16/2019	WMU27-SB2-0-3" 0-3" 12/16/2019	WMU27-SB2-11-12' 11-12' 12/16/2019	WMU27-SB3-0-3" 0-3" 12/16/2019	WMU27-SB3-11-12' 11-12' 12/16/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
<u>PCBs</u>							
PCB, Aroclor 1016		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1232		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	490	<100	150	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1254		7,400	460	<100	360	<100	480
PCB, Aroclor 1260		4,000	560	300	360	<100	920
PCB, Aroclor 1262		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100	<100
Polychlorinated biphenyls (PCBs)	25,000	11,400	1,510	300	870	<100	1,400

TSCA PCB

	Cleanup Level for Low Occupany	WMU27-SB11-0-3" 0-3"	WMU27-SB11-11-12 11-12'	WMU27-SB12-0-3' 0-3"	' WMY27-SB12-11-12' 11-12'	WMU27-SB13-0-3 0-3"	" WMU27-SB13-11-12' 11-12'
	Areas	12/16/2019	12/16/2019	12/16/2019	12/16/2019	12/16/2019	12/16/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs							
PCB, Aroclor 1016		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100	<100
PCB. Aroclor 1232		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1254		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1260		<100	110	240	<100	270	<100
PCB, Aroclor 1262		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100	<100
Polychlorinated biphenyls (PCBs)	25,000	<100	110	240	<100	270	<100

Notes:

Bold indicates concentration above laboratory reporting limit.

[&]quot;μg/kg" - micrograms per kilogram or parts per billion

[&]quot;<" indicates concentration below laboratory reporting limit

Table 1 Summary of WMU-27 Soil Analytical Result

RTRR - Riverview, Michigan

18251 West Jefferson Ave, Riverview, Michigan

ASTI File No.: 10860

TSCA PCB

Parameters	Cleanup Level for Low Occupany Areas µg/kg	WMU27-SB4-0-3" 0-3" 12/16/2019 μg/kg	WMU27-SB4-11-12' 11-12' 12/16/2019 μg/kg	WMU27-SB5-0-3" 0-3" 12/16/2019 μg/kg	WMU27-SB5-9-10' 9-10' 12/16/2019 μg/kg	WMU27-SB6-0-3" 0-3" 12/16/2019 μg/kg
PCBs						
PCB, Aroclor 1016		<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100
PCB, Aroclor 1232		<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	<100	<100	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100
PCB, Aroclor 1254		<100	<100	180	<100	180
PCB, Aroclor 1260		210	540	160	<100	150
PCB, Aroclor 1262		<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	1,600	<100	<100	<100
Polychlorinated biphenyls (PCBs)	25,000	210	2,140	340	<100	330

	TSCA PCB Cleanup Level for Low Occupany Areas	WMU27-SB14-0-3" 0-3" 12/16/2019	NMU27-SB14-11-11.75 11-11.75' 12/16/2019	5 WMU27-SB15-0-3" 0-3" 12/16/2019	WMU27-SB15-11-12 11-12' 12/16/2019	WMU27-DUP2 2' WMU27-SB16-0-3" 0-3" 12/16/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs						
PCB, Aroclor 1016		<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100
PCB. Aroclor 1232		<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	<100	<100	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100
PCB, Aroclor 1254		<100	<100	<100	<100	<100
PCB, Aroclor 1260		<100	110	<100	3,600	<100
PCB, Aroclor 1262		<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100
Polychlorinated biphenyls (PCBs)	25,000	<100	110	<100	3,600	<100

Notes:

Bold indicates concentration above laboratory reporting li

"μg/kg" - micrograms per kilogram or parts per billion

"<" indicates concentration below laboratory reporting limi

Table 1 Summary of WMU-27 Soil Analytical Result

RTRR - Riverview, Michigan

18251 West Jefferson Ave, Riverview, Michigan

ASTI File No.: 10860

	TSCA PCB Cleanup Level for Low Occupany Areas	WMU27-DUP1 WMU27-SB6-0-3" 0-3" 12/16/2019	WMU27-SB6-8.5-9.5' 8.5-9.5' 12/16/2019	WMU27-SB7-0-3" 0-3" 12/16/2019	//MU27-SB7-10.5-11.5 10.5-11.5' 12/16/2019	WMU27-SB8-0-3" 0-3" 12/16/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs	· -	<u> </u>			<u> </u>	
PCB, Aroclor 1016		<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100
PCB, Aroclor 1232		<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	<100	<100	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100
PCB, Aroclor 1254		<100	<100	<100	<100	<100
PCB, Aroclor 1260		2,300	13,000	<100	<100	<100
PCB, Aroclor 1262		<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100
Polychlorinated biphenyls (PCBs)	25,000	2,300	13,000	<100	<100	<100

TSCA	PCB
------	-----

Parameters	Cleanup Level for Low Occupany Areas µg/kg	WMU27-SB16-0-3" 0-3" 12/16/2019 μg/kg	WMU27-SB16-7-8' 7-8' 12/16/2019 μg/kg	WMU27-SB17-0-3" 0-3" 12/16/2019 μg/kg	WMU27-SB17-6-7' 6-7' 12/16/2019 μg/kg	WMU27-SB18-0-3" 0-3" 12/16/2019 μg/kg
PCBs	100	100	100	100	100	100
PCB, Aroclor 1016		<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100
PCB. Aroclor 1232		<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	<100	<100	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100
PCB, Aroclor 1254		<100	<100	<100	<100	<100
PCB, Aroclor 1260		<100	<100	<100	<100	140
PCB, Aroclor 1262		<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100
Polychlorinated biphenyls (PCBs)	25,000	<100	<100	<100	<100	140

Notes:

Bold indicates concentration above laboratory reporting li

"μg/kg" - micrograms per kilogram or parts per billion

[&]quot;<" indicates concentration below laboratory reporting limi

Table 1 Summary of WMU-27 Soil Analytical Result

RTRR - Riverview, Michigan

18251 West Jefferson Ave, Riverview, Michigan

ASTI File No.: 10860

TSCA PCB

	Cleanup Level for Low Occupany	WMU27-SB8-10-11' 10-11'	WMU27-SB9-0-3" 0-3"	WMU27-SB9-7-8' 7-8'	WMU27-SB10-0-3" 0-3"	WMU27-SB10-7-8' 7-8'
D .	Areas	12/16/2019	12/16/2019	12/16/2019	12/16/2019	12/16/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs						
PCB, Aroclor 1016		<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100
PCB, Aroclor 1232		<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	<100	<100	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100
PCB, Aroclor 1254		<100	<100	<100	<100	<100
PCB, Aroclor 1260		370	220	<100	<100	<100
PCB, Aroclor 1262		<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100
Polychlorinated biphenyls (PCBs)	25,000	370	220	<100	<100	<100

TSCA PCB

	Cleanup Level for	WMU27-SB18-9-10'	WMU27-SB19-0-3"	WMU27-SB19-6-7'	WMU27-SB20-0-3"	WMU27-SB20-9-10'
	Low Occupany	9-10'	0-3"	6-7'	0-3"	9-10'
	Areas	12/16/2019	12/16/2019	12/16/2019	12/16/2019	12/16/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs						
PCB, Aroclor 1016		<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100
PCB. Aroclor 1232		<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	120	<100	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100
PCB, Aroclor 1254		<100	<100	<100	<100	<100
PCB, Aroclor 1260		1,400	200	<100	<100	<100
PCB, Aroclor 1262		<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100
Polychlorinated biphenyls (PCBs)	25,000	1,400	320	<100	<100	<100

Notes:

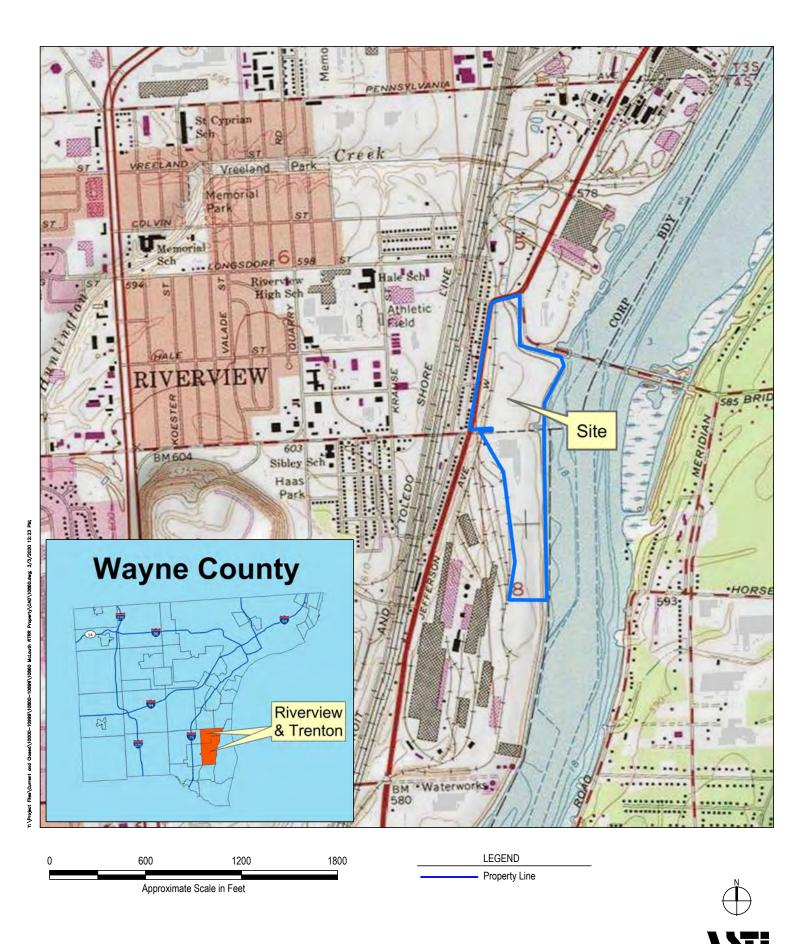
Bold indicates concentration above laboratory reporting li

"μg/kg" - micrograms per kilogram or parts per billion

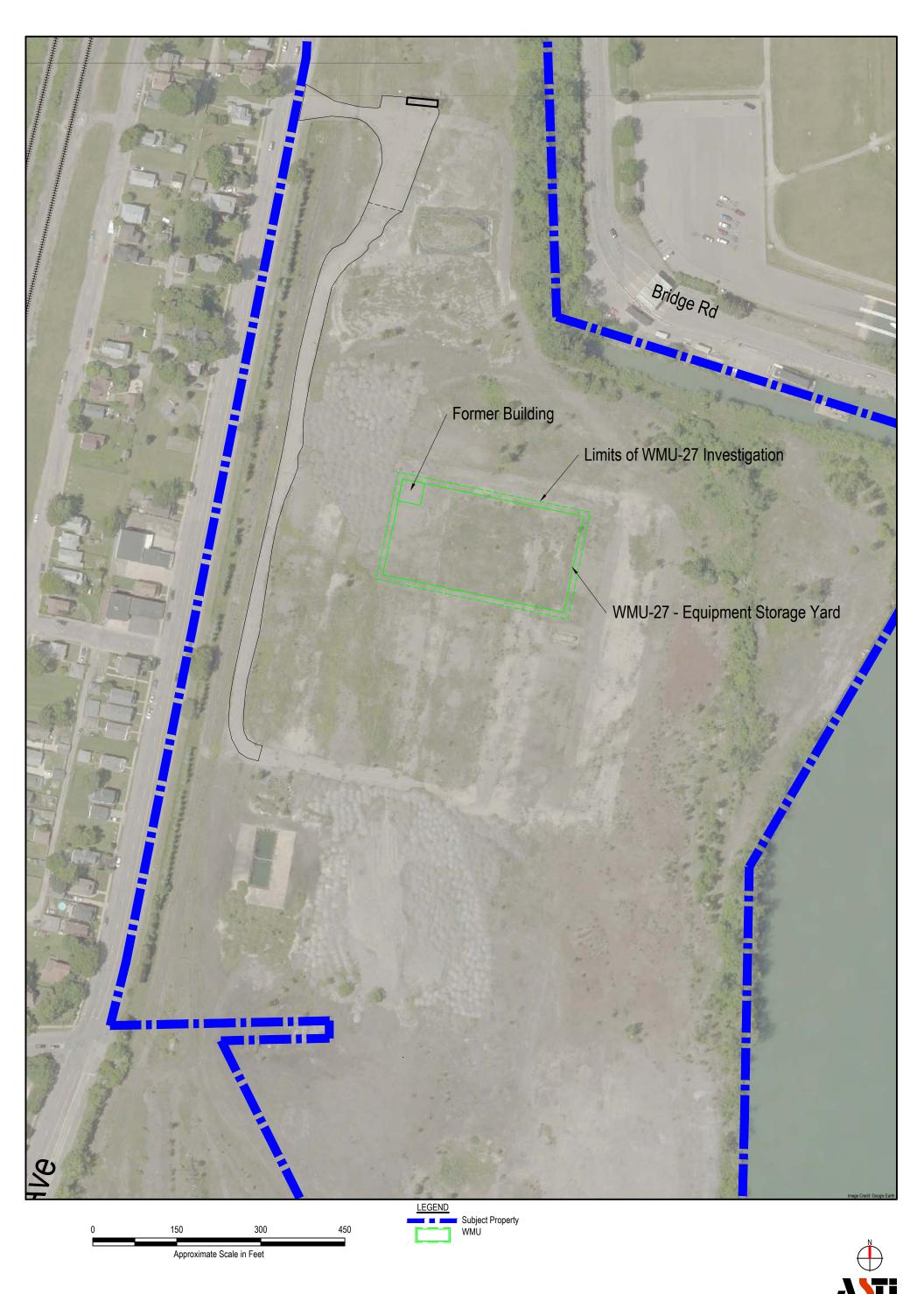
[&]quot;<" indicates concentration below laboratory reporting limi

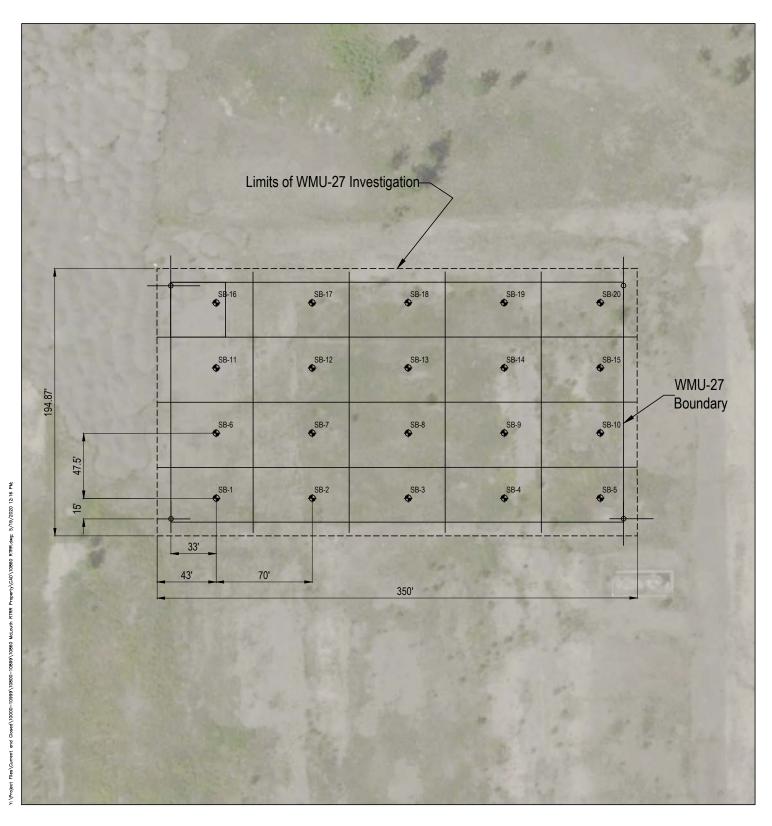
Attachment A Figures

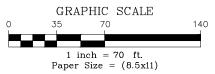
Waste Management Unit 27 Investigation



Environmental







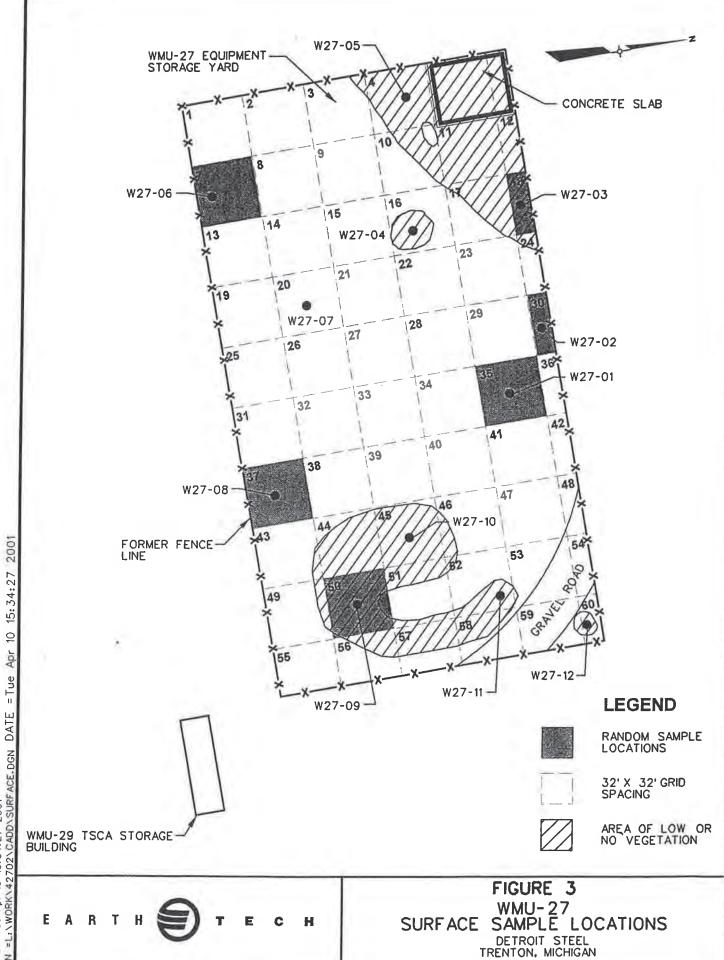
Soil Boring Location
Stake Location



18251 West Jefferson, Riverview, MI

Attachment B Sample Location Map – Previous Investigations

Waste Management Unit 27 Investigation



SCALE: 1" = 50'

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APRIL 2001

.... = L....RK\4_, ._.\CADLFACE.pri DATE = Tue Apr 10 15:34:27 2001 DGN = L:\WORK\42702\CADD\SURFACE.DGN

Attachment C Soil Boring Logs

Waste Management Unit 27 Investigation

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB1
Total Depth:	15'
Date Completed:	12/16/2019
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	12'

De From	Depth Description		PID (ppm)	Sample Depth
0	4"	Topsoil, medium to coarse grained sand, trace silt, gravel, and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	2'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and concrete, brown, moist, loose (fill)	0.0	
2'	12'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, and brick, black, moist, loose (fill)	0.0	
12'	15'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, and brick, black, wet, loose (fill)	0.0	Soil at 11-12'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB2
Total Depth:	12'
Date Completed:	12/16/2019
	•
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	12'

	epth	Description	PID (ppm)	Sample Depth
From	То		(ррііі)	Берит
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
0	4.5'	silt, gravel, slag, and concerete, dark brown, moist, loose (fill)	0.0	0-3"
		SAND, medium to coarse grained, trace very fine to fine grained sand,		
4.5'	10'	silt, gravel, slag, concerete, and metal, dark brown, moist, loose (fill)	0.0	
		SAND, medium to coarse grained, trace very fine to find grained sand,		Soil at
10'	12'	silt, gravel, slag, and concerete, dark brown, moist, loose (fill)	0.0	11-12'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB3
Total Depth:	12'
Date Completed:	12/16/2019
1045	1
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De	Depth Description		PID (ppm)	Sample
From	To			Depth
0	4.5'	SAND, medium to coarse grained, trace very fine to fine grained sand, silt, gravel, slag, and concerete, brown, moist, loose (fill)	0.0	Soil at 0-3"
4.5'	10'	SAND, medium to coarse grained, trace very fine to fine grained sand, silt, gravel, brown, moist, loose (fill)	0.0	
10'	12'	SAND, fine to medium grained, trace very fine grained sand, gravel, and silt, brown, moist, compact (sand)	0.0	Soil at 11-12'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB4
Total Depth:	12'
Date Completed:	12/16/2019
MM/ Data	I
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De From	epth To	Description	PID (ppm)	Sample Depth
0	2'	SAND, medium to coarse grained, trace very fine to fine grained sand, silt, gravel, slag, and brick, brown, moist, loose (fill)	0.0	Soil at 0-3"
2'	7'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, and slag, dark brown, moist, loose (fill)	0.0	
7'	7.5'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, and metal, dark brown, moist, loose (fill)	0.0	
7.5'	12'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, slag, and concrete, dark brown, moist, loose (fill)	0.0	Soil at 11-12'
		End of Boring		
-		SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, slag, and concrete, dark brown, moist, loose (fill)		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB5
Total Depth:	10'
Date Completed:	12/16/2019
MM/ D-4-	1
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

Depth Description		PID (ppm)	Sample Depth	
0	4"	Topsoil, medium to coarse grained sand, trace silt, gravel, vegetation, slag, brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	4'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, brick, and slag, dark brown, moist, loose (fill)	0.0	- 5 0
4'	8'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, concrete, and slag, dark brown, moist, loose (fill)	0.0	
8'	10'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and concrete, dark brown with metallic shine, moist, loose	0.0	Soil at 9-10'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data Boring ID:	WMU27-SB6
Total Depth:	9.5'
Date Completed:	12/16/2019
MW Data]
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De From	Depth Description		PID (ppm)	Sample Depth
0	1'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
1'	4'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, concrete and slag, dark brown, moist, loose (fill)	0.0	
4'	6.5'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, and slag, dark brown, moist, loose (fill)	0.0	
6.5'	7'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, brick and slag, dark brown, moist, loose (fill)	0.0	
7'	9.5'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, and slag, dark brown, moist, loose (fill)	0.0	Soil at 8.5-9.5'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB7
Total Depth:	11.5'
Date Completed:	12/16/2019
104/ 5 /	
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De From	epth To	Description		Sample Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, concrete and vegetation, brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	4.5'	SAND, fine to medium grained, trace very fine grained sand, gravel, concrete, and slag, dark brown, moist, loose (fill)	0.0	
4.5'	8'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, slag, and concrete, dark brown, moist, loose (fill)	0.0	
8'	11.5'	SAND, fine to medium grained, trace very fine grained sand, gravel, concrete, wood, and slag, dark brown, moist, compacted (fill)	7.2	Soil at 10.5-11.5'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

	Boring Data	
,	Boring ID:	WMU27-SB8
	Total Depth:	11'
	Date Completed:	12/16/2019
ĺ	MM/ Data	I
	MW Data	
	Size:	NA
	Type:	NA
	Screen Length:	NA
	Well Depth:	NA
	GW Depth (▼):	NA

De	epth	Description		Sample
From	То			Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	8'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, slag, and concrete, dark brown, moist, loose (fill)	0.0	
8'	11'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 10-11'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB9
Total Depth:	8'
Date Completed:	12/16/2019
MW/ Data	1
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De	epth	Description		Sample
From	То			Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, vegetation and slag, brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	4.5'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, slag, brick, and concrete, dark brown, moist, loose (fill)	0.0	
4.5'	8'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 7-8'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB10
Total Depth:	8'
	•
Date Completed:	12/16/2019
	•
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

	pth	Description		Sample Depth
From	To			Бериі
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, vegetation and slag, brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	8'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, slag, and concrete, dark brown, moist, loose (fill)	0.0	Soil at 7-8'
	End of Boring			

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB11
Total Depth:	12'
Date Completed:	12/16/2019
MW Data	1
21121	NIA
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De	epth	Description		Sample
From	To			Depth
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
0	6"	gravel, silt, asphalt, and vegetation, brown, moist, loose (fill)	0.0	0-3"
		SAND, medium to coarse grained, trace very fine to fine grained sand,		
6"	10'	gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
10'	12'	gravel, silt and slag, dark brown, moist, compact (fill)	0.0	11-12'
		End of Boring		

ppm = parts per million

MW = monitoring well TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB12
Total Depth:	12'
Date Completed:	12/16/2019
MW Data	
Size:	l NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De	epth	Description	PID (ppm)	Sample
From	То	 		Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, vegetation, and concrete, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	9'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, concrete and slag, brown, moist, loose (fill)	0.0	
9'	12'	SAND, medium to coarse grained, trace very fine to fine grained sand and slag, dark brown, moist, loose (fill)	0.0	Soil at 11-12'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data Boring ID:	WMU27-SB13
Total Depth:	12'
Date Completed:	12/16/2019
MW Data Size:	 NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De	Depth Description		PID (ppm)	Sample
From	То	·		Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	9'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, metal and slag, dark brown, moist, loose (fill)	0.0	
9'	12'	SAND, medium to coarse grained, trace very fine to fine grained sand, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 11-12'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data Boring ID: Total Depth:	WMU27-SB14
Date Completed:	
MW Data	1
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	11.75

De From	epth To	Description	PID (ppm)	Sample Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	3.5'	SAND, medium to coarse grained, trace very fine to fine grained sand and slag, grey, moist, loose (fill)	0.0	
3.5'	11'	SAND, medium to coarse grained, trace very fine to fine grained sand and slag, dark brown, moist, loose (fill)	0.0	
11'	12'	SAND, medium to coarse grained, trace very fine to fine grained sand and slag, black, moist, loose (fill)	0.0	Soil at 11-12'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB15
Total Depth:	12'
Date Completed:	12/16/2019
MW Data	1
	NIA
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De From	epth To	Description		Sample Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	7.75'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	
7.75'	8	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, slag, and wood, dark brown, moist, loose (fill)	0.0	
8'	12'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 11-12'
		End of Boring		

ppm = parts per million MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: **RTRR** Proj. Number: 10860 18251 West Jefferson Site Address: Riverview, Michigan Drilled by: ERG Method: Direct push probe Mitchel Dykla Geologist:

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB16
Total Depth:	8'
Date Completed:	12/16/2019
MW Data	I
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

	epth	Description		Sample Depth
From	To			Deptil
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
0	4"	gravel, silt, and asphalt, dark brown, moist, loose (fill)	0.0	0-3"
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
4"	8'	gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	6-7'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB17
Total Depth:	7'
	•
Date Completed:	12/16/2019
	i
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
	_
GW Depth (▼):	NA

De	epth	Description		Sample Depth
From	To			Deptil
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, slag, and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	7'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 6-7'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB18
Total Depth:	10'
Date Completed:	12/16/2019
	1
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Denth (▼):	NΔ

De	epth	Description		Sample
From	To			Depth
0	1'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, and silt, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
1'	3.5'	SILTY CLAY, trace very fine to fine grained sand and gravel, brown, stiff (fill)	0.0	
3.5'	10'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 9-10'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU27-SB19
Total Depth:	7'
Date Completed:	12/16/2019
•	
	_
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

Depth From I To		Description	PID (ppm)	Sample Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	7'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 6-7'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

	Boring Data	
	Boring ID:	WMU27-SB20
	Total Depth:	10'
[Date Completed:	12/16/2019
		•
	MW Data	
	Size:	NA
	Type:	NA
	Screen Length:	NA
	Well Depth:	NA
	GW Depth (▼):	NA

Depth		Description	PID (ppm)	Sample Depth
From	To		(ррііі)	Deptil
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
0	4"	gravel, silt, and vegetation, dark brown, moist, loose (fill)	0.0	0-3"
		SAND, fine to medium grained, trace very fine grained sand, gravel, silt,		Soil at
4"	10'	and slag, dark brown, moist, loose (fill)	0.0	9-10'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Attachment D Laboratory Analytical Report

Waste Management Unit 27 Investigation



Friday, January 03, 2020

Fibertec Project Number: 94220

Project Identification: 5-10860 /5-10860

Submittal Date: 12/17/2019

Mr. Greg Oslosky
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Oslosky,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Stephannie Wallace at 10:30 AM, Jan 03, 2020

Stephan. Wallam

For Daryl P. Strandbergh Laboratory Director

Enclosures

RSN: 94220-200103101317



Order: 94220 Page: 2 of 44 Date: 01/03/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB1-0-3" Chain of Custody:

181437

Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860 5-10860

Sample Matrix:

Soil/Solid Collect Time: 09:37

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

12/19/19

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-001 Aliquot ID: Description: WMU27-SB1-0-3"

Matrix: Soil/Solid

Preparation Analysis Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

MC191219

1. Percent Moisture (Water Content)

Aliquot ID:

94220-001

12/20/19

MC191219 DB

Polychlorinated Biphenyls (PCBs)

Description: WMU27-SB1-0-3"

1.0

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Q

Result

13

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		μg/kg	770	50	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
2. Aroclor-1221	U		μg/kg	770	50	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
3. Aroclor-1232	U		μg/kg	770	50	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
4. Aroclor-1242	U		μg/kg	770	50	12/19/19	PS19L19F	12/28/19	SF19L28B	RDF
5. Aroclor-1248	U		μg/kg	770	50	12/19/19	PS19L19F	12/28/19	SF19L28B	RDŁ
6. Aroclor-1254	7400	J+	μg/kg	770	50	12/19/19	PS19L19F	01/02/20	SF20A02B	RDF
7. Aroclor-1260	4000	J+	μg/kg	770	50	12/19/19	PS19L19F	12/28/19	SF19L28B	RDF
\$. Aroclor-1262	U		μg/kg	770	50	12/19/19	PS19L19F	12/28/19	SF19L28B	RDŁ
‡ 9. Aroclor-1268	U		μg/kg	770	50	12/19/19	PS19L19F	12/28/19	SF19L28B	RDF

RSN: 94220-200103101317



Order: 94220 Page: 3 of 44 Date: 01/03/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB1-11-12' Chain of Custody:

181437

Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860 5-10860

Sample Matrix:

Soil/Solid Collect Time: 09:47

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-002 Aliquot ID:

Matrix: Soil/Solid

Description: WMU27-SB1-11-12'

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB 10 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-002

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-SB1-11-12'

					Preparation		Analysis	
Parameter(s)	Result 0	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init
1. Aroclor-1016	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDI
2. Aroclor-1221	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDI
3. Aroclor-1232	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDI
4. Aroclor-1242	490	μg/kg	100	5.0	12/19/19	PS19L19F	12/27/19	SC19L27C RDI
5. Aroclor-1248	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDI
6. Aroclor-1254	460 J	l+ μg/kg	100	5.0	12/19/19	PS19L19F	01/02/20	SF20A02B RDI
7. Aroclor-1260	560 J	l+ μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDI
8. Aroclor-1262	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDI
9. Aroclor-1268	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDI



Order: 94220 Page: 4 of 44 Date: 01/03/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB2-0-3"

Reporting Limit

Chain of Custody:

181437

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 09:57

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Result

7

Q

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

P. Date

12/19/19

Preparation

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-003 Aliquot ID:

Dilution

1.0

Matrix: Soil/Solid

P. Batch

MC191219

Description: WMU27-SB2-0-3"

Analysis A. Date A. Batch Init.

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

94220-003

12/20/19

MC191219 DB

Method: EPA 3546/EPA 8082A

Description: WMU27-SB2-0-3"

Matrix: Soil/Solid

MICHIGA. EL A 0540/EL A 0002A	Bescription. Willow Obe 0									
						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
2. Aroclor-1221	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
3. Aroclor-1232	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
4. Aroclor-1242	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
5. Aroclor-1248	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
6. Aroclor-1254	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
7. Aroclor-1260	300		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK

RSN: 94220-200103101317



Order: 94220 Page: 5 of 44 Date: 01/03/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB2-11-12' Chain of Custody:

181437

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

MC191219 DB

Client Project No:

5-10860 Sample Matrix:

Collect Time:

Preparation

10:06

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID:

Soil/Solid

94220-004

P. Date

12/19/19

Matrix: Soil/Solid

Description: WMU27-SB2-11-12'

Analysis A. Date A. Batch Init.

12/20/19

Parameter(s) Result Q Units Reporting Limit Dilution 1. Percent Moisture (Water Content) 13 % 1.0

> Aliquot ID: 94220-004

Matrix: Soil/Solid

P. Batch

MC191219

Polychlorinated Biphenyls (PCBs) Method: EPA 3546/EPA 8082A

Description: WMU27-SB2-11-12'

		· · · · · · · · · · · · · · · · · · ·									
		Q Units				Preparation		А	nalysis		
Parameter(s)	Result C		Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.		
1. Aroclor-1016	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
2. Aroclor-1221	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
3. Aroclor-1232	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
4. Aroclor-1242	150		μg/kg	100	5.0	12/19/19	PS19L19F	12/27/19	SC19L27C	RDK	
5. Aroclor-1248	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
6. Aroclor-1254	360	J+	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A	RDK	
7. Aroclor-1260	360	J+	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	



Order: 94220 6 of 44 Page: Date: 01/03/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB3-0-3" Chain of Custody:

181437

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 10:13

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Parameter(s)

1. Aroclor-1016 2. Aroclor-1221

3. Aroclor-1232

4. Aroclor-1242

5. Aroclor-1248 6. Aroclor-1254

7. Aroclor-1260

8. Aroclor-1262 9. Aroclor-1268 Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Result

U

U

U

U U

U

U U

U

μg/kg

Q

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID:

94220-005

Matrix: Soil/Solid

Description:	WMU27-SB3-0-3"	
	Preparation	Analysis

Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) 9 % 1.0 12/19/19 MC191219 12/20/19 MC191219 DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

100

94220-005

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-SB3-0-3"

	Des	cription.	WWW.027-303-0-3				
			Prepara	ation	Aı	nalysis	
Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK
μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK

12/19/19

PS19L19F

12/28/19

SF19L28B RDK

DCSID: G-610.19 (10/01/19)



Order: 94220 7 of 44 Page: Date: 01/03/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB3-11-12' Chain of Custody:

181437

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 10:25

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-006 Aliquot ID:

Matrix: Soil/Solid

Description: WMU27-SB3-11-12'

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB 14 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-006

U27-SB3-11-12'

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A				Des	cription:	WMU
Devemotor(a)	Dogult	0	Llaita	Departing Limit	Dilution	

						Prepa	ration	A	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDK
2. Aroclor-1221	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDK
3. Aroclor-1232	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDK
4. Aroclor-1242	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDK
5. Aroclor-1248	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDK
6. Aroclor-1254	480	J+	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDK
7. Aroclor-1260	920	J+	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDK
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDK
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RDK



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Client Identification: Applied Science & Technology,

Inc. - Brighton

WMU27-SB4-0-3" Sample Description:

Chain of Custody:

181437

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

10:34

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID: Description: WMU27-SB4-0-3"

94220-007

Matrix: Soil/Solid

						Prepa	ıration	F	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
t 1 Percent Moisture (Water Content)	Ω		0/_	1	1.0	12/10/10	MC101210	12/20/10	MC101210	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-007

Description: WMU27-SB4-0-3"

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A	
Parameter(s)	

Parameter(s)			Reporting Limit	Dilution	Preparation		Analysis	
	Result	Q Units			P. Date	P. Batch	A. Date	A. Batch Ini
1. Aroclor-1016	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
2. Aroclor-1221	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
3. Aroclor-1232	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
4. Aroclor-1242	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
5. Aroclor-1248	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
6. Aroclor-1254	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
7. Aroclor-1260	210	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
‡ 9. Aroclor-1268	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD



Order: 94220 Page: 9 of 44 Date: 01/03/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB4-11-12'

Reporting Limit

Chain of Custody:

181437

5-10860 Client Project Name:

Collect Date:

12/16/19

Client Project No:

5-10860 Sample Matrix:

Result

14

Q

Soil/Solid Collect Time: 10:41

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Sample No:

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94220-008 Matrix: Soil/Solid

Method: ASTM D2216-10

Description: WMU27-SB4-11-12'

Preparation Analysis Dilution P. Date P. Batch A. Date A. Batch Init.

MC191219

1. Percent Moisture (Water Content)

Aliquot ID:

94220-008

12/20/19

MC191219 DB

Polychlorinated Biphenyls (PCBs)

1.0

12/19/19

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-SB4-11-12'

	read production and the second									
						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init	
1. Aroclor-1016	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RD	
2. Aroclor-1221	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RD	
3. Aroclor-1232	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RD	
4. Aroclor-1242	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RD	
5. Aroclor-1248	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RD	
6. Aroclor-1254	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RD	
7. Aroclor-1260	540	J+	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RD	
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RD	
‡ 9. Aroclor-1268	1600	J+	ua/ka	390	25	12/19/19	PS19L19F	01/02/20	SF20A02B RD	

DCSID: G-610.19 (10/01/19)



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB5-0-3" Chain of Custody:

181437

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

10:47

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

Definitions:

Parameter(s)

Result

Q

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID: Description: WMU27-SB5-0-3"

94220-009

Matrix: Soil/Solid

		Prepa	ration	Analysis			
Reporting Limit	Dilution	P. Date	P. Batch	A. Date	 A. Batch 	Init.	

1. Percent Moisture (Water Content) 7 MC191219 DB % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-009

Method: EPA 3546/EPA 8082A

Matrix: Soil/Solid

Description: WMU27-SB5-0-3"

				•				
					Preparation		Analysis	
Parameter(s)	Result C	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDM
2. Aroclor-1221	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDF
3. Aroclor-1232	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDk
4. Aroclor-1242	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDF
5. Aroclor-1248	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDF
6. Aroclor-1254	180 J	+ μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDF
7. Aroclor-1260	160 J	+ μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDF
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDF
‡ 9. Aroclor-1268	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDM

RSN: 94220-200103101317



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Client Identification: Applied Science & Technology,

Inc. - Brighton

WMU27-SB5-9-10' Sample Description:

Chain of Custody:

181437

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 10:57

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-010 Aliquot ID:

Matrix: Soil/Solid

Description: WMU27-SB5-9-10'

Analysis

						Prepa	ration	А	ınalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Percent Moisture (Water Content)	7		%	1	1.0	12/19/19	MC191219	12/20/19	MC191219	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-010

Method: EPA 3546/EPA 8082A

Description: WMU27-SB5-9-10'

Matrix: Soil/Solid

					Prepa	ıration	Α	ınalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A	RDK
2. Aroclor-1221	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A	RDK
3. Aroclor-1232	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A	RD
4. Aroclor-1242	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A	RDŁ
5. Aroclor-1248	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A	RD
6. Aroclor-1254	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A	RDF
7. Aroclor-1260	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A	RDF
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A	RDF
‡ 9. Aroclor-1268	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A	RDF



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB6-0-3" Chain of Custody:

181438

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 12:20

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Result

3

Q

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

12/20/19

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID:

1.0

94220-011

Description: WMU27-SB6-0-3"

Matrix: Soil/Solid

		Prepa	ration	А	nalysis	
Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.

MC191219

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

94220-011

MC191219 DB

Method: EPA 3546/EPA 8082A

Matrix: Soil/Solid

Description: WMU27-SB6-0-3"

12/19/19

Method: EPA 3546/EPA 6062A	Description: www.27-586-0-3											
					Prepa	ration	А	nalysis				
Parameter(s)	Result C) Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.				
1. Aroclor-1016	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDK				
2. Aroclor-1221	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDK				
3. Aroclor-1232	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDK				
4. Aroclor-1242	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDK				
5. Aroclor-1248	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDK				
6. Aroclor-1254	180 J-	+ μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDK				
7. Aroclor-1260	150 J-	+ μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDK				
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDK				
‡ 9. Aroclor-1268	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A RDK				



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB6-8.5-9.5' Chain of Custody:

181438

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Soil/Solid

Collect Time:

12:26

Sample Comments:

Sample Matrix: Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-012 Aliquot ID:

Matrix: Soil/Solid

Description: WMU27-SB6-8.5-9.5'

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB 4 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-012

SF19L28B RDK

9. Aroclor-1268

PS19L19F

12/28/19

Method: EPA 3546/EPA 8082A

Description: WMU27-SB6-8.5-9.5'

12/19/19

Matrix: Soil/Solid

Method. EPA 3546/EPA 6062A	Description: www.27-350-6.3-3.3										
						Prepa	ration	А	nalysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U		μg/kg	1400	100	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
2. Aroclor-1221	U		μg/kg	1400	100	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
3. Aroclor-1232	U		μg/kg	1400	100	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
4. Aroclor-1242	U		μg/kg	1400	100	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
5. Aroclor-1248	U		μg/kg	1400	100	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
6. Aroclor-1254	U		μg/kg	1400	100	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
7. Aroclor-1260	13000		μg/kg	1400	100	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
‡ 8. Aroclor-1262	U		μg/kg	1400	100	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	

1400

μg/kg



Order: Page: Date:

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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB7-0-3" Chain of Custody:

181438

5-10860 Client Project Name:

Sample No:

Result

8

Q

Collect Date:

12/16/19

5-10860

Sample Matrix:

Soil/Solid Collect Time: 12:02

Sample Comments:

Client Project No:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

12/19/19

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-013 Aliquot ID: Description: WMU27-SB7-0-3"

Dilution

1.0

Matrix: Soil/Solid

Preparation P. Date P. Batch

MC191219

Analysis A. Date A. Batch Init. MC191219 DB 12/20/19

Polychlorinated Biphenyls (PCBs) Method: FPA 3546/FPA 8082A

1. Percent Moisture (Water Content)

Aliquot ID:

94220-013

Matrix: Soil/Solid

Description: WMU27-SB7-0-3"

Method: EPA 3546/EPA 8082A		Description: WMU27-SB7-0-3"											
						Prepa	ration	А	nalysis				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.			
1. Aroclor-1016	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A F	RDK			
2. Aroclor-1221	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A F	RDK			
3. Aroclor-1232	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A F	RDK			
4. Aroclor-1242	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A F	RDK			
5. Aroclor-1248	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A F	RDK			
6. Aroclor-1254	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A F	RDK			
7. Aroclor-1260	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A F	RDK			
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A F	RDK			
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A F	RDK			

Reporting Limit



Order: Page: Date:

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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU27-SB7-10.5-11.5" Sample Description:

Chain of Custody:

181438

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 12:13

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

1. Percent Moisture (Water Content)

Method: ASTM D2216-10

Aliquot ID: 94220-014 Matrix: Soil/Solid

Description: WMU27-SB7-10.5-11.5'

Parameter(s)

Parameter(s)

1. Aroclor-1016

2. Aroclor-1221

3. Aroclor-1232

4. Aroclor-1242

5. Aroclor-1248

6. Aroclor-1254

7. Aroclor-1260

8. Aroclor-1262

9. Aroclor-1268

Result Q Units

%

μg/kg

15

U

Reporting Limit Dilution

P. Date 12/19/19

12/19/19

P. Batch MC191219

PS19L19F

Analysis A. Date A. Batch 12/20/19

Init. MC191219 DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

1.0

94220-014

Matrix: Soil/Solid

12/20/19

SF19L20A RDK

Preparation

Method: EPA 3546/EPA 8082A

Description: WMU27-SB7-10.5-11.5'

Preparation Analysis Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch P. Date U 100 PS19L19F RDK μg/kg 5.0 12/19/19 12/20/19 SF19L20A U 100 5.0 12/19/19 PS19L19F 12/20/19 SF19L20A RDK μg/kg U μg/kg 100 5.0 12/19/19 PS19L19F 12/20/19 SF19L20A RDK U 100 5.0 12/19/19 PS19L19F 12/20/19 SF19L20A RDK μg/kg U 100 5.0 12/19/19 PS19L19F 12/20/19 SF19L20A RDK μg/kg U 5.0 12/20/19 SF19L20A RDK 100 12/19/19 PS19L19F μg/kg U 100 5.0 12/19/19 PS19L19F 12/20/19 SF19L20A RDK μg/kg U μg/kg 100 5.0 12/19/19 PS19L19F 12/20/19 SF19L20A RDK

5.0

100



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB8-0-3" Chain of Custody:

181438

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

MC191219 DB

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 11:46

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Result

9

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

12/19/19

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

1. Percent Moisture (Water Content)

94220-015 Aliquot ID:

1.0

Matrix: Soil/Solid

Description: WMU27-SB8-0-3"

Preparation Analysis Dilution P. Date P. Batch A. Date A. Batch Init.

MC191219

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-015

Matrix: Soil/Solid

12/20/19

Method: EPA 3546/EPA 8082A Description: WMU27-SB8-0-3"

Q

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A	RDK
2. Aroclor-1221	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A	RDK
3. Aroclor-1232	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A	RDF
4. Aroclor-1242	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A	RDF
5. Aroclor-1248	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A	RDŁ
6. Aroclor-1254	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A	RDF
7. Aroclor-1260	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A	RDK
\$. Aroclor-1262	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A	RDF
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/19/19	PS19L19F	12/30/19	SF19L30A	RDF

Reporting Limit

DCSID: G-610.19 (10/01/19)



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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description:

WMU27-SB8-10-11'

Chain of Custody:

181438

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Collect Time:

11:56

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID: Description: WMU27-SB8-10-11'

94220-016 Matrix: Soil/Solid

						Prepa	ration	A	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
† 1 Percent Moisture (Water Content)	٥		%	1	1.0	12/19/19	MC191219	12/20/19	MC191219	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-016

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Soil/Solid

Description: WMU27-SB8-10-11'

				•						
					Prepa	ration	А	nalysis		
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDk	
2. Aroclor-1221	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
3. Aroclor-1232	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
4. Aroclor-1242	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
5. Aroclor-1248	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
6. Aroclor-1254	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
7. Aroclor-1260	370	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
\$ 8. Aroclor-1262	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B	RDK	
± 9 Aroclor-1268	11	ua/ka	100	5.0	12/19/19	PS19I 19F	12/28/19	SF19L28B	BDk	



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181438

Chain of Custody:

Client Identification: Applied Science & Technology, Sample Description: WMU27-SB9-0-3"

Inc. - Brighton

Client Project Name: 5-10860 Sample No: Collect Date: 12/16/19

Client Project No: 5-10860 Sample Matrix: Soil/Solid Collect Time: 11:26

Sample Comments: Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: 94220-017 Matrix: Soil/Solid

Method: ASTM D2216-10 Description: WMU27-SB9-0-3"

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB 8 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94220-017 Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A Description: WMU27-SB9-0-3"

				•				
					Prepa	ration	Д	nalysis
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Ini
1. Aroclor-1016	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
2. Aroclor-1221	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
3. Aroclor-1232	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
4. Aroclor-1242	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
5. Aroclor-1248	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
6. Aroclor-1254	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
7. Aroclor-1260	220	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
8. Aroclor-1262	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD
\$ 9. Aroclor-1268	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/28/19	SF19L28B RD

DCSID: G-610.19 (10/01/19)



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU27-SB9-7-8' Sample Description:

Chain of Custody:

181438

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 11:39

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

%

Units

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94220-018

Matrix: Soil/Solid

Method: ASTM D2216-10

100

5.0

Description: WMU27-SB9-7-8'

Analysis

Parameter(s) 1. Percent Moisture (Water Content)

Parameter(s)

1. Aroclor-1016

2. Aroclor-1221

3. Aroclor-1232

4. Aroclor-1242

5. Aroclor-1248

6. Aroclor-1254

7. Aroclor-1260

8. Aroclor-1262

9. Aroclor-1268

Result Q Units

Q

7

Result

U

U

U

U

U

U

U

U

U

Reporting Limit Dilution

1.0

P. Date P. Batch 12/19/19 MC191219

Preparation

A. Date 12/20/19

12/26/19

A. Batch Init. MC191219 DB

SF19L26A RDK

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-018

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-SB9-7-8'

Preparation Analysis Reporting Limit Dilution P. Batch A. Date A. Batch P. Date 100 PS19L19F RDK 5.0 12/19/19 12/26/19 SF19L26A 100 5.0 12/19/19 PS19L19F 12/26/19 SF19L26A RDK 5.0 12/26/19 SF19L26A RDK 100 12/19/19 PS19L19F 100 5.0 12/19/19 PS19L19F 12/26/19 SF19L26A RDK 100 5.0 12/19/19 PS19L19F 12/26/19 SF19L26A RDK

PS19L19F

12/19/19



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB10-0-3"

Reporting Limit

Soil/Solid

Chain of Custody:

181438

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Collect Time:

11:04

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Result

8

Q

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

P. Date

12/19/19

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-019 Aliquot ID:

Dilution

1.0

Matrix: Soil/Solid

Preparation

Description: WMU27-SB10-0-3"

Analysis A. Date A. Batch Init.

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

94220-019

P. Batch

MC191219

12/20/19

MC191219 DB

Method: EPA 3546/EPA 8082A

Description: WMU27-SB10-0-3"

Matrix: Soil/Solid

				•				
					Prepa	ration	А	nalysis
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A RDF
2. Aroclor-1221	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A RD
3. Aroclor-1232	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A RDI
4. Aroclor-1242	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A RD
5. Aroclor-1248	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A RDI
6. Aroclor-1254	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A RD
7. Aroclor-1260	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A RDI
8. Aroclor-1262	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A RDF
9. Aroclor-1268	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	SF19L20A RD
9. Aroclor-1268	U	μg/kg	100	5.0	12/19/19	PS19L19F	12/20/19	S



94220 Order: Page: 21 of 44 Date: 01/03/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU27-SB10-7-8' Sample Description:

Chain of Custody:

181438

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix: Soil/Solid Collect Time:

11:15

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Units

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

Definitions:

Parameter(s)

Parameter(s)

1. Aroclor-1016

2. Aroclor-1221

3. Aroclor-1232

4. Aroclor-1242

5. Aroclor-1248

6. Aroclor-1254

7. Aroclor-1260

8. Aroclor-1262

9. Aroclor-1268

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Result

Result

U

U

U

U

U

U

U

U

U

6

Q

Q

12/19/19

12/19/19

Matrix: Soil/Solid

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID: 94220-020 Description: WMU27-SB10-7-8'

		Prepa	ration	Analysis				
Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.		

MC191219

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

Reporting Limit

100

100

100

100

100

100

100

100

100

5.0

94220-020

12/20/19

12/20/19

MC191219 DB

SF19L20A RDK

1.0

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-SB10-7-8'

Preparation Analysis Dilution P. Batch A. Date A. Batch P. Date 5.0 PS19L19F SF19L20A RDK 12/19/19 12/20/19 5.0 12/19/19 PS19L19F 12/20/19 SF19L20A RDK 5.0 12/20/19 SF19L20A RDK 12/19/19 PS19L19F 5.0 12/19/19 PS19L19F 12/20/19 SF19L20A RDK 5.0 12/19/19 PS19L19F 12/20/19 SF19L20A RDK

PS19L19F



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB11-0-3" Chain of Custody:

181439

5-10860 Client Project Name:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix: Soil/Solid Collect Time:

12:31

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

μg/kg

Sample No:

Definitions:

Parameter(s)

Result

4

Q

Reporting Limit

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-021 Aliquot ID:

Dilution

1.0

Description: WMU27-SB11-0-3"

P. Date

12/19/19

12/19/19

Preparation

Matrix: Soil/Solid

Analysis A. Date A. Batch Init.

1. Percent Moisture (Water Content)

Aliquot ID:

94220-021

P. Batch

MC191219

PS19L19G

MC191219 DB

Polychlorinated Biphenyls (PCBs)

Matrix: Soil/Solid

12/20/19

12/21/19

WMI107 CD11 0 2"

SF19L20A RDK

Marker J. EDA OF4C/EDA OCCOA

9. Aroclor-1268

Method: EPA 3546/EPA 8082A		Description: WMU27-SB11-0-3"										
					Preparation		Analysis					
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init				
1. Aroclor-1016	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A RDI				
2. Aroclor-1221	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A RDI				
3. Aroclor-1232	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A RDI				
4. Aroclor-1242	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A RDI				
5. Aroclor-1248	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A RDI				
6. Aroclor-1254	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A RDI				
7. Aroclor-1260	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A RDI				
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A RDI				



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU27-SB11-11-12' Sample Description:

Chain of Custody:

181439

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860 Sample Matrix:

Soil/Solid Collect Time: 12:43

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

1. Percent Moisture (Water Content)

Aliquot ID: 94220-022 Description: WMU27-SB11-11-12'

Matrix: Soil/Solid

Method: ASTM D2216-10

100

100

5.0

5.0

Preparation

Analysis A. Date A. Batch

Parameter(s)

Parameter(s)

1. Aroclor-1016

2. Aroclor-1221

3. Aroclor-1232

4. Aroclor-1242

5. Aroclor-1248

6. Aroclor-1254

7. Aroclor-1260

8. Aroclor-1262

9. Aroclor-1268

Result Q Units

%

Units

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

13

Result

U

U

U

U

U

U

U

U

110

Q

Reporting Limit Dilution 1.0

P. Date 12/19/19

12/19/19

12/19/19

MC191219

P. Batch

MC191219 DB

SF19L28B RDK

SF19L28B RDK

Init.

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-022

Matrix: Soil/Solid

PS19L19G

PS19L19G

12/28/19

12/28/19

12/20/19

Method: EPA 3546/EPA 8082A

Description: WMU27-SB11-11-12'

Preparation Analysis Reporting Limit Dilution P. Batch A. Date A. Batch P. Date 100 PS19L19G SF19L28B RDK 5.0 12/19/19 12/28/19 100 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK 5.0 12/28/19 SF19L28B RDK 100 12/19/19 PS19L19G 100 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU27-SB12-0-3" Sample Description:

Chain of Custody:

181439

Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860 5-10860

Sample Matrix:

Soil/Solid Collect Time: 12:52

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report)

U

μg/kg

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID:

94220-023

Matrix: Soil/Solid

Description: WMU27-SB12-0-3"

Analysis atch Init.

Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Percent Moisture (Water Content)	9	%	1	1.0	12/19/19	MC191219	12/20/19	MC191219	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-023

12/19/19

PS19L19G

12/28/19

SF19L28B RDK

Method: EPA 3546/EPA 8082A

9. Aroclor-1268

Description: WMU27-SB12-0-3"

Matrix: Soil/Solid

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch U 1. Aroclor-1016 100 PS19L19G SF19L28B RDK μg/kg 5.0 12/19/19 12/28/19 2. Aroclor-1221 U 100 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK μg/kg 3. Aroclor-1232 U μg/kg 100 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK 4. Aroclor-1242 U 100 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK μg/kg U 5. Aroclor-1248 100 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK μg/kg U 5.0 PS19L19G 12/28/19 SF19L28B RDK 6. Aroclor-1254 100 12/19/19 μg/kg 7. Aroclor-1260 240 100 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK μg/kg U 8. Aroclor-1262 μg/kg 100 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK

100

5.0



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB12-11-12' Chain of Custody:

181439

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860 Sample Matrix: Soil/Solid

13

Collect Time:

13:03

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

%

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

1.0

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID:

94220-024 Description: WMU27-SB12-11-12'

Matrix: Soil/Solid

12/20/19

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-024

12/19/19

Matrix: Soil/Solid

MC191219

Method: EPA 3546/EPA 8082A

Description: WMU27-SB12-11-12'

					Prepa	Preparation		Analysis	
Parameter(s)	Result	Q Unit	s Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U	μg/k	g 100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B	RDŁ
2. Aroclor-1221	U	μg/k	g 100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B	RDŁ
3. Aroclor-1232	U	μg/k	g 100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B	RDł
4. Aroclor-1242	U	μg/k	g 100	5.0	12/19/19	PS19L19G	12/27/19	SC19L27C	RDł
5. Aroclor-1248	U	μg/k	g 100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B	RD
6. Aroclor-1254	U	μg/k	g 100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B	RDŁ
7. Aroclor-1260	U	μg/k	g 100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B	RDŁ
\$. Aroclor-1262	U	μg/k	g 100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B	RDŁ
‡ 9. Aroclor-1268	U	μg/k	g 100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B	RD



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU27-SB13-0-3" Sample Description:

Chain of Custody:

181439

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

13:11

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Parameter(s)

1. Aroclor-1016

2. Aroclor-1221

3. Aroclor-1232

4. Aroclor-1242

5. Aroclor-1248

6. Aroclor-1254

7. Aroclor-1260

8. Aroclor-1262

9. Aroclor-1268

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

12/19/19

12/19/19

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID: 94220-025 Matrix: Soil/Solid

Description: WMU27-SB13-0-3"

Parameter(s) Result Q Units Reporting Limit

10

Result

U

U

U

U

U

U

U

U

270

Q

Dilution 1.0

Preparation P. Date P. Batch

Analysis A. Date A. Batch

12/20/19

12/28/19

Init. MC191219 DB

SF19L28B RDK

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

Reporting Limit

100

100

100

100

100

100

100

100

100

5.0

94220-025

Matrix: Soil/Solid

MC191219

Method: EPA 3546/EPA 8082A

%

Units

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

μg/kg

Description: WMU27-SB13-0-3"

Preparation Analysis Dilution P. Batch A. Date A. Batch P. Date PS19L19G SF19L28B RDK 5.0 12/19/19 12/28/19 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK 5.0 12/28/19 SF19L28B RDK 12/19/19 PS19L19G 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK 5.0 12/19/19 PS19L19G 12/28/19 SF19L28B RDK

PS19L19G



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU27-SB13-11-12' Sample Description:

Chain of Custody:

181439

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

13:19

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

%

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

1. Percent Moisture (Water Content)

Aliquot ID: 94220-026 Description: WMU27-SB13-11-12'

Matrix: Soil/Solid

Method: ASTM D2216-10

Parameter(s) Result Q Units

9

Reporting Limit Dilution

P. Date 12/19/19

P. Batch MC191219

Preparation

Analysis A. Date A. Batch 12/20/19

Init. MC191219 DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

1.0

94220-026

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-SB13-11-12'

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch P. Date U 1. Aroclor-1016 100 PS19L19G RDK μg/kg 5.0 12/19/19 12/26/19 SF19L26A 2. Aroclor-1221 U 100 5.0 12/19/19 PS19L19G 12/26/19 SF19L26A RDK μg/kg 3. Aroclor-1232 U μg/kg 100 5.0 12/19/19 PS19L19G 12/26/19 SF19L26A RDK 4. Aroclor-1242 U 100 5.0 12/19/19 PS19L19G 12/26/19 SF19L26A RDK μg/kg U 5. Aroclor-1248 100 5.0 12/19/19 PS19L19G 12/26/19 SF19L26A RDK μg/kg U 5.0 12/26/19 SF19L26A RDK 6. Aroclor-1254 100 12/19/19 PS19L19G μg/kg 7. Aroclor-1260 U 100 5.0 12/19/19 PS19L19G 12/26/19 SF19L26A RDK μg/kg U 8. Aroclor-1262 μg/kg 100 5.0 12/19/19 PS19L19G 12/26/19 SF19L26A RDK 9. Aroclor-1268 U μg/kg 100 5.0 12/19/19 PS19L19G 12/26/19 SF19L26A RDK



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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU27-SB14-0-3" Chain of Custody:

181439

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

Method: ASTM D2216-10

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

13:26

Sample Comments:

Definitions:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94220-027

Matrix: Soil/Solid

Description: WMU27-SB14-0-3"

						Prepa	ration	A	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
† 1 Percent Moisture (Water Content)	6		%	1	1.0	12/19/19	MC191219	12/20/19	MC191219	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-027

Method: EPA 3546/EPA 8082A

Description: WMU27-SB14-0-3"

Matrix: Soil/Solid

					Prepa	ration	Analysis		
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A	RDK
2. Aroclor-1221	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A	RDK
3. Aroclor-1232	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A	RDK
4. Aroclor-1242	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A	RDK
5. Aroclor-1248	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A	RDK
6. Aroclor-1254	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A	RDK
7. Aroclor-1260	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A	RDK
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A	RDK
‡ 9. Aroclor-1268	U	μg/kg	100	5.0	12/19/19	PS19L19G	12/21/19	SF19L20A	RDK



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Client Identification: Applied Science & Technology,

Inc. - Brighton

WMU27-SB14-11-11.75" Sample Description:

Chain of Custody:

181439

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

13:34

Sample Comments:

Definitions:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID:

94220-028 Description: WMU27-SB14-11-11.75"

Matrix: Soil/Solid

						Prepa	ration	P	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Percent Moisture (Water Content)	12		%	1	1.0	12/19/19	MC191219	12/20/19	MC191219	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-028

PS19L19G

12/28/19

Description: WMU27-SB14-11-11.75"

12/19/19

Matrix: Soil/Solid

SF19L28B RDK

Method: EPA 3546/EPA 8082A
Parameter(s)

‡ 9. Aroclor-1268

WIELIOG. EFA 3340/EFA 0002A		Description. Winder-Spi4-11-11.75										
						Preparation		A	nalysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.			
1. Aroclor-1016	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B RDK			
2. Aroclor-1221	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B RDK			
3. Aroclor-1232	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B RDK			
4. Aroclor-1242	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B RDK			
5. Aroclor-1248	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B RDK			
6. Aroclor-1254	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B RDK			
7. Aroclor-1260	110		μg/kg	100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B RDK			
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/28/19	SF19L28B RDK			

100

μg/kg



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU27-SB15-0-3" Sample Description:

Chain of Custody:

181439

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

13:40

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID: 94220-029

Dilution

P. Date

12/19/19

Matrix: Soil/Solid

Method: ASTM D2216-10 Description: WMU27-SB15-0-3"

Result

8

Reporting Limit

Preparation

Analysis A. Date A. Batch Init.

1. Percent Moisture (Water Content)

Q Units %

1.0

MC191219

P. Batch

12/20/19

MC191219

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-029

DB

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-SB15-0-3"

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch P. Date U 1. Aroclor-1016 100 PS19L19G RDK μg/kg 5.0 12/19/19 12/21/19 SF19L20A 2. Aroclor-1221 U 100 5.0 12/19/19 PS19L19G 12/21/19 SF19L20A RDK μg/kg 3. Aroclor-1232 U μg/kg 100 5.0 12/19/19 PS19L19G 12/21/19 SF19L20A RDK 4. Aroclor-1242 U 100 5.0 12/19/19 PS19L19G 12/21/19 SF19L20A RDK μg/kg U 5. Aroclor-1248 100 5.0 12/19/19 PS19L19G 12/21/19 SF19L20A RDK μg/kg U 5.0 SF19L20A RDK 6. Aroclor-1254 100 12/19/19 PS19L19G 12/21/19 μg/kg 7. Aroclor-1260 U 100 5.0 12/19/19 PS19L19G 12/21/19 SF19L20A RDK μg/kg U 8. Aroclor-1262 μg/kg 100 5.0 12/19/19 PS19L19G 12/21/19 SF19L20A RDK 9. Aroclor-1268 U μg/kg 100 5.0 12/19/19 PS19L19G 12/21/19 SF19L20A RDK



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181439

Client Identification: Applied Science & Technology, Sample Description: WMU27-SB15-11-12' Chain of Custody:

Inc. - Brighton

Client Project Name: 5-10860 Sample No: Collect Date: 12/16/19

Client Project No: 5-10860 Sample Matrix: Soil/Solid Collect Time: 13:47

Sample Comments: Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: 94220-030 Matrix: Soil/Solid

Method: ASTM D2216-10 Description: WMU27-SB15-11-12

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB 22 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94220-030 Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A Description: WMU27-SB15-11-12'

						Prepa	ration	А	nalysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U		μg/kg	1700	100	12/19/19	PS19L19G	12/28/19	SF19L28B	RDK	
2. Aroclor-1221	U		μg/kg	1700	100	12/19/19	PS19L19G	12/28/19	SF19L28B	RDK	
3. Aroclor-1232	U		μg/kg	1700	100	12/19/19	PS19L19G	12/28/19	SF19L28B	RDK	
4. Aroclor-1242	U		μg/kg	1700	100	12/19/19	PS19L19G	12/28/19	SF19L28B	RDK	
5. Aroclor-1248	U		μg/kg	1700	100	12/19/19	PS19L19G	12/28/19	SF19L28B	RDK	
6. Aroclor-1254	U		μg/kg	1700	100	12/19/19	PS19L19G	12/28/19	SF19L28B	RDK	
7. Aroclor-1260	3600		μg/kg	1700	100	12/19/19	PS19L19G	12/28/19	SF19L28B	RDK	
\$ 8. Aroclor-1262	U		μg/kg	1700	100	12/19/19	PS19L19G	12/28/19	SF19L28B	RDK	
‡ 9. Aroclor-1268	U		μg/kg	1700	100	12/19/19	PS19L19G	12/28/19	SF19L28B	RDK	

DCSID: G-610.19 (10/01/19)



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB16-0-3" Chain of Custody:

181440

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time: 14:34

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-031 Aliquot ID: Description: WMU27-SB16-0-3" Matrix: Soil/Solid

Preparation Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch 1. Percent Moisture (Water Content) 5 % 1.0 12/19/19 MC191219

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-031

A. Date

12/20/19

MC191219 DB

A. Batch Init.

Analysis

Method: EPA 3546/EPA 8082A

Description: WMU27-SB16-0-3"

Matrix: Soil/Solid

					•						
						Prepa	ration	А	nalysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/26/19	SF19L26A	RDK	
2. Aroclor-1221	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/26/19	SF19L26A	RDK	
3. Aroclor-1232	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/26/19	SF19L26A	RDF	
4. Aroclor-1242	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/26/19	SF19L26A	RDF	
5. Aroclor-1248	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/26/19	SF19L26A	RDŁ	
6. Aroclor-1254	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/26/19	SF19L26A	RDŁ	
7. Aroclor-1260	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/26/19	SF19L26A	RDF	
8. Aroclor-1262	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/26/19	SF19L26A	RDF	
9. Aroclor-1268	U		μg/kg	100	5.0	12/19/19	PS19L19G	12/26/19	SF19L26A	RDK	



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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU27-SB16-7-8' Chain of Custody:

181440

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 14:37

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

μg/kg

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID:

94220-032

Matrix: Soil/Solid

Description:	WMU27-SB16-7-8'
	Duna anatia a

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Percent Moisture (Water Content)	9		%	1	1.0	12/19/19	MC191219	12/20/19	MC191219	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-032

SF19L20A RDK

12/20/19

PS19L20B

12/21/19

Matrix: Soil/Solid

Description: WMU27-SB16-7-8'

Method:	EPA	3546/	EPA	8082A	

‡ 9. Aroclor-1268

Mictiloa. El A 0040/El A 000EA		Beschiption: Willow Block									
					Prepa	ration	A	nalysis			
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.			
1. Aroclor-1016	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK			
2. Aroclor-1221	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK			
3. Aroclor-1232	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK			
4. Aroclor-1242	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK			
5. Aroclor-1248	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK			
6. Aroclor-1254	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK			
7. Aroclor-1260	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK			
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK			

100



Order: 94220 Page: 34 of 44 Date: 01/03/20

Client Identification: Applied Science & Technology, Sample Description: WMU27-SB17-0-3" Chain of Custody: 181440

Inc. - Brighton

Client Project Name: 5-10860 Sample No: Collect Date: 12/16/19

Client Project No: 5-10860 Sample Matrix: Soil/Solid Collect Time: 14:26

Sample Comments: Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: 94220-033 Matrix: Soil/Solid

Method: ASTM D2216-10 Description: WMU27-SB17-0-3"

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB 8 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94220-033 Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A Description: WMU27-SB17-0-3"

					Prepa	ration	А	nalysis
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDM
2. Aroclor-1221	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK
3. Aroclor-1232	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDk
4. Aroclor-1242	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK
5. Aroclor-1248	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDF
6. Aroclor-1254	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK
7. Aroclor-1260	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDF
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK
‡ 9. Aroclor-1268	U	μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RDK

DCSID: G-610.19 (10/01/19)



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Client Identification: Applied Science & Technology,

Inc. - Brighton

WMU27-SB17-6-7' Sample Description:

Chain of Custody:

181440

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix: Soil/Solid Collect Time:

14:31

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Parameter(s)

Result

8

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

12/19/19

Water (Moisture) Content Dried at 105 ± 5°C

1. Percent Moisture (Water Content)

Polychlorinated Biphenyls (PCBs)

Method: ASTM D2216-10

Aliquot ID:

Dilution

1.0

94220-034

Description: WMU27-SB17-6-7'

Matrix: Soil/Solid

Prepar	ation	Ar	nalysis	
P. Date	P. Batch	A. Date	A. Batch	Init.

12/20/19

%

Units

Aliquot ID:

94220-034

MC191219

Matrix: Soil/Solid

MC191219 DB

Method: EPA 3546/EPA 8082A Description: WMU27-SB17-6-7'

Q

						Preparation		Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDF	
2. Aroclor-1221	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDŁ	
3. Aroclor-1232	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDł	
4. Aroclor-1242	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDI	
5. Aroclor-1248	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDI	
6. Aroclor-1254	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDI	
7. Aroclor-1260	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RD	
\$ 8. Aroclor-1262	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDI	
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDF	

Reporting Limit



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU27-SB18-0-3" Sample Description:

Chain of Custody:

181440

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 14:16

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Method: ASTM D2216-10

Aliquot ID: 94220-035 Matrix: Soil/Solid

Description: WMU27-SB18-0-3"

Preparation Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date 1. Percent Moisture (Water Content) 10 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-035

MC191219 DB

Init.

A. Batch

Matrix: Soil/Solid

Analysis

Method: EPA 3546/EPA 8082A Description: WMU27-SB18-0-3" Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch P. Date U 1. Aroclor-1016 100 PS19L20B RDK μg/kg 5.0 12/20/19 12/21/19 SF19L20A 2. Aroclor-1221 U 100 5.0 12/20/19 PS19L20B 12/21/19 SF19L20A RDK μg/kg 3. Aroclor-1232 U μg/kg 100 5.0 12/20/19 PS19L20B 12/21/19 SF19L20A RDK 4. Aroclor-1242 U 100 5.0 12/20/19 PS19L20B 12/21/19 SF19L20A RDK μg/kg U 5. Aroclor-1248 100 5.0 12/20/19 PS19L20B 12/21/19 SF19L20A RDK μg/kg U 5.0 PS19L20B SF19L20A RDK 6. Aroclor-1254 100 12/20/19 12/21/19 μg/kg 7. Aroclor-1260 140 100 5.0 12/20/19 PS19L20B 12/21/19 SF19L20A RDK μg/kg U 8. Aroclor-1262 μg/kg 100 5.0 12/20/19 PS19L20B 12/21/19 SF19L20A RDK 9. Aroclor-1268 U μg/kg 100 5.0 12/20/19 PS19L20B 12/21/19 SF19L20A RDK



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Applied Science & Technology, Client Identification:

5-10860

Inc. - Brighton

Sample Description: WMU27-SB18-9-10'

Soil/Solid

Chain of Custody:

181440

5-10860 Client Project Name:

Sample No:

Collect Date:

12/16/19

Client Project No:

Collect Time:

14:22

Sample Comments:

Sample Matrix: Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-036 Aliquot ID:

Matrix: Soil/Solid

Description: WMU27-SB18-9-10'

Analysis

Preparation Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB 9 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-036

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-SB18-9-10'

					•						
						Prepa	ration	A	nalysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U		μg/kg	370	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
2. Aroclor-1221	U		μg/kg	370	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDŁ	
3. Aroclor-1232	U		μg/kg	370	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDŁ	
4. Aroclor-1242	U		μg/kg	370	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RD	
5. Aroclor-1248	U		μg/kg	370	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RD	
6. Aroclor-1254	U		μg/kg	370	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDŁ	
7. Aroclor-1260	1400		μg/kg	370	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDF	
8. Aroclor-1262	U		μg/kg	370	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDŁ	
9. Aroclor-1268	U		μg/kg	370	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDF	



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB19-0-3" Chain of Custody:

181440

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

14:08

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

%

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

1. Percent Moisture (Water Content)

Aliquot ID:

94220-037

Matrix: Soil/Solid

Description: WMU27-SB19-0-3"

Parameter(s)

Result Q Units

9

Reporting Limit

Dilution 1.0

Preparation P. Date P. Batch 12/19/19 MC191219

A. Date 12/20/19

Analysis A. Batch Init. MC191219 DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-037

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A	Description: WMU27-SB19-0-3"										
						Prepa	ration	Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
2. Aroclor-1221	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
3. Aroclor-1232	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
4. Aroclor-1242	120		μg/kg	100	5.0	12/20/19	PS19L20B	12/27/19	SC19L27C	RDK	
5. Aroclor-1248	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
6. Aroclor-1254	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
7. Aroclor-1260	200		μg/kg	100	5.0	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	



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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU27-SB19-6-7' Chain of Custody:

181440

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 14:12

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

Definitions:

Parameter(s)

Result

Q

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID: Description: WMU27-SB19-6-7'

94220-038

Matrix: Soil/Solid

		Prepa	ration	A	nalysis	
Reporting Limit	Dilution	P. Date	P. Batch	A. Date	 A. Batch 	Init.

1. Percent Moisture (Water Content) 13 % 1.0 12/19/19 MC191219 12/20/19 MC191219 DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-038

Method: EPA 3546/EPA 8082A

Matrix: Soil/Solid

Description: WMU27-SB19-6-7'

						Prepa	ration	Α	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch In
1. Aroclor-1016	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RE
2. Aroclor-1221	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RE
3. Aroclor-1232	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RE
4. Aroclor-1242	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RE
5. Aroclor-1248	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RE
6. Aroclor-1254	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RE
7. Aroclor-1260	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RE
8. Aroclor-1262	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RE
9. Aroclor-1268	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A RE



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB20-0-3" Chain of Custody:

181440

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time: 13:53

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-039 Aliquot ID:

Matrix: Soil/Solid

Description: WMU27-SB20-0-3"

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB 7 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-039

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-SB20-0-3"

WELLIOU. EFA 3340/EFA 0002A		Description: WWI027-3B20-0-3									
						Prepa	ration	A	nalysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK	
2. Aroclor-1221	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK	
3. Aroclor-1232	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK	
4. Aroclor-1242	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK	
5. Aroclor-1248	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK	
6. Aroclor-1254	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK	
7. Aroclor-1260	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK	
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK	
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK	



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-SB20-9-10' Chain of Custody:

181440

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Collect Time:

14:00

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Result

25

Q

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

P. Date

12/19/19

Water (Moisture) Content Dried at 105 ± 5°C

1. Percent Moisture (Water Content)

Method: ASTM D2216-10

Aliquot ID:

Dilution

1.0

94220-040 Matrix: Soil/Solid

P. Batch

MC191219

Preparation

Description: WMU27-SB20-9-10'

Analysis A. Date A. Batch Init. 12/20/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

Soil/Solid

94220-040

Matrix: Soil/Solid

MC191219 DB

Marker J. EDA OF4C/EDA OCCOA

WMI 127 CB20 0 10

Method: EPA 3546/EPA 8082A		Description: WMU27-SB20-9-10										
						Prepa	Preparation		nalysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.			
1. Aroclor-1016	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/27/19	SF19L26A RDI			
2. Aroclor-1221	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/27/19	SF19L26A RDI			
3. Aroclor-1232	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/27/19	SF19L26A RDI			
4. Aroclor-1242	U		ug/kg	100	5.0	12/20/19	PS19L20B	12/27/19	SF19L26A RDI			
5. Aroclor-1248	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/27/19	SF19L26A RDI			
6. Aroclor-1254	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/27/19	SF19L26A RDI			
7. Aroclor-1260	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/27/19	SF19L26A RDI			
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/20/19	PS19L20B	12/27/19	SF19L26A RDI			
‡ 9. Aroclor-1268	U		ug/kg	100	5.0	12/20/19	PS19L20B	12/27/19	SF19L26A RDF			

Reporting Limit



Order: Page: Date:

94220 42 of 44 01/03/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-DUP1 Chain of Custody:

181441

Client Project Name:

5-10860

Sample No:

Collect Date:

12/16/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time: NA

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-041 Aliquot ID: Matrix: Soil/Solid Description: WMU27-DUP1

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB 3 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-041

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-DUP1

						Prepa	ration	Analysis			
Parameter(s)	Result	Q	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U		μg/kg	340	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
2. Aroclor-1221	U		μg/kg	340	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
3. Aroclor-1232	U		μg/kg	340	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
4. Aroclor-1242	U		μg/kg	340	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
5. Aroclor-1248	U		μg/kg	340	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
6. Aroclor-1254	U		μg/kg	340	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
7. Aroclor-1260	2300		μg/kg	340	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
8. Aroclor-1262	U		μg/kg	340	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	
‡ 9. Aroclor-1268	U		μg/kg	340	25	12/20/19	PS19L20B	12/28/19	SF19L28B	RDK	

DCSID: G-610.19 (10/01/19)



Order: Page: Date:

94220 43 of 44 01/03/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU27-DUP2 Chain of Custody:

181441

Client Project Name: 5-10860

Sample No:

Collect Date:

12/16/19

Analysis

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time: NA

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94220-042 Aliquot ID: Description: WMU27-DUP2 Matrix: Soil/Solid

					•		
						Prepa	ration
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch

Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191219 DB 5 % 1.0 12/19/19 MC191219 12/20/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94220-042

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU27-DUP2

Michiga. El A 0540/El A 0002A	Description. Wilder Doi 2											
Parameter(s)						Prepa	ration	Analysis				
	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.		
1. Aroclor-1016	U		μg/kg	520	38	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK		
2. Aroclor-1221	U		μg/kg	520	38	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK		
3. Aroclor-1232	U		μg/kg	520	38	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK		
4. Aroclor-1242	U		μg/kg	520	38	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK		
5. Aroclor-1248	U		μg/kg	520	38	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK		
6. Aroclor-1254	U		μg/kg	520	38	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK		
7. Aroclor-1260	U		μg/kg	520	38	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK		
‡ 8. Aroclor-1262	U		μg/kg	520	38	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK		
‡ 9. Aroclor-1268	U		μg/kg	520	38	12/20/19	PS19L20B	12/21/19	SF19L20A	RDK		



Analytical Laboratory Report Laboratory Project Number: 94220

Order: 94220 Page: 44 of 44 Date: 01/03/20

Definitions/ Qualifiers:

- **A:** Spike recovery or precision unusable due to dilution.
- **B:** The analyte was detected in the associated method blank.
- E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J: The concentration is an estimated value.
- M: Modified Method
- **U:** The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

J+ : The result is an estimated quantity, but the result may be biased high.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)



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email: asbestos@fibertecihs.com

Geoprobe

11766 E. Grand River Rd. Brighton, MI 48116

Phone: 810 220 3300 Fax: 810 220 3311 Chain of Custody #

181437

Client Name: ASTI Environmental			V.		PARAMETER	S			Matrix Code	Deliverables
Contact Person: Grey Oslasky Project Name/ Number: 5-10860 Email distribution list: golosky Casti-env.com mdyklaCasti-env.com		VERS					HOLD SAMPLE	S Soil A Air O Oil P Wipe	GW Ground Water SW Surface Water WW Waste Water X Other: Specify	Level 2 Level 3 Level 4 EDD
Quote#	MATRIX (SEE RIGHT CORNER FOR	# OF CONTAINERS	B				Ĭ			
Purchase Order#	TRIX	J F C	0							
Date Time Sample # Client Sample Descriptor		#						Remarks:		
12-16-19 937 WMUZ7-5B1-0-3"	5		X							
1 947 WMUZZ-SB)-11-121	1									
957 WMUZ7-5BZ-0-311										ch
1006 WMUZ7-5B2-11-121		1			V				Received By I	_au
1013 WMUZZ-SB3-0-3"									DEC 17 201	
1025 WMUC7-5B3-11-121										
1034 WMUZ7-5B4-0-3"									Initials	
1041 WMVZ7-5B4-11-12'										
1047 WMUZ7-5B5-0-3"	- 110									
1057 WMUZ7-585-9-101	V	$ \Psi $			7 7 1					
Comments: Sampled/Relinquished By: Relinquished By: Turnaround Time ALL RESULTS WILL BE SENT BY THE END Comments and the sent by the se	Date 12	e/Tin	19 ne	ΛY	Received Received	Fiberte	c pr	oject numbe	LAB USE ONLY	eceived On Ice
Place		o h	ack	for terms o	and condi	tions				



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email: asbestos@fibertecihs.com

Geoprobe

11766 E. Grand River Rd. Brighton, MI 48116

Phone: 810 220 3300 Fax: 810 220 3311

Chain of Custody #

Client Name: ASTI Environmental					PARA	METERS			Matrix Code	Deliverables
Contact Person: (grea 65)05 ky									s Sail Gw Ground Wo	ater Level 2
Project Name/ Number:					111				A Air Sw Surface Wo	ater Level 3
5-10860	CODE)				11			PE	O Oil www Waste Wat	Level 4
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Quote#	MATRIX (SEE RIGHT CORNER FOR CODE)	OF CONTAINERS	Q	9						
Purchase Order#	TRIX	N C	6	7						
Date Time Sample # Client Sample Descriptor		#							Remarks:	
12-16-19 720 WMU Z7-5B6-0-3"	5		×							
1276 WMUZ7-586-8.5-9.51			Ш							
12102 WMUZ7-5B7-0-3"			Ш							
1213 WMUZZ-SBZ-10651										
1196 WMUZ7-5B8-0-3"									Receiv	ed By Lab
1156 WMUZ7-5B8-10-111										ed by Lap
1176 WMUZ7-5B9-0-311								# # # 1	DEC	17 2019
1139 WMVZ7-5B9-7-81									Initials	<i>t</i>
1164 WMUZ7-SB10-0-3"									antidio,	
V 1115 WMUZ7-5B10-7-81	W	ar	P							
Comments:										
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HSTI Cold Strage	-				p	ale	1	1	My 12/1;	2/19 8.50
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Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF	THE B	ÚSÍM	ESS I	DAY					LAB USE ON	LY
1 bus. day2 bus. days3 bus. days		4	bus.	. days			Fiberte	c pro	oject number: 94770	Received On Ice
5-7 bus. days (standard) Other (specify time/date requirement);							Tempe	ratur	e upon receipt at Lab: 0,902	
Please	 = ser	e b	ac	k for term	ns and co	onditior	ns			



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Holt, MI 48842

email: asbestos@fibertecihs.com

Geoprobe

11766 E. Grand River Rd. Brighton, MI 48116

Phone: 810 220 3300 Fax: 810 220 3311 Chain of Custody #

181439

Client Nam	e: 4 5	TI	Environmental						PARAMETERS				Matrix Code	Deliverables
Contact Pe	erson: Gr me/Number:		Oslosky		CODE)				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	l l		S Soil A Air O Oil	GW Ground Water SW Surface Water WW Waste Water	Level 2 Level 3 Level 4
Email distrib	ution lists		maykla casti-en. a	on	전 전	# OF CONTAINERS					HOLD SAMPLE	P Wipe	x Other: Specify	EDD
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Purchase C	order#			-4-	MATRIX (OF CC	2							l)
Date	Time	Sample #			_	#					-	Remarks:		
12-6-19	1231		WMU Z7 -SBII- 0-3"		5	1	X							
1	1243		WMUZ7-5B1)-11-12											
	1252		WMUZ7-5B1Z-0-3"											
	1303		WMUZ7-5B17-11-12			1								
	1311		WMUZ7-5B13-0-31										Received By I	Lab
	13 19		WMUZ7-5813-11-12										DEC 17 201	7
	1326		WMV Z7-5B14-0-3											
	1334		WMU 27-5B14-11-11.7	51									Initials: 16	
	1340		WMVZ7-5B15-0-3"											
V	1347		WMUZ7-5B15-11-12		V	Y	W							
Comments			+ A								·			
Sampled/R	elinquished B	y: 11	Titchel Dil		Date/ 12-/(Time	e 4	1630	Received By:	511	_	Colo	1 Storage	
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				Please	see	bo	ack	for terms at	nd condition:	 S				



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Fax: 810 220 3311

Chain of Custody #

181440 PAGE 4 of 5

		, .	-	_			_		
Client Name: ASTI Envir	enmental				PARAMETER	RS		Matrix Code	Deliverables
Contact Person: 4(eg 05) Project Name/ Number: 5'-10860	as ky	(300:					İ	S Soil GW Ground Water A Air SW Surface Water O Oil WW Waste Water	Level 2 Level 3 Level 4
Email distribution list: 905 los ky @asti-env.com	mdyklaCasti-env.com	IT CORNER FOR O	# OF CONTAINERS				€ 1	P Wipe X Other: Specify	EDD
Quote#		MATRIX (see righ	NTAI	2			Ξ		
Purchase Order#		TRIX (P CC	S					
Date Time Sample #	Client Sample Descriptor		#					Remarks:	
	7-5316-0-311	5	1	X					
1 1437 WMUZ	7-5816-7-81		1						
1476 W.MUZ	7-5817-0-34							Donate to	
1431 WMU8	27-SB17-6-71							Received By L	ab
1416 WMU 2	27-5818-0-311							DEC 17 2010	
	27 -5B18-9-101							1	
	7-SB19-0-311							Initials: 1 M	
	27-5819-6-71								
	27-5B20-0-3"		T				. 1		
	7-5820-9-10	W	T	1					
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5-7 bus. days (standard) Othe	er (specify time/date requirement):					Temper	ature	e upon receipt at Lab:	
	Please	see	bc	ack	for terms and condi	tions			



Analytical Laboratory

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rux: 517 677 0362

email: asbestos@fibertecihs.com

Geoprobe

11766 E. Grand River Rd. Brighton, MI 48116 Phone: 810 220 3300

Fax: 810 220 3311

Chain of Custody #

181441

Client Name: ASTI Environmental					PARA	METERS				Matrix Cod	е	Deliverables
Contact Person: (770 Blos Ky Project Name/ Number:									S Soil	GW G	round Water	Level 2
Project Name/ Number:			Ш						A Air	SW St	urface Water	Level 3
5-10860	(SODE)							ا پ	0 01	ww w	aste Water	Level 4
Email distribution list:	- % - %							AMP	P Wipe	x o	ther: Specify	EDD
Email distribution list: y dlosky Qustienv.con mdyklu@asti-env.con	T CORNER	OF CONTAINERS						HOLD SAMPLE				
Quote#	MATRIX (SEE RIGHT	A	PCBs					Ť				
Purchase Order#	Z X	1 S	Do									
Date Time Sample # Client Sample Descriptor	MA.	#							Remarks:			
12-16-14 - WMUZ7- DUDI	5	1	X									
12-16-19 — WMUZ7- Dupl 12-16-19 — WMUZ7- Dup?	5		X				- 11					
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Pleas	se se	e bo	ack	for terms of	and co	onditions	3					

ASTI ENVIRONMENTAL

ENVIRONMENTAL INVESTIGATION, REMEDIATION, COMPLIANCE AND RESTORATION PROJECTS THROUGHOUT THE GREAT LAKES SINCE 1985.

OUR SERVICES INCLUDE:

- ASBESTOS, LEAD, MOLD, AND RADON ASSESSMENTS
- BROWNFIELD/GREYFIELD REDEVELOPMENT ASSISTANCE
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- Environmental Assessments and Impact Statements
- ENVIRONMENTAL OPPORTUNITIES ASSESSMENT
- GIS MAPPING
- HAZARD MITIGATION PLANNING
- MINING AND RECLAMATION ASSISTANCE
- REMEDIATION IMPLEMENTATION, OPERATION AND MAINTENANCE
- PHASE I ESA AND ENVIRONMENTAL DUE DILIGENCE ASSESSMENTS
- REGULATORY COMPLIANCE AND PERMITTING
- Soil and Groundwater Assessments
- Soil and Groundwater Remediation
- STORAGE TANK COMPLIANCE AND CLOSURE
- THREATENED AND ENDANGERED SPECIES SURVEYS
- WATERSHED AND STORMWATER MANAGEMENT PROGRAMS
- WETLAND DELINEATION, PERMITTING, MITIGATION AND BANKING



Attachment E

WMU-29 Soil Investigation Report

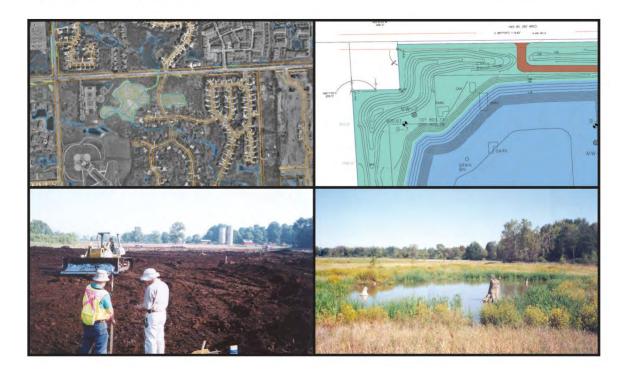
Waste Management Unit 29 Soil Investigation

18251 West Jefferson Riverview, Michigan

Riverview-Trenton Railroad Company

January 19, 2021

ASTI ENVIRONMENTAL





Waste Management Unit 29 Soil Investigation

18251 West Jefferson Riverview, Michigan

January 19, 2021

Prepared For:

Riverview-Trenton Railroad Company 12225 Stephens Road Warren, Michigan 48089

Report Prepared By:

ASTI Environmental 10448 Citation Drive, Suite 100 Brighton, Michigan 48116 (810) 225-2800

ASTI Project No. 10860

Report Prepared by:

Report Reviewed by:

Greg S. Oslosky

Director - Grand Rapids Office

Allison J. Rogowski, EP

Associate Environmental Scientist



Table of Contents

1.0	Introduction	1
2.0	Background	1
3.0	Previous Investigations	
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4.1	Soil Sample Collection	3
4.2.	Laboratory Analytical Results	
4.3.	Concrete	
5.0	Measures to Prevent Unacceptable Human Exposure to PCBs	5
6.0	Conclusions	
7.0	RCRA Certification Statement	6

<u>Tables:</u> <u>Table 1 – Summary of PCB Analytical Results</u>

Attachments:

Attachment A - Figures

Figure 1 - Site Location Map

Figure 2 - RTRR Site Features Map Figure 3 - WMU-29 Sample Location Map

Attachment B - Soil Boring Logs

Attachment C - Laboratory Analytical Report



Waste Management Unit 29 Soil Investigation Riverview-Trenton Railroad Company Former McLouth Steel Site 18251 West Jefferson Avenue Riverview, Michigan

1.0 Introduction

In accordance with the Corrective Action Consent Order ("CACO") dated November 1, 2018 between the Riverview-Trenton Rail Road Company ("RTRR") and the Michigan Department of Environment, Great Lakes, and Energy ("EGLE"), ASTI Environmental ("ASTI") conducted a soil investigation at the property located at 18251 West Jefferson Avenue in the City of Riverview, Wayne County, Michigan ("Subject Property"). The portion of the Subject Property which lies south of Sibley Road, is located in the City of Trenton. The investigation was completed in accordance with the Statement of Work included as Attachment A of the CACO for the Subject Property and with the Work Plan – Waste Management Unit Investigations prepared by ASTI dated June 28, 2019 ("Work Plan"). Attachment A includes Figure 1, Site Location Map and Figure 2, a Site Features Map.

The investigation was completed for the former Toxic Substance Control Act ("TSCA") waste storage building, also known as Waste Management Unit 29 ("WMU-29"). The location of WMU-29 is shown in Figure 2. The purpose of the investigation was to determine the horizontal and vertical extent of polychlorinated biphenyls ("PCBs"). As defined in the CACO, soil analytical results were compared to the TSCA PCB Cleanup Level for Low Occupancy Areas of less than or equal to 25 parts per million ("ppm" or milligrams per kilogram).

2.0 Background

The McLouth Steel Company ("McLouth") acquired the Subject Property between 1956 and 1961, and used portions of it for storage of raw materials, waste, and product to support the integrated production of steel and iron in the production facility located to the south ("McLouth Facility"). A large slag processing operation, operated by E. C. Levy Company, was located on the Subject Property. After about 1975, steel production decreased until McLouth ceased operations in April of 1996 after filing for Chapter 11 bankruptcy protection on September 29, 1995. At that time, only one blast furnace was operational and most other production units were operating at significantly reduced capacities.

Hamlin Holdings, Inc. acquired the Subject Property in July of 1996, although it is unclear what was conducted on the Subject Property during that time. Detroit Steel Company ("DSC") obtained title for the Subject Property in August of 1996, during which time it used the Subject Property for storage and conducted removal activities. DSC resumed pickling of strip steel at the McLouth Facility in July 1998. In support of the pickling operations, DSC started the scrubber, Central Wastewater Treatment Plant, and the pH adjustment station. Those operations closed in 2005. Crown Enterprises purchased the Subject Property on June 2, 2000 and conveyed the property to RTRR in November of 2000.



Historically, the Subject Property included the Monguagon Creek channel, an oil storage terminal, and a large building with docking facilities. By 1961, the large building and oil terminal had been demolished and the Monguagon Creek channel had been rerouted to its current location along River Road. By 1967, the original channel and mouth area of Monguagon Creek had been filled completely and this area was used for storage of equipment and materials (ore, debris, and scrap)¹.

WMU-29 was a concrete block building constructed around 1980 which measured approximately 46 feet by 20 feet. The building was used to store containers of PCB transformers and materials in compliance with TSCA regulations. The sealed concrete floor was constructed with secondary containment curbs that served as footings for the block walls. The building was demolished by early 2001 and only the concrete pad and secondary containment curbs remain.

3.0 Previous Investigations

In October 2000, Environmental Strategies Corporation ("ESC") collected samples of the concrete pad, the cinder block walls, and soil from beneath the pad. Results of laboratory analysis indicated that soil beneath the pad contained PCB concentrations which exceeded 25 ppm in two of the five soil borings. In both locations, PCBs exceeded 25 ppm in the samples collected from 0 to 6 inches below the concrete pad and in the samples collected 6 inches to 12 inches below the concrete pad. PCBs were detected at a maximum concentration of 806 ppm in soil, a maximum concentration of 0.5 ppm in the concrete core samples, and a maximum concentration of 2.5 ppm in the concrete block samples.

Additional investigation was performed in January 2001 which included collection of composite soil samples from around the concrete pad and concrete samples from the pad. Laboratory analytical concentrations indicated that PCBs were detected in composite samples around the concrete pad at concentrations less than 25 ppm. Individual soil grab samples for each composite were also collected and analyzed and a maximum concentration of 4 ppm was reported. PCBs were detected in each of the five concrete samples collected and the maximum concentration was 1,400 ppm. Three of the five concrete samples collected contained a PCB concentration greater than 1 ppm; the allowable limit for a PCB cap as defined in the Code of Federal Regulations ("CFR") 761.61(a)(7).

In July 2001, the concrete slab of the former TSCA waste storage building was cleaned with a surfactant solution. After cleaning, one verification sample was collected from the full thickness of the slab. The concrete sample contained a concentration of PCBs greater than 50 ppm².

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¹ North Area Characterization Plan, Revised, ESC, November 2, 2000

² Quarterly Status Report, DSC LTD., Third Quarter 2001, November 14, 2001

4.0 December 2019 PCB Investigation

4.1 Soil Sample Collection

ASTI conducted a soil investigation in accordance with the CACO and the Work Plan. The Work Plan described installation of 14 soil borings surrounding the concrete pad and 2 soil borings beneath the pad. ASTI considered a five-foot wide perimeter surrounding the concrete pad for the WMU-29 investigation. The concrete pad measures approximately 46 feet (east/west) by approximately 20 feet (north/south). ASTI determined sample locations for the area surrounding the concrete pad using a Systematic Random Approach as described in the EGLE Guidance Document titled Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria ("S3TM" [EGLE, 2002]). ASTI used one sample locating approach for the grids north and south of the concrete pad and a separate locating approach for the grids to the east and west of the pad due to different orientations of the grid blocks.

The grid sizes were determined by allowing for a five-foot wide investigation area around the pad and locating two samples on each side of the pad and five samples along the length of each side of the pad. The dimensions of the grids located to the north and south of the concrete pad were 11.2 feet (east/west) by 5 feet (north/south). The dimensions of the grids located on the east and west sides of the pad were five feet (east/west) by ten feet (north/south). One sample was collected from each grid.

ASTI used Microsoft Excel to randomly generate soil sample locations within each grid. For the grids located on the north and south of the pad, one random number between 0 and 11.2 was generated for the x-axis (east/west) and one random number between 0 and 5 was generated for the y-axis (north/south). The random number generated for the x-axis was 8 and the random number generated for the y-axis was 4. ASTI used these randomly generated numbers to measure from the southwest corner of each grid; 8 feet east from the southwestern corner and 4 feet north of the southern border of each grid. Figure 3 shows the WMU-29 area of investigation including the grids and sample locations.

For the grids located on the east and west of the pad, one random number between 0 and 5 was generated for the x-axis (east/west) and one random number between 0 and 10 was generated for the y-axis (north/south). The random number generated for the x-axis was 3 and the random number generated for the y-axis was 4. ASTI used these randomly generated numbers to measure from the southwest corner of each grid; 3 feet east from the southwestern corner and 4 feet north of the southern border of each grid (Figure 3). The soil borings installed around the perimeter of the pad were designated WMU29-SB1 through WMU29-SB14.

Additionally, ASTI installed two soil borings beneath the concrete pad (WMU29-SB15 and WMU29-SB16). The two locations were chosen based on previous samples with PCB concentrations which exceeded 25 ppm. The sample locations beneath the concrete pad are shown on Figure 3.

Prior to drilling, ASTI contacted the Michigan MISS DIG system to locate public utilities near the Subject Property. On December 17, 2019, an ASTI scientist supervised installation of 16 soil borings within the WMU-29 area of investigation. The soil borings were installed with the use of a track-mounted hydraulic direct push drill rig. Each soil boring location was marked



in the field prior to drilling using measurements calculated using the systematic random approach.

Soil was continuously logged and recorded in the project field notebook. Each boring was advanced to drilling refusal and depths ranged from 7 feet bgs to 12 feet bgs. ASTI collected one surface soil sample from the interval between zero and three inches bgs. For the soil borings installed beneath the concrete pad (WMU29-SB15 and WMU29-SB-16), shallow samples were collected from the soil interval located zero to three inches beneath the concrete. A second soil sample was collected from the interval directly above the depth of drilling refusal. The Work Plan also stated that a third sample would have been collected from each boring at an interval which displayed potential impacts based on visual observations (i.e. staining, odor, etc.). ASTI did not observe any intervals which displayed potential impacts requiring the need for a third sample; therefore, two soil samples were collected and analyzed from each boring. The soil boring logs are provided in Attachment B.

Soil was retrieved from the borings in a clean disposable acetate liner and scanned with a photoionization detector ("PID"). Prior to sample collection, the PID was calibrated to manufacturer specifications using 100 ppm isobutylene span gas. After logging the soil lithological descriptions, the ASTI field scientist collected soil samples from the intervals described above. Soil samples were collected by placing soil directly into clean jars provided by the laboratory. Each sample was labeled with a unique identification number including the Waste Management Unit identification, soil boring identification number, and the depth interval. For example, the soil sample collected from the zero to three-inch bgs interval from boring WMU29-SB1 was identified as WMU29-SB1-0-3". After collection, the samples were placed on ice and kept cold until delivery to Fibertech Laboratory (Fibertech) in Holt, Michigan under standard chain-of-custody procedures. For the purpose of quality control/quality assurance (QA/QC), ASTI collected a duplicate sample. Soil samples were analyzed for PCBs by United States Environmental Protection Agency (USEPA) Methods 3546 and 8082A.

4.2. Laboratory Analytical Results

The laboratory analytical results for the WMU-29 soil samples collected in December 2019 indicate that PCBs were not present at a concentration greater than 25 ppm with the exception of one sample. The sample collected from WMU29-SB15 from zero to three inches below the concrete pad contained a concentration of total PCBs of 2,200 ppm. PCBs were detected at a concentration of 0.15 ppm from the interval from six to seven feet bgs at the same location. No other samples contained a PCB concentration in exceedance of 25 ppm. Table 1 provides a summary of the laboratory analytical results for the December 2019 soil investigation (note that analytical results in the table are presented in parts per billion). The laboratory analytical report is provided in Attachment C.

4.3. Concrete

Concrete samples were not collected during this investigation. Investigations conducted previously included collection of concrete samples for PCB analysis and PCBs were detected at a maximum concentration of 1,400 ppm. A previous attempt to clean the concrete was unsuccessful at reducing PCB concentrations to acceptable levels. Removal and disposal of the concrete pad will take place for proper disposal prior to or during redevelopment of the Subject Property.



5.0 Measures to Prevent Unacceptable Human Exposure to PCBs

Multiple soil investigations have taken place to characterize soil beneath and around the WMU-29 concrete pad. Soil samples collected around the concrete pad did not detect concentrations of PCBs in exceedance of 25 ppm. Soil sampling conducted in shallow soil below the concrete pad contained concentrations of PCBs which exceeded 100 ppm (the maximum concentration for leaving bulk remediation PCB waste in a low-occupancy area). Deeper soil samples collected beneath the concrete pad did not contain PCB concentrations greater than 25 ppm.

Options to prevent unacceptable human exposure to PCBs are dependent on future site use. Redevelopment plans are not complete at this time; however, it is assumed that the former WMU-29 area will meet the definition of low occupancy as defined in 40 CFR 761.3. A low occupancy area is defined as any area where PCB remediation was has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: less than 335 hours (an average of 6.7 hours per week) for bulk PCB remediation waste. Several potential options to remediate PCBs in order to prevent unacceptable human exposure to PCBs for low occupancy are summarized below:

- Clean and characterize the concrete pad and removal of soil with PCB concentrations greater than 100 ppm. This option would require collection and containment of wash wastewater for disposal, Concrete characterization would be required; however, concrete removal would be necessary to excavate soils with PCB concentrations greater than 100 ppm. A fence would be required for this option. Concrete cleaning was conducted in the past and PCB concentrations remain at unacceptable levels.
- Risk-based disposal: this option uses a risk-based approach to determine if PCBs pose an unacceptable risk to human heal or ecological receptors. This option would likely require collection of additional samples. A risk-based approach may show that remediation is required; therefore, this approach will not be considered further.

The concrete pad will be removed to eliminate exposure to PCBs based on concentrations detected in previous investigations. The following provides a summary of the potential remedial options based on assumed low occupancy use of the area as defined in CFR 761.3:

- If future site use meets the definition for low occupancy site use (future occupancy is assumed to be low-occupancy), the soils containing PCB concentrations equal to or below 50 ppm could remain at the site if the area is secured by a fence and marked with a sign including the M_L mark. A deed restriction would be required, in accordance with 40 CFR 761.61(a)(8), and maintenance of the fence would be required by the site owner in perpetuity.
- An additional option for low occupancy would allow for soils with PCB concentrations less than or equal to 100 ppm to remain at the site if the site is covered with an cap of concrete, asphalt, or similar material of minimum thickness spread over the area where remediation waste was removed or left in place as required by 40 CFR 761.61(a)(7). This option would also require a deed restriction in accordance with 40



CFR 761.61(a)(8) and maintenance of the cap. The existing concrete pad does not meet the criteria for a cap as defined in 40 CFR 761.61(a)(8); therefore, this option required removal of concrete pad for characterization and proper disposal.

6.0 Conclusions

ASTI collected 32 soil samples (plus one duplicate soil sample) for analysis of PCBs. Each sample contained a PCB concentration below 25 ppm, with the exception of one sample collected from shallow soil below the existing concrete pad. The maximum detected PCB concentration was 2,200 ppm. These concentrations are consistent with PCB concentrations detected during previous investigations.

Based on PCB concentrations detected during ASTI's soil investigation under and adjacent to the concrete pad, and concentrations detected in concrete during previous investigations, ASTI recommends removal of the concrete pad and removal of soil as described in the options above.

7.0 RCRA Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Greg S. Oslosky, P.G.

Director - Grand Rapids

Table 1 Summary of WMU-29 Soil Analysis

Waste Management Unit 29 Investigation

Table 1 Summary of WMU-29 Soil Analysis RTRR Property 18251 West Jefferson Ave, Riverview, MI ASTI Project Number 10860

					WMU29-DUP		
	TSCA PCB Cleanup	WMU29-SB1-0-3"	WMU29-SB1-10-11'	WMU29-SB2-0-3"	WMU29-SB2-0-3"	WMU29-SB2-10-11'	WMU29-SB3-0-3"
	Level for Low	0-3"	10-11'	0-3"	0-3"	10-11'	0-3"
	Occupany Areas	12/17/2019	12/17/2019	12/17/2019	12/17/2019	12/17/2019	12/17/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs							
PCB, Aroclor 1016		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1232		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	390	<100	<100	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1254		620	<100	160	<100	<100	1,200
PCB, Aroclor 1260		460	<100	200	<100	<100	820
PCB, Aroclor 1262		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100	<100
Total PCBs	25,000	1,080	390	360	<100	<100	2,020

	TSCA PCB Cleanup	WMU29-SB9-0-3"	WMU29-SB9-9-10'		WMU29-SB10-10-11		' WMU29-SB11-10-11
	Level for Low	0-3"	9-10'	0-3"	10-11'	0-3"	10-11'
	Occupany Areas	12/17/2019	12/17/2019	12/17/2019	12/17/2019	12/17/2019	12/17/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs							
PCB, Aroclor 1016							
PCB, Aroclor 1221		<100	<100	<100	<100	<100	<100
PCB. Aroclor 1232		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	<100	<100	<100	<100	280
PCB, Aroclor 1248		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1254		420	<100	<100	<100	<100	370
PCB, Aroclor 1260		420	270	<100	190	290	290
PCB, Aroclor 1262		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100	<100
Total PCBs	25,000	840	270	<100	190	290	940

Notes:

[&]quot;µg/kg" - micrograms per kilogram or parts per billion

Bold indicates concentration greater than the reporting limit.

Shading indicates concentration exceeding cleanup criteria.

[&]quot;<" indicates concentration below laboratory reporting limit.

Table 1 Summary of WMU-29 Soil Analysis RTRR Property 18251 West Jefferson Ave, Riverview, MI ASTI Project Number 10860

	TSCA PCB Cleanup Level for Low Occupany Areas	11-12' 12/17/2019	WMU29-SB4-0-3" 0-3" 12/17/2019	WMU29-SB4-11-12' 11-12' 12/17/2019	WMU29-SB5-0-3" 0-3" 12/17/2019	WMU29-SB5-10-11' 10-11' 12/17/2019	WMU29-SB6-0-3" 0-3" 12/17/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs							
PCB, Aroclor 1016		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1232		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1242		330	<100	<100	<100	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1254		480	<100	<100	1,700	<100	520
PCB, Aroclor 1260		350	120	<100	1,700	<100	400
PCB, Aroclor 1262		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100	<100
Total PCBs	25,000	1,160	120	<100	3,400	<100	920

	TSCA PCB Cleanup Level for Low Occupany Areas	WMU29-SB12-0-3" 0-3" 12/17/2019	WMU29-SB12-11-12' 11-12' 12/17/2019	WMU29-SB13-0-3" 0-3" 12/17/2019	WMU29-SB13-6-7' 11-12' 12/17/2019	WMU29-SB14-0-3" 0-3" 12/17/2019	WMU29-SB14-10-11 10-11' 12/17/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs							
PCB, Aroclor 1016							
PCB, Aroclor 1221		<100	<100	<100	<100	<100	<100
PCB. Aroclor 1232		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	<100	<100	210	<100	<100
PCB, Aroclor 1248		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1254		540	1,700	1,400	240	580	870
PCB, Aroclor 1260		420	<100	1,200	<100	460	1,000
PCB, Aroclor 1262		<100	<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100	<100
Total PCBs	25,000	960	1,700	2,600	450	1,040	1,870

Notes:

"µg/kg" - micrograms per kilogram or parts per billion

Bold indicates concentration greater than the reporting limit.

Shading indicates concentration exceeding cleanup criteria.

[&]quot;<" indicates concentration below laboratory reporting limit.

Table 1 Summary of WMU-29 Soil Analysis RTRR Property 18251 West Jefferson Ave, Riverview, MI ASTI Project Number 10860

	TSCA PCB Cleanup (Level for Low Occupany Areas	WMU29-SB6-11-12' 11-12' 12/17/2019	WMU29-SB7-0-3" 0-3" 12/17/2019	WMU29-SB7-10-11' 10-11' 12/17/2019	WMU29-SB8-0-3" 0-3" 12/17/2019	WMU29-SB8-9-10' 9-10' 12/17/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs	. 5 - 5	100	100	, , ,	100	100
PCB, Aroclor 1016		<100	<100	<100	<100	<100
PCB, Aroclor 1221		<100	<100	<100	<100	<100
PCB, Aroclor 1232		<100	<100	<100	<100	<100
PCB, Aroclor 1242		<100	<100	<100	<100	420
PCB, Aroclor 1248		<100	<100	<100	<100	<100
PCB, Aroclor 1254		<100	7,700	<100	1,300	410
PCB, Aroclor 1260		<100	5,000	<100	1,500	230
PCB, Aroclor 1262		<100	<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100	<100
Total PCBs	25,000	<100	12,700	<100	2,800	1,060

	TSCA PCB Cleanup Level for Low	WMU29-SB15-0-3" 0-3"	WMU-29-SB15-6-7' 6-7'	WMU29-SB16-0-3" 0-3"	WMU29-SB16-6-7' 6-7'
	Occupany Areas	12/17/2019	12/17/2019	12/17/2019	12/17/2019
Parameters	μg/kg	μg/kg	μg/kg	μg/kg	μg/kg
PCBs					
PCB, Aroclor 1016					
PCB, Aroclor 1221		<100	<100	<100	<100
PCB. Aroclor 1232		<100	<100	<100	<100
PCB, Aroclor 1242		<100	<100	<100	190
PCB, Aroclor 1248		<100	<100	<100	<100
PCB, Aroclor 1254		1,800,000	150	270	240
PCB, Aroclor 1260		400,000	<100	210	<100
PCB, Aroclor 1262		<100	<100	<100	<100
PCB, Aroclor 1268		<100	<100	<100	<100
Total PCBs	25,000	2,200,000	150	480	430

Notes:

"µg/kg" - micrograms per kilogram or parts per billion

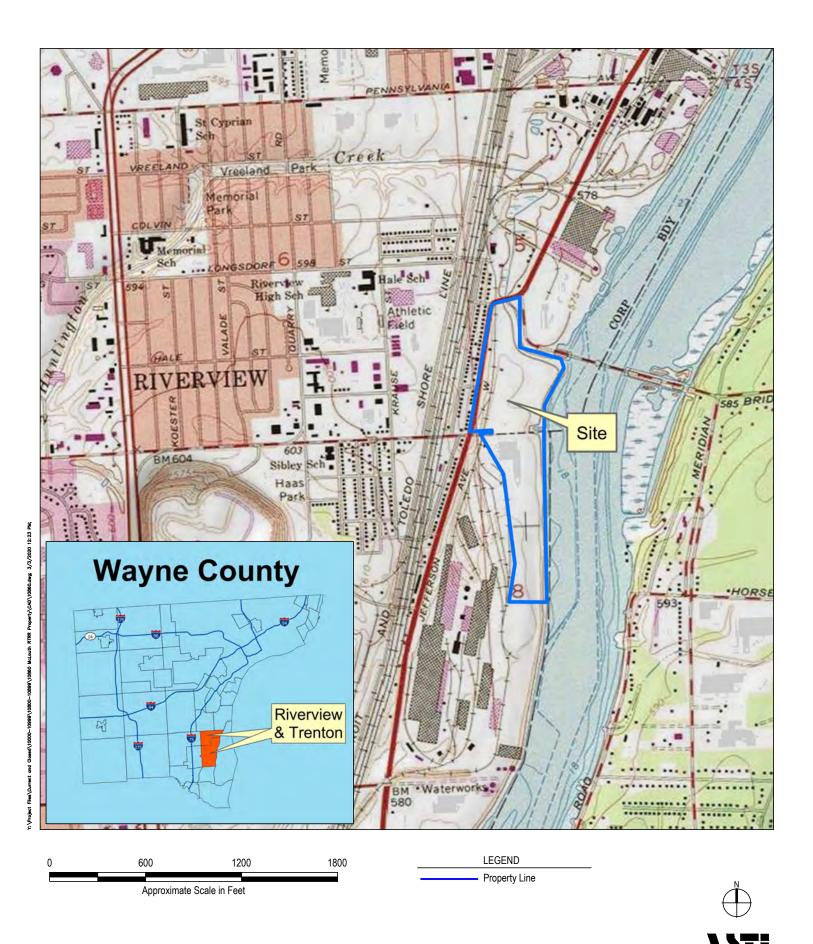
Bold indicates concentration greater than the reporting limit.

Shading indicates concentration exceeding cleanup criteria.

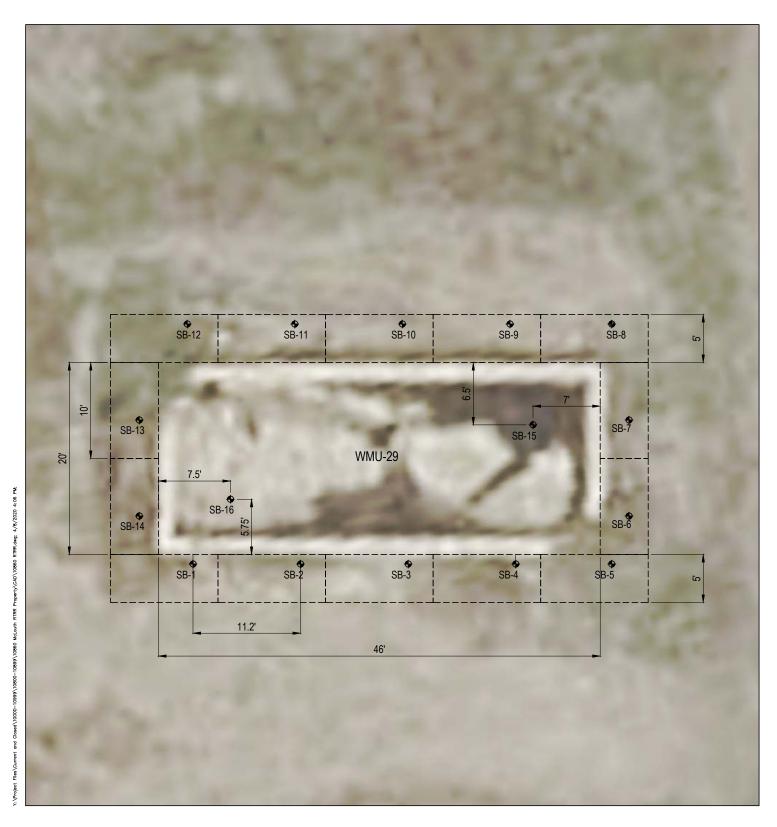
[&]quot;<" indicates concentration below laboratory reporting limit.

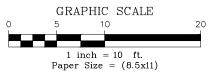
Attachment A Figures

Waste Management Unit 29 Investigation









Soil Boring Location
Stake Location



18251 West Jefferson, Riverview, MI

Attachment B Soil Boring Logs

Waste Management Unit 29 Investigation

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB1
Total Depth:	11'
Date Completed:	12/17/2019
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

Depth		Description	PID	Sample Depth
From	To		(ppm)	Берит
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, vegetation, and slag, brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	11'	SAND, medium to coarse grained, trace very fine to fine grained sand, silt, gravel, and slag, grey, moist, loose (fill)	0.0	Soil at 10-11'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB2
Total Depth:	11'
Date Completed:	12/17/2019
MM/ D-4-	İ
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

	Depth Description		PID (ppm)	Sample Depth
From 0	To 4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, vegetation, and slag, brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	11'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, grey, moist, loose (fill)		Soil at 10-11'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB3
Total Depth:	12'
Date Completed:	12/17/2019
	•
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De From	Depth Om To		PID (ppm)	Sample Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, vegetation, and slag, brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	12'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 11-12'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB4
Total Depth:	12'
Date Completed:	12/17/2019
	1
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De From	Depth Description		PID (ppm)	Sample Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	12'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 11-12'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB5
Total Depth:	11'
Date Completed:	12/17/2019
	-
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
	_
GW Depth (▼):	NA

	Depth Description		PID (ppm)	Sample Depth
From	To			Бериі
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
0	4"	gravel, silt, vegetation and slag, brown, moist, loose (fill)	0.0	0-3"
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
4"	11'	gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	10-11'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data Boring ID:	WMU29-SB6
Total Depth:	12'
Date Completed:	12/17/2019
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

	Depth Description		PID (ppm)	Sample Depth
From	To			Бериі
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
0	4"	gravel, silt, vegetation and slag, brown, moist, loose (fill)	0.0	0-3"
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
4"	12'	gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	11-12'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: **RTRR** Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: **ERG** Method: Direct push probe Mitchel Dykla Geologist:

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB7
Total Depth:	11'
Date Completed:	12/17/2019
MW Data	I
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

Depth Description		PID (ppm)	Sample Depth	
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	4'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, grey, moist, loose (fill)	0.0	
4'	10'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, asphalt, and slag, dark brown, moist, loose (fill)	0.0	
10'	11'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, asphalt, concrete, and slag, dark brown, moist, loose (fill)	0.0	Soil at 10-11'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data Boring ID:	WMU29-SB8
Total Depth:	<u>11'</u>
Date Completed:	12/17/2019
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De	epth	Description	PID (ppm)	Sample
From	То			Depth
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	3.5'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, grey, moist, loose (fill)	0.0	
3.5	11'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, asphalt, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 9-10'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB9
Total Depth:	12'
Date Completed:	12/17/2019
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA
1 ' ' '	

	epth	Description		Sample Depth
From	То		(ppm)	Бериі
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, slag, wood and vegetation, dark brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	8'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, asphalt, and slag, grey and brown, moist, loose (fill)	0.0	
8'	12'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, asphalt, and slag, dark brown, moist, compact (fill)	0.0	Soil at 9-10'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB10
Total Depth:	11'
	•
Date Completed:	12/17/2019
	•
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De	epth	Description		Sample
From	To			Depth
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
0	4"	gravel, silt, slag, and vegetation, dark brown, moist, loose (fill)	0.0	0-3"
		SAND, medium to coarse grained, trace very fine to fine grained sand,		
4"	8'	gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	
		SAND, fine to medium grained, trace very fine to fine grained sand,		Soil at
8'	11'	gravel, silt, and slag, dark brown, moist, compact (fill)	0.0	10-11'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB11
Total Depth:	11'
	•
Date Completed:	12/17/2019
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De	epth	Description		Sample
From	To			Depth
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
0	4"	gravel, silt, and slag, brown, moist, loose (fill)	0.0	0-3"
		SAND, medium to coarse grained, trace very fine to fine grained sand,		
4"	9'	gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	
	SAND, medium to coarse grained, trace very fine to fine grained sand,			Soil at
9'	11'	gravel, silt, and slag, dark brown, moist, compact (fill)	0.0	10-11'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB12
Total Depth:	12'
Date Completed:	12/17/2019
MW Data	I
21121	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

De	epth	Description		Sample
From	То			Depth
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
0	4"	gravel, silt, and slag, brown, moist, loose (fill)	0.0	0-3"
		SAND, medium to coarse grained, trace very fine to fine grained sand,		
4"	9'	gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
9'	12'	gravel, silt, and slag, dark brown, moist, compact (fill)	0.0	10-11'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB13
Total Depth:	7'
Date Completed:	12/17/2019
•	
104/5	İ
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

	epth	Description	PID (ppm)	Sample Depth
From	То	·		Берит
	4.11	SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
0	4"	gravel, silt, vegetation, and slag, brown, moist, loose (fill)	0.0	0-3"
		SAND, medium to coarse grained, trace very fine to fine grained sand,		Soil at
4"	7'	gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	6-7'
	End of Boring			

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

ASTI Environmental 10448 Citation Dr., Suite 100 Brighton, MI 48116

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB14
Total Depth:	11'
Date Completed:	12/17/2019
MW Data	
Size:	l NA
<u> </u>	
Туре:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

Depth		Description	PID (ppm)	Sample Depth
From	То		(ррііі)	Берит
0	4"	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, vegetation, and slag, brown, moist, loose (fill)	0.0	Soil at 0-3"
4"	9'	SAND, medium to coarse grained, trace very fine to fine grained sand, concrete, silt, and slag, dark brown, moist, loose (fill)	0.0	
9'	11'	SAND, medium to coarse grained, trace very fine to fine grained sand, concrete, silt, and slag, dark brown, moist, compact (fill)	0.0	Soil at 10-11'
		End of Boring		

ppm = parts per million

MW = monitoring well

TW = temporary monitoring well

bgs = below ground surface

(USDA soil texture)

ASTI Environmental 10448 Citation Dr., Suite 100 Brighton, MI 48116

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB15
Total Depth:	7'
Date Completed:	12/17/2019
	_
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

Depth From To		Description	PID (ppm)	Sample Depth
0	8"	Concrete	0.0	Soil at 0-3"
8"	7'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 6-7'
		End of Boring		

ppm = parts per million
MW = monitoring well
TW = temporary monitoring well
bgs = below ground surface
(USDA soil texture)
Sample Depth indicates depth
below the bottom of the
concrete pad.

ASTI Environmental 10448 Citation Dr., Suite 100 Brighton, MI 48116

Proj. Name: RTRR Proj. Number: 10860 Site Address: 18251 West Jefferson Riverview, Michigan Drilled by: ERG Method: Direct push probe Geologist: Mitchel Dykla

SOIL BORING LOG

Boring Data	
Boring ID:	WMU29-SB16
Total Depth:	7'
Date Completed:	12/17/2019
MAY Date	i
MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA
GW Depth (▼):	NA

Depth From To		Description	PID (ppm)	Sample Depth
0	8"	Concrete	0.0	Soil at 0-3"
8"	7'	SAND, medium to coarse grained, trace very fine to fine grained sand, gravel, silt, and slag, dark brown, moist, loose (fill)	0.0	Soil at 6-7'
	-	End of Boring		

ppm = parts per million
MW = monitoring well
TW = temporary monitoring well
bgs = below ground surface
(USDA soil texture)
Sample Depth indicates depth
below the bottom of the
concrete pad.

Attachment C Laboratory Analytical Report

Waste Management Unit 29 Investigation



Monday, January 06, 2020

Fibertec Project Number: 94300

Project Identification: 5-10860 /5-10860

Submittal Date: 12/19/2019

Mr. Greg Oslosky
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Oslosky,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Sharon Rakow at 5:40 PM, Jan 06, 2020

For Daryl P. Strandbergh Laboratory Director

Enclosures



Order: 94300 Page: 2 of 35 Date: 01/06/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB1-0-3"

Chain of Custody:

181442

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix: Soil/Solid Collect Time:

10:40

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

Dilution

1.0

94300-001

P. Date

12/26/19

Preparation

Matrix: Soil/Solid

Method: ASTM D2216-10

Result

12

Q

Description: WMU29-SB1-0-3"

Analysis A. Date A. Batch Init.

1. Percent Moisture (Water Content)

%

Reporting Limit

MC191226

P. Batch

12/27/19

MC191226 DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-001

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A	Description: WMU29-SB1-0-3"									
						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.	
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDK	
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDK	
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDK	
4. Aroclor-1242	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDK	
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDK	
6. Aroclor-1254	620	J+	μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDK	
7. Aroclor-1260	460	J+	μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDK	
\$ 8. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDK	
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDK	



Order: 94300 3 of 35 Page: Date: 01/06/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-SB1-10-11"

Chain of Custody:

181442

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 10:45

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94300-002

P. Date

12/26/19

Matrix: Soil/Solid

Method: ASTM D2216-10

Result

9

Q

Description: WMU29-SB1-10-11"

Analysis A. Date A. Batch Init.

1. Percent Moisture (Water Content)

Reporting Limit

94300-002

MC191226 DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

Matrix: Soil/Solid

12/27/19

Dilution

1.0

P. Batch

MC191226

Preparation

Method: EPA 3546/EPA 8082A

Description: WMU29-SB1-10-11"

						Preparation		Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/28/19	SC19L27C RDI
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/28/19	SC19L27C RDI
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/28/19	SC19L27C RDI
4. Aroclor-1242	390		μg/kg	100	5.0	12/26/19	PS19L26C	12/28/19	SC19L27C RDI
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/28/19	SC19L27C RDI
6. Aroclor-1254	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/28/19	SC19L27C RDI
7. Aroclor-1260	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/28/19	SC19L27C RDI
\$. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/28/19	SC19L27C RDI
9. Aroclor-1268	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/28/19	SC19L27C RDI



Order: 94300 Page: 4 of 35 Date: 01/06/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-SB2-0-3"

Chain of Custody:

181442

Client Project Name: 5-10860

40000

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time:

10:52

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Reporting Limit

Water (Moisture) Content Dried at 105 \pm 5°C

Method: ASTM D2216-10

Aliquot ID: 94300-003

Matrix: Soil/Solid

Description: WMU29-SB2-0-3"

Preparation Analysis
P. Date P. Batch A. Date A. Batch Init.

12/27/19

Daharhlarin eta d Biraharada (BCDa)

1. Percent Moisture (Water Content)

Aliquot ID:

94300-003

12/26/19

Matrix: Soil/Solid

MC191226 DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID. 34300

Dilution

1.0

)-3"

MC191226

Matrix. Soli/Soliu

flethod: EPA 3546/EPA 8082A	Description:	WMU29-SB2-0-3

Q

Result

11

				•				
					Preparation		Analysis	
Parameter(s)	Result (Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDM
2. Aroclor-1221	U	μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDF
3. Aroclor-1232	U	μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDI
4. Aroclor-1242	U	μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDI
5. Aroclor-1248	U	μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDI
6. Aroclor-1254	160 J	J+ μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDI
7. Aroclor-1260	200 J	J+ μg/kg	100	5.0	12/26/19	PS19L26C	01/03/20	SF20A03A RDI
8. Aroclor-1262	U	μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RD
9. Aroclor-1268	U	μg/kg	100	5.0	12/26/19	PS19L26C	12/30/19	SF19L30A RDF



Order: 94300 5 of 35 Page: Date: 01/06/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-SB2-10-11'

Chain of Custody:

181442

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Soil/Solid Collect Time: 10:57

Sample Comments:

Sample Matrix: Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Soil/Solid

Water (Moisture) Content Dried at 105 ± 5°C Method: ASTM D2216-10

94300-004 Aliquot ID: Description: WMU29-SB2-10-11'

						Prepa	ration	Δ	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
† 1 Percent Moisture (Water Content)	10		%	1	1.0	12/26/19	MC191226	12/27/19	MC191226	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-004

Matrix: Soil/Solid

lethod: EPA 3546/EPA 8082A

Description:	WMU29-SB2-10-11'

		,										
						Preparation		Analysis				
Parameter(s)	Result	Q) Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.		
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/27/19	SF19L26A	RDK		
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/27/19	SF19L26A	RDK		
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/27/19	SF19L26A	RDK		
4. Aroclor-1242	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/27/19	SF19L26A	RDK		
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/27/19	SF19L26A	RDK		
6. Aroclor-1254	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/27/19	SF19L26A	RDK		
7. Aroclor-1260	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/27/19	SF19L26A	RDK		
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/27/19	SF19L26A	RDK		
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/26/19	PS19L26C	12/27/19	SF19L26A	RDK		



94300 Order: Page: 6 of 35 Date: 01/06/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU29-SB3-0-3" Sample Description:

Reporting Limit

Chain of Custody:

181442

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix: Soil/Solid Collect Time:

11:01

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Units

%

µg/kg

Result

10

U

Q

Method: ASTM D2216-10

Water (Moisture) Content Dried at 105 ± 5°C

1. Percent Moisture (Water Content)

Aliquot ID: 94300-005 Matrix: Soil/Solid

Description: WMU29-SB3-0-3"

Preparation Analysis P. Date P. Batch A. Date A. Batch Init.

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-005

Matrix: Soil/Solid

MC191226

PS19L26C

12/28/19

12/27/19

MC191226 DB

5.0

Dilution

1.0

Description: WMU29-SB3-0-3"

12/26/19

12/26/19

SF19L28B RDK

Method: EPA 3546/EPA 8082A Parameter(s)

9. Aroclor-1268

Preparation Analysis Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch P. Date Init. U SF19L28B RDK 1. Aroclor-1016 µg/kg 100 5.0 12/26/19 PS19L26C 12/28/19 2. Aroclor-1221 U 100 5.0 12/26/19 PS19L26C 12/28/19 SF19L28B RDK μg/kg 3. Aroclor-1232 U µg/kg 100 5.0 12/26/19 PS19L26C 12/28/19 SF19L28B RDK 4. Aroclor-1242 U μg/kg 100 5.0 12/26/19 PS19L26C 12/28/19 SF19L28B RDK U 5. Aroclor-1248 100 5.0 12/26/19 PS19L26C 12/28/19 SF19L28B RDK μg/kg 6. Aroclor-1254 1200 370 25 PS19L26C 01/03/20 J+ 12/26/19 SF20A03A RDK μg/kg 820 7. Aroclor-1260 J+ µg/kg 100 5.0 12/26/19 PS19L26C 12/28/19 SF19L28B RDK 8. Aroclor-1262 U 100 5.0 PS19L26C 12/28/19 SF19L28B RDK μg/kg 12/26/19

100



Order: 94300 Page: 7 of 35 Date: 01/06/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB3-11-12'

Chain of Custody:

181442

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time:

Preparation

11:08

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

%

µg/kg

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID: 94300-006 Matrix: Soil/Solid

Method: ASTM D2216-10

Description: WMU29-SB3-11-12'

Analysis A. Date A. Batch Init.

Parameter(s) 1. Percent Moisture (Water Content)

‡ 9. Aroclor-1268

Result Q Units 11

Reporting Limit Dilution 1.0

12/26/19

MC191226

PS19L26C

01/03/20

P. Batch

12/27/19

MC191226 DB

SF20A02D RDK

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-006

Description: WMU29-SB3-11-12'

12/26/19

P. Date

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

					Prepa	ration	Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26C	01/03/20	SF20A02D	RDK
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26C	01/03/20	SF20A02D	RDK
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26C	01/03/20	SF20A02D	RDK
4. Aroclor-1242	330		μg/kg	100	5.0	12/26/19	PS19L26C	01/03/20	SF20A02D	RDK
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26C	01/03/20	SF20A02D	RDK
6. Aroclor-1254	480	J+	μg/kg	100	5.0	12/26/19	PS19L26C	01/03/20	SF20A03A	RDK
7. Aroclor-1260	350	J+	μg/kg	100	5.0	12/26/19	PS19L26C	01/03/20	SF20A03A	RDK
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26C	01/03/20	SF20A02D	RDK

100

5.0



Order: 94300 Page: 8 of 35 Date: 01/06/20

Applied Science & Technology, Client Identification:

5-10860

Inc. - Brighton

WMU29-SB4-0-3" Sample Description:

Soil/Solid

Chain of Custody:

181442

11:13

Client Project Name: 5-10860

Sample No:

Collect Date: Collect Time: 12/17/19

Client Project No: Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Sample Matrix:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 94300-007 Matrix: Soil/Solid

Water (Moisture) Content Dried at 105 ± 5°C Method: ASTM D2216-10

Description: WMU29-SB4-0-3"

						Prepa	aration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Percent Moisture (Water Content)	12		%	1	1.0	12/26/19	MC191226	12/27/19	MC191226	DB

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94300-007 Matrix: Soil/Solid Method: EPA 3546/EPA 8082A Description: WMU29-SB4-0-3"

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch P. Date U SF20A03A RDK 1. Aroclor-1016 µg/kg 100 5.0 12/26/19 PS19L26C 01/03/20 2. Aroclor-1221 U μg/kg 100 5.0 12/26/19 PS19L26C 01/03/20 SF20A03A RDK 3. Aroclor-1232 U µg/kg 100 5.0 12/26/19 PS19L26C 01/03/20 SF20A03A RDK 4. Aroclor-1242 U μg/kg 100 5.0 12/26/19 PS19L26C 01/03/20 SF20A03A RDK U 5. Aroclor-1248 100 5.0 12/26/19 PS19L26C 01/03/20 SF20A03A RDK µg/kg 6. Aroclor-1254 U 5.0 PS19L26C 01/03/20 SF20A03A RDK 100 12/26/19 μg/kg 120 7. Aroclor-1260 µg/kg 100 5.0 12/26/19 PS19L26C 01/03/20 SF20A03A RDK 8. Aroclor-1262 U 100 5.0 12/26/19 PS19L26C 01/03/20 SF20A03A RDK μg/kg U 9. Aroclor-1268 µg/kg 100 5.0 12/26/19 PS19L26C 01/03/20 SF20A03A RDK



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB4-11-12'

Chain of Custody:

181442

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 11:19

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Result

10

Q

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Reporting Limit

Aliquot ID: 94300-008 Matrix: Soil/Solid

P. Date

12/26/19

Method: ASTM D2216-10

Water (Moisture) Content Dried at 105 ± 5°C

Description: WMU29-SB4-11-12'

12/27/19

Analysis A. Date A. Batch Init.

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

94300-008

Matrix: Soil/Solid

P. Batch

MC191226

MC191226 DB

Method: EPA 3546/EPA 8082A

Dilution

1.0

Description: WMU29-SB4-11-12'

Preparation

	2000. p. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10										
						Preparation		Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDK	
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDK	
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDK	
4. Aroclor-1242	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDK	
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDK	
6. Aroclor-1254	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDK	
7. Aroclor-1260	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDK	
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDK	
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDK	



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB5-0-3"

Reporting Limit

Chain of Custody:

181442

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

11:23

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94300-009

P. Date

12/26/19

Matrix: Soil/Solid

Method: ASTM D2216-10

Description: WMU29-SB5-0-3"

Dilution

1.0

12/27/19

Analysis A. Date A. Batch Init.

1. Percent Moisture (Water Content)

%

Units

Result

13

Q

MC191226

P. Batch

Preparation

MC191226 DB

Polychlorinated Biphenyls (PCBs) Method: EPA 3546/EPA 8082A

Aliquot ID:

94300-009

Matrix: Soil/Solid

Description: WMU29-SB5-0-3"

Wethod: EPA 3546/EPA 6062A	Description: www.23-365-0-3										
					Preparation		А	nalysis			
Parameter(s)	Result 0	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.			
1. Aroclor-1016	U	μg/kg	380	25	12/26/19	PS19L26D	12/28/19	SF19L28B RDK			
2. Aroclor-1221	U	μg/kg	380	25	12/26/19	PS19L26D	12/28/19	SF19L28B RDK			
3. Aroclor-1232	U	μg/kg	380	25	12/26/19	PS19L26D	12/28/19	SF19L28B RDK			
4. Aroclor-1242	U	μg/kg	380	25	12/26/19	PS19L26D	12/28/19	SF19L28B RDK			
5. Aroclor-1248	U	μg/kg	380	25	12/26/19	PS19L26D	12/28/19	SF19L28B RDK			
6. Aroclor-1254	1700 J	+ μg/kg	380	25	12/26/19	PS19L26D	12/30/19	SF19L30A RDK			
7. Aroclor-1260	1700 J	+ μg/kg	380	25	12/26/19	PS19L26D	12/28/19	SF19L28B RDK			
‡ 8. Aroclor-1262	U	μg/kg	380	25	12/26/19	PS19L26D	12/28/19	SF19L28B RDK			
‡ 9. Aroclor-1268	U	μg/kg	380	25	12/26/19	PS19L26D	12/28/19	SF19L28B RDK			



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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-SB5-10-11'

Chain of Custody:

181442

Client Project Name:

5-10860

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 11:29

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Soil/Solid

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94300-010 Aliquot ID: Description: WMU29-SB5-10-11'

						Prepa	ration	A	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Percent Moisture (Water Content)	11		%	1	1.0	12/26/19	MC191226	12/27/19	MC191226	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-010

Matrix: Soil/Solid

MC191226 DB

Method: FPA 3546/FPA 8082A

Description: WMU29-SR5-10-11

Method: EPA 3546/EPA 8082A	Description: WMU29-585-10-11									
						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.	
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A RDK	
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A RDK	
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A RDK	
4. Aroclor-1242	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A RDK	
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A RDK	
6. Aroclor-1254	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A RDK	
7. Aroclor-1260	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A RDK	
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A RDK	
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A RDK	



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB6-0-3"

Chain of Custody:

181443

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix: Soil/Solid Collect Time:

11:35

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Q

Result

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID: 94300-011 Matrix: Soil/Solid

Description: WMU29-SB6-0-3"

Preparation Analysis Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

1. Percent Moisture (Water Content) MC191226 DB 11 % 1.0 12/26/19 MC191226 12/27/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-011

Matrix: Soil/Solid

Method: FPA 3546/FPA 8082A

Description: WMU29-SB6-0-3"

Method: EPA 3546/EPA 8082A	Description: WMU29-5B6-0-3"									
					Prepa	ration	А	nalysis		
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.		
1. Aroclor-1016	U	μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK		
2. Aroclor-1221	U	μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK		
3. Aroclor-1232	U	μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK		
4. Aroclor-1242	U	μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK		
5. Aroclor-1248	U	μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK		
6. Aroclor-1254	520	J+ μg/kg	100	5.0	12/26/19	PS19L26D	12/30/19	SF19L30A RDK		
7. Aroclor-1260	400 .	J+ μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK		
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK		
‡ 9. Aroclor-1268	U	μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK		



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU29-SB6-11-12' Sample Description:

Chain of Custody:

181443

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860 Sample Matrix:

Result

Result

U

U

10

Q

Soil/Solid Collect Time: 11:40

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Reporting Limit

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94300-012

Matrix: Soil/Solid

Method: ASTM D2216-10

Description: WMU29-SB6-11-12'

Analysis P. Batch A. Date A. Batch Init.

Analysis

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

94300-012

MC191226

P. Batch

MC191226

A. Batch

SF19L26A RDK

DB

Init.

Method: FPA 3546/FPA 8082A

Dilution

1.0

Description: WMU29-SB6-11-12'

P. Date

P. Date

12/26/19

Matrix: Soil/Solid

WELTIOU. EPA 3340/EPA 0002A
Parameter(s)
1. Aroclor-1016
2. Aroclor-1221

Q Units Reporting Limit Dilution µg/kg 100 μg/kg 100 µg/kg 100

5.0 5.0 100 5.0 5.0

5.0

12/26/19 12/26/19 PS19L26D 12/26/19 PS19L26D 12/26/19 PS19L26D

Preparation

Preparation

SF19L26A RDK PS19L26D 12/27/19 12/27/19 SF19L26A RDK 12/27/19 SF19L26A RDK

12/27/19

A. Date

12/27/19

3. Aroclor-1232 U 4. Aroclor-1242 U μg/kg U 5. Aroclor-1248 µg/kg 6. Aroclor-1254 U μg/kg U 7. Aroclor-1260 µg/kg

100 12/26/19 PS19L26D 5.0 100 12/26/19 PS19L26D 100 5.0 12/26/19 PS19L26D 12/26/19

12/27/19 SF19L26A RDK 12/27/19 SF19L26A RDK 12/27/19 SF19L26A RDK

8. Aroclor-1262 U μg/kg 9. Aroclor-1268 U µg/kg 100 5.0 100 5.0

PS19L26D 12/26/19 PS19L26D

12/27/19 SF19L26A RDK 12/27/19 SF19L26A RDK



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB7-0-3"

Reporting Limit

Chain of Custody:

181443

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

09:03

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Result

12

Q

P. Date

12/26/19

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID: 94300-013

Dilution

1.0

Matrix: Soil/Solid

Description: WMU29-SB7-0-3"

Preparation Analysis P. Batch A. Date

12/27/19

A. Batch Init. MC191226 DB

Polychlorinated Biphenyls (PCBs) M-45 - - - EDA 0546/EDA 0000A

1. Percent Moisture (Water Content)

Aliquot ID:

94300-013

Matrix: Soil/Solid

MC191226

WMIIO CD7 0 2"

Method: EPA 3546/EPA 8082A	Description: WMU29-SB7-0-3"										
						Prepa	ration	Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U		μg/kg	1500	100	12/26/19	PS19L26D	01/03/20	SF20A03A	RDK	
2. Aroclor-1221	U		μg/kg	1500	100	12/26/19	PS19L26D	01/03/20	SF20A03A	RDK	
3. Aroclor-1232	U		μg/kg	1500	100	12/26/19	PS19L26D	01/03/20	SF20A03A	RDK	
4. Aroclor-1242	U		μg/kg	1500	100	12/26/19	PS19L26D	01/03/20	SF20A03A	RDK	
5. Aroclor-1248	U		μg/kg	1500	100	12/26/19	PS19L26D	01/03/20	SF20A03A	RDK	
6. Aroclor-1254	7700	J+	μg/kg	1500	100	12/26/19	PS19L26D	01/03/20	SF20A03A	RDK	
7. Aroclor-1260	5000	J+	μg/kg	1500	100	12/26/19	PS19L26D	01/03/20	SF20A03A	RDK	
‡ 8. Aroclor-1262	U		μg/kg	1500	100	12/26/19	PS19L26D	01/03/20	SF20A03A	RDK	
‡ 9. Aroclor-1268	U		μg/kg	1500	100	12/26/19	PS19L26D	01/03/20	SF20A03A	RDK	



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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-SB7-10-11'

Chain of Custody:

181443

09:12

Client Project Name: 5-10860

Sample No:

Collect Date:

12/17/19

Client Project No:

Sample Comments:

5-10860 Sample Matrix:

Soil/Solid Collect Time:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at $105 \pm 5^{\circ}$ C Aliquot ID: 94300-014 Matrix: Soil/Solid

Method: ASTM D2216-10 Description: WMU29-SB7-10-11'

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191226 DB 9 % 1.0 12/26/19 MC191226 12/27/19

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94300-014 Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A Description: WMU29-SB7-10-11'

					Dilution	Preparation		Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit		P. Date	P. Batch	A. Date	A. Batch	lnit.	
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RD	
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDŁ	
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDI	
4. Aroclor-1242	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RD	
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDI	
6. Aroclor-1254	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDI	
7. Aroclor-1260	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDł	
8. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDI	
9. Aroclor-1268	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDI	



Order: 94300 16 of 35 Page: Date: 01/06/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-SB8-0-3"

Reporting Limit

Chain of Custody:

181443

Client Project Name:

5-10860

Sample No:

Collect Date: Collect Time: 12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

09:17

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Q

Result

10

P. Batch

MC191226

Method: ASTM D2216-10

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID: 94300-015 Description: WMU29-SB8-0-3" Matrix: Soil/Solid

Preparation P. Date

12/26/19

Analysis A. Date A. Batch Init. MC191226 DB 12/27/19

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

Dilution

1.0

94300-015

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU29-SB8-0-3"

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q L	Inits	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U	μ	g/kg	370	25	12/26/19	PS19L26D	12/30/19	SF19L30A	RDK
2. Aroclor-1221	U	μ	g/kg	370	25	12/26/19	PS19L26D	12/30/19	SF19L30A	RDK
3. Aroclor-1232	U	μ	g/kg	370	25	12/26/19	PS19L26D	12/30/19	SF19L30A	RDK
4. Aroclor-1242	U	μ	g/kg	370	25	12/26/19	PS19L26D	12/30/19	SF19L30A	RDF
5. Aroclor-1248	U	μ	g/kg	370	25	12/26/19	PS19L26D	12/30/19	SF19L30A	RDF
6. Aroclor-1254	1300	J+ μ	g/kg	370	25	12/26/19	PS19L26D	12/30/19	SF19L30A	RDF
7. Aroclor-1260	1500	J+ μ	g/kg	370	25	12/26/19	PS19L26D	01/03/20	SF20A03A	RDK
8. Aroclor-1262	U	μ	g/kg	370	25	12/26/19	PS19L26D	12/30/19	SF19L30A	RDF
9. Aroclor-1268	U	μ	g/kg	370	25	12/26/19	PS19L26D	12/30/19	SF19L30A	RDF



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB8-9-10'

Chain of Custody:

181443

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860 Sample Matrix:

Result

12

Q

Soil/Solid Collect Time: 09:25

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID: 94300-016 Description: WMU29-SB8-9-10' Matrix: Soil/Solid

Preparation Analysis Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

MC191226

1. Percent Moisture (Water Content)

Aliquot ID:

94300-016

12/27/19

MC191226 DB

Polychlorinated Biphenyls (PCBs) Method: EPA 3546/EPA 8082A

1.0

12/26/19

Matrix: Soil/Solid

Description: WMU29-SB8-9-10'

Method. Li A 3340/Li A 0002A	Description. Wild23-0B0-3-10												
						Prepa	ration	А	nalysis				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.				
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK				
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK				
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK				
4. Aroclor-1242	420		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SC19L27C RDK				
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK				
6. Aroclor-1254	410	J+	μg/kg	100	5.0	12/26/19	PS19L26D	12/30/19	SF19L30A RDK				
7. Aroclor-1260	230	J+	μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK				
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK				
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RDK				



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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-SB9-0-3"

Chain of Custody:

181443

Client Project Name:

5-10860

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 09:29

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94300-017 Aliquot ID: Description: WMU29-SB9-0-3"

Matrix: Soil/Solid

						Prepa	ration	A	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
† 1 Percent Moisture (Water Content)	11		0/_	1	1.0	12/26/10	MC101226	12/27/10	MC101226	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-017

Description: WMU29-SB9-0-3"

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A	

						Prepa	ration	A	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RD
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RD
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RD
4. Aroclor-1242	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RD
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RD
6. Aroclor-1254	420	J+	μg/kg	100	5.0	12/26/19	PS19L26D	12/30/19	SF19L30A RD
7. Aroclor-1260	420	J+	μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RD
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RD
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/28/19	SF19L28B RD



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB9-9-10'

Chain of Custody:

181443

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 09:40

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Result

14

Q

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 94300-018 Matrix: Soil/Solid

P. Date

12/26/19

Method: ASTM D2216-10

Water (Moisture) Content Dried at 105 ± 5°C

Reporting Limit

Description: WMU29-SB9-9-10'

Preparation

Analysis P. Batch A. Date A. Batch

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

Dilution

1.0

94300-018

MC191226

12/27/19

MC191226 DB

Init.

Method: EPA 3546/EPA 8082A

Description: WMU29-SB9-9-10'

Matrix: Soil/Solid

Wethod: EPA 3546/EPA 6062A	Description: WWI029-359-9-10												
						Prepa	ration	А	nalysis				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch In				
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/29/19	SF19L28B RI				
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/29/19	SF19L28B RI				
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/29/19	SF19L28B RI				
4. Aroclor-1242	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/29/19	SF19L28B RI				
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/29/19	SF19L28B RI				
6. Aroclor-1254	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/29/19	SF19L28B RI				
7. Aroclor-1260	270		μg/kg	100	5.0	12/26/19	PS19L26D	12/29/19	SF19L28B RI				
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/29/19	SF19L28B RI				
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/29/19	SF19L28B RI				



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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-SB10-0-3"

Chain of Custody:

181443

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Water (Moisture) Content Dried at 105 ± 5°C

Sample Matrix:

Soil/Solid

Collect Time: 09:44

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Method: ASTM D2216-10

Aliquot ID: 94300-019 Description: WMU29-SB10-0-3" Matrix: Soil/Solid

Preparation Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date 1. Percent Moisture (Water Content) 12 % 1.0 12/26/19 MC191226 12/27/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-019

Analysis

A. Batch

MC191226 DB

Init.

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A Description: WMU29-SB10-0-3"

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDK
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDŁ
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDŁ
4. Aroclor-1242	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDŁ
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RD
6. Aroclor-1254	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDŁ
7. Aroclor-1260	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDŁ
\$. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDŁ
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/26/19	PS19L26D	12/27/19	SF19L26A	RDF



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB10-10-11'

Chain of Custody:

181443

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix: Soil/Solid Collect Time:

09:51

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

µg/kg

Definitions:

Parameter(s)

‡ 9. Aroclor-1268

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Reporting Limit

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

Dilution

1.0

94300-020

P. Date

12/26/19

Preparation

Matrix: Soil/Solid

Method: ASTM D2216-10

Result

12

Q

Description: WMU29-SB10-10-11'

Analysis A. Date A. Batch Init.

1. Percent Moisture (Water Content)

94300-020

P. Batch

MC191226

PS19L26F

MC191226 DB

SF19L28B RDK

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

Description: WMU29-SB10-10-11

12/26/19

Matrix: Soil/Solid

Method: FPA 3546/FPA 8082A

12/27/19

12/29/19

Wethod: EPA 3546/EPA 8082A	Description: WMU29-SB10-10-11											
						Prepa	ration	Analysis				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.		
1. Aroclor-1016	U		μg/kg	100	5.0	12/26/19	PS19L26F	12/29/19	SF19L28B	RDK		
2. Aroclor-1221	U		μg/kg	100	5.0	12/26/19	PS19L26F	12/29/19	SF19L28B	RDK		
3. Aroclor-1232	U		μg/kg	100	5.0	12/26/19	PS19L26F	12/29/19	SF19L28B	RDK		
4. Aroclor-1242	U		μg/kg	100	5.0	12/26/19	PS19L26F	12/29/19	SF19L28B	RDK		
5. Aroclor-1248	U		μg/kg	100	5.0	12/26/19	PS19L26F	12/29/19	SF19L28B	RDK		
6. Aroclor-1254	U		μg/kg	100	5.0	12/26/19	PS19L26F	12/29/19	SF19L28B	RDK		
7. Aroclor-1260	190		μg/kg	100	5.0	12/26/19	PS19L26F	12/29/19	SF19L28B	RDK		
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/26/19	PS19L26F	12/29/19	SF19L28B	RDK		

100

5.0



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU29-SB11-0-3" Sample Description:

Chain of Custody:

181444

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix: Soil/Solid Collect Time:

09:56

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Parameter(s)

Parameter(s)

1. Aroclor-1016

2. Aroclor-1221

3. Aroclor-1232

4. Aroclor-1242

5. Aroclor-1248

6. Aroclor-1254

7. Aroclor-1260

8. Aroclor-1262

9. Aroclor-1268

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94300-021

Matrix: Soil/Solid

Method: ASTM D2216-10

1. Percent Moisture (Water Content)

Description: WMU29-SB11-0-3"

Q Units

%

Units

µg/kg

μg/kg

µg/kg

μg/kg

µg/kg

μg/kg

µg/kg

μg/kg

µg/kg

Result

Result

U

U

U

U

U

U

U

U

290

Q

9

Reporting Limit

Reporting Limit

100

100

100

100

100

100

100

100

100

5.0

Dilution 1.0

P. Date 12/26/19

12/26/19

Preparation

P. Batch MC191226

Analysis A. Date A. Batch

MC191226 DB

SF19L28B RDK

Init.

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-021

Matrix: Soil/Solid

12/27/19

12/29/19

Method: EPA 3546/EPA 8082A

Description: WMU29-SB11-0-3"

Preparation Analysis Dilution P. Batch A. Date A. Batch P. Date Init. SF19L28B RDK 5.0 12/26/19 PS19L26F 12/29/19 5.0 12/26/19 PS19L26F 12/29/19 SF19L28B RDK 5.0 12/26/19 PS19L26F 12/29/19 SF19L28B RDK 5.0 12/26/19 PS19L26F 12/29/19 SF19L28B RDK 5.0 12/26/19 PS19L26F 12/29/19 SF19L28B RDK 5.0 12/29/19 SF19L28B RDK 12/26/19 PS19L26F 5.0 12/26/19 PS19L26F 12/29/19 SF19L28B RDK 5.0 PS19L26F 12/29/19 SF19L28B RDK 12/26/19

PS19L26F



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB11-10-11'

Reporting Limit

Chain of Custody:

181444

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

5-10860

Sample Matrix: Soil/Solid Collect Time:

10:02

Sample Comments:

Client Project No:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94300-022

P. Date

12/26/19

Preparation

Matrix: Soil/Solid

Method: ASTM D2216-10

Result

12

Q

Description: WMU29-SB11-10-11'

Analysis A. Date A. Batch Init.

1. Percent Moisture (Water Content)

Dilution

1.0

94300-022

P. Batch

MC191226

MC191226 DB

Polychlorinated Biphenyls (PCBs) Method: EPA 3546/EPA 8082A

Aliquot ID:

Matrix: Soil/Solid

12/27/19

Description: WMU29-SB11-10-11'

111011104. 21710040/21710002/1	Boomphon. Winder GETT TO TH												
					Prep	paration		Analysis					
Parameter(s)	Result	Q Uni	ts Reporting Lim	it Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.				
1. Aroclor-1016	U	μg/	kg 100	5.0	12/26/19	PS19L26F	01/03/20	SF20A02D	RDK				
2. Aroclor-1221	U	μg/	kg 100	5.0	12/26/19	PS19L26F	01/03/20	SF20A02D	RDK				
3. Aroclor-1232	U	μg/	kg 100	5.0	12/26/19	PS19L26F	01/03/20	SF20A02D	RDK				
4. Aroclor-1242	280	μg/	kg 100	5.0	12/26/19	PS19L26F	01/03/20	SF20A02D	RDK				
5. Aroclor-1248	U	μg/	kg 100	5.0	12/26/19	PS19L26F	01/03/20	SF20A02D	RDK				
6. Aroclor-1254	370	J+ µg/	kg 100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A	RDK				
7. Aroclor-1260	290	J+ μg/	kg 100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A	RDK				
‡ 8. Aroclor-1262	U	μg/	kg 100	5.0	12/26/19	PS19L26F	01/03/20	SF20A02D	RDK				
‡ 9. Aroclor-1268	U	μg/	kg 100	5.0	12/26/19	PS19L26F	01/03/20	SF20A02D	RDK				



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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-SB12-0-3'

Chain of Custody:

181444

Client Project Name:

5-10860

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix: Soil/Solid Collect Time:

10:06

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

94300-023 Aliquot ID:

Matrix: Soil/Solid

Description: WMU29-SB12-0-3'

Analysis A. Batch Init.

						Lieha	ialion		lialys
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A
1. Percent Moisture (Water Content)	15		%	1	1.0	12/26/19	MC191226	12/27/19	MC

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-023

//C191226 DB

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU29-SB12-0-3'

					Prepa	ration	Δ	nalysis
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/kg	100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
2. Aroclor-1221	U	μg/kg	100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
3. Aroclor-1232	U	μg/kg	100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
4. Aroclor-1242	U	μg/kg	100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
5. Aroclor-1248	U	μg/kg	100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
6. Aroclor-1254	540	J+ μg/kg	100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
7. Aroclor-1260	420	J+ μg/kg	100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
‡ 9. Aroclor-1268	U	μg/kg	100	5.0	12/26/19	PS19L26F	01/03/20	SF20A03A RDK



Order: 94300 Page: 25 of 35 Date: 01/06/20

Applied Science & Technology, Client Identification:

5-10860

Inc. - Brighton

Sample Description: WMU29-SB12-11-12'

Chain of Custody:

181444

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

Soil/Solid

Collect Time: 10:12

Sample Comments:

Sample Matrix: Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID: 94300-024 Matrix: Soil/Solid

Method: ASTM D2216-10

Description: WMU29-SB12-11-12'

Analysis A. Date A. Batch Init.

Parameter(s)

Result Q Units Reporting Limit

%

18

Dilution 1.0

P. Date 12/26/19

Preparation

MC191226

P. Batch

MC191226 DB

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

94300-024

Matrix: Soil/Solid

12/27/19

Method: EPA 3546/EPA 8082A

Description: WMU29-SB12-11-12'

					Prepa	ration	A	nalysis
Parameter(s)	Result C	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/kg	410	25	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
2. Aroclor-1221	U	μg/kg	410	25	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
3. Aroclor-1232	U	μg/kg	410	25	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
4. Aroclor-1242	U	μg/kg	410	25	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
5. Aroclor-1248	U	μg/kg	410	25	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
6. Aroclor-1254	1700	μg/kg	410	25	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
7. Aroclor-1260	U	μg/kg	410	25	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
‡ 8. Aroclor-1262	U	μg/kg	410	25	12/26/19	PS19L26F	01/03/20	SF20A03A RDK
‡ 9. Aroclor-1268	U	μg/kg	410	25	12/26/19	PS19L26F	01/03/20	SF20A03A RDK



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB13-0-3"

Chain of Custody:

181444

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 10:18

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Parameter(s)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Reporting Limit

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94300-025

Matrix: Soil/Solid

Method: ASTM D2216-10

µg/kg

Description: WMU29-SB13-0-3"

Result

Dilution

Preparation P. Date P. Batch Analysis

A. Date

12/29/19

A. Batch Init.

1. Percent Moisture (Water Content)

Q Units 20 %

1.0

12/26/19

12/26/19

12/27/19

MC191226 DB

SF19L28B RDK

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-025

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

9. Aroclor-1268

Description: WMU29-SB13-0-3"

PS19L26F

MC191226

Parameter(s)			Q Units	Reporting Limit	Dilution	Preparation		A	nalysis		
	Result	Q				P. Date	P. Batch	A. Date	A. Batch Init.		
1. Aroclor-1016	U		μg/kg	410	25	12/26/19	PS19L26F	12/29/19	SF19L28B RDK		
2. Aroclor-1221	U		μg/kg	410	25	12/26/19	PS19L26F	12/29/19	SF19L28B RDK		
3. Aroclor-1232	U		μg/kg	410	25	12/26/19	PS19L26F	12/29/19	SF19L28B RDK		
4. Aroclor-1242	U		μg/kg	410	25	12/26/19	PS19L26F	12/29/19	SF19L28B RDK		
5. Aroclor-1248	U		μg/kg	410	25	12/26/19	PS19L26F	12/29/19	SF19L28B RDK		
6. Aroclor-1254	1400	J+	μg/kg	410	25	12/26/19	PS19L26F	12/30/19	SF19L30A RDK		
7. Aroclor-1260	1200	J+	μg/kg	410	25	12/26/19	PS19L26F	12/29/19	SF19L28B RDK		
‡ 8. Aroclor-1262	U		μg/kg	410	25	12/26/19	PS19L26F	12/29/19	SF19L28B RDK		

410

25



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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-SB13-6-7'

Chain of Custody:

181444

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

10:21

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Aliquot ID: 94300-026 Matrix: Soil/Solid

Description: WMU29-SB13-6-7'

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Percent Moisture (Water Content) MC191226 DB 12 % 1.0 12/26/19 MC191226 12/27/19

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-026

Method: EPA 3546/EPA 8082A

Matrix: Soil/Solid

Description: WMU29-SB13-6-7'

Parameter(s)						Preparation		Analysis		
	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.	
1. Aroclor-1016	U		μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDI	
2. Aroclor-1221	U		μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF	
3. Aroclor-1232	U		μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF	
4. Aroclor-1242	210		μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDI	
5. Aroclor-1248	U		μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDI	
6. Aroclor-1254	240		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B TK	
7. Aroclor-1260	U		μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDI	
8. Aroclor-1262	U		μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RD	
9. Aroclor-1268	U		μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF	



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB14-0-3"

Reporting Limit

Soil/Solid

Chain of Custody:

181444

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Collect Time:

10:28

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Definitions:

Parameter(s)

Result

14

Q

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

1. Percent Moisture (Water Content)

Aliquot ID: 94300-027 Description: WMU29-SB14-0-3" Matrix: Soil/Solid

Preparation Analysis Dilution P. Date P. Batch A. Date A. Batch Init. MC191226 DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-027

Matrix: Soil/Solid

MC191226

12/27/19

Method: EPA 3546/EPA 8082A

1.0

12/26/19

Description: WMU29-SB14-0-3"

1110ti 10d. El 7100-10/El 71000E/1	Booking trimozo ob 14 0 0									
						Preparation		А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.	
1. Aroclor-1016	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B TKT	
2. Aroclor-1221	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B TKT	
3. Aroclor-1232	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B TKT	
4. Aroclor-1242	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B TKT	
5. Aroclor-1248	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B TKT	
6. Aroclor-1254	580	J+	μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B TKT	
7. Aroclor-1260	460	J+	μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B TKT	
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B TKT	
‡ 9. Aroclor-1268	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B TKT	



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB14-10-11'

Chain of Custody:

181444

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

Collect Time:

10:34

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

%

µg/kg

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94300-028

Matrix: Soil/Solid

Method: ASTM D2216-10

Description: WMU29-SB14-10-11'

‡ 9. Aroclor-1268

Parameter(s) Result Q Units

16

Reporting Limit Dilution

P. Date 12/26/19

Preparation

P. Batch MC191226

PS19L27D

Analysis A. Date A. Batch

12/27/19

01/04/20

Init. MC191226 DB

SF20A04B TKT

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

94300-028

1.0

12/27/19

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A	Description: WMU29-SB14-10-11'									
Parameter(s)						Preparation		Analysis		
	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT
2. Aroclor-1221	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT
3. Aroclor-1232	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT
4. Aroclor-1242	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT
5. Aroclor-1248	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT
6. Aroclor-1254	870	J+	μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT
7. Aroclor-1260	1000	J+	μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT
‡ 8. Aroclor-1262	U		μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT

100

5.0



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU29-SB15-0-3" Sample Description:

Chain of Custody:

181444

Client Project Name: 5-10860

Sample No:

Collect Date:

12/17/19

5-10860 Sample Matrix:

8

U

U

Soil/Solid Collect Time: 11:49

Sample Comments:

Client Project No:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

%

μg/kg

µg/kg

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 94300-029 Matrix: Soil/Solid

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

Description: WMU29-SB15-0-3"

12/27/19

01/03/20

01/03/20

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

94300-029

MC191226

PS19L27D

PS19L27D

MC191226 DB

SF20A03A RDK

SF20A03A RDK

Description: WMU29-SB15-0-3"

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

8. Aroclor-1262

9. Aroclor-1268

5000

5000

1.0

12/27/19

12/27/19

12/26/19

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch P. Date Init. U SF20A03A RDK 1. Aroclor-1016 µg/kg 72000 5000 12/27/19 PS19L27D 01/03/20 2. Aroclor-1221 U 72000 5000 12/27/19 PS19L27D 01/03/20 SF20A03A RDK μg/kg 3. Aroclor-1232 U µg/kg 72000 5000 12/27/19 PS19L27D 01/03/20 SF20A03A RDK 4. Aroclor-1242 U μg/kg 72000 5000 12/27/19 PS19L27D 01/03/20 SF20A03A RDK U 5. Aroclor-1248 72000 5000 12/27/19 PS19L27D 01/03/20 SF20A03A RDK μg/kg 6. Aroclor-1254 1800000 360000 25000 01/06/20 SF20A06A TKT J+ 12/27/19 PS19L27D μg/kg 400000 7. Aroclor-1260 J+ µg/kg 72000 5000 12/27/19 PS19L27D 01/03/20 SF20A03A RDK

72000

72000

DCSID: G-610.19 (10/01/19)



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Applied Science & Technology, Client Identification:

Inc. - Brighton

WMU29-SB15-6-7 Sample Description:

Reporting Limit

Chain of Custody:

181444

Client Project Name: 5-10860

Sample No:

Result

Result

U

U

U

U

U

150

U

U

U

6

Q

Q

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time:

P. Date

12/26/19

12/27/19

11:54

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Units

%

Units

µg/kg

μg/kg

µg/kg

μg/kg

µg/kg

μg/kg

µg/kg

μg/kg

µg/kg

Definitions:

Parameter(s)

Parameter(s)

1. Aroclor-1016

2. Aroclor-1221

3. Aroclor-1232

4. Aroclor-1242

5. Aroclor-1248

6. Aroclor-1254

7. Aroclor-1260

8. Aroclor-1262

9. Aroclor-1268

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Method: ASTM D2216-10

1. Percent Moisture (Water Content)

Aliquot ID: 94300-030

Dilution

1.0

Matrix: Soil/Solid

Description: WMU29-SB15-6-7

Preparation Analysis P. Batch A. Date

A. Batch Init. 12/27/19 MC191226 DB

SF20A04B TKT

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

100

5.0

94300-030

Matrix: Soil/Solid

MC191226

Method: EPA 3546/EPA 8082A

Description: WMU29-SB15-6-7

Preparation Analysis Reporting Limit Dilution P. Batch A. Date A. Batch P. Date Init. 100 5.0 12/27/19 PS19L27D 01/04/20 SF20A04B TKT 100 5.0 12/27/19 PS19L27D 01/04/20 SF20A04B TKT 100 5.0 12/27/19 PS19L27D 01/04/20 SF20A04B TKT 100 5.0 12/27/19 PS19L27D 01/04/20 SF20A04B TKT 100 5.0 12/27/19 PS19L27D 01/04/20 SF20A04B TKT 5.0 01/04/20 SF20A04B TKT 100 12/27/19 PS19L27D 100 5.0 12/27/19 PS19L27D 01/04/20 SF20A04B TKT 100 5.0 PS19L27D 01/04/20 SF20A04B TKT 12/27/19

PS19L27D

01/04/20



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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB16-0-3"

Chain of Custody:

181445

Client Project Name:

5-10860

Sample No:

Collect Date: Collect Time: 12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid

12:07

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94300-031

Matrix: Soil/Solid

Method: ASTM D2216-10

Description: WMU29-SB16-0-3"

Parameter(s)

‡ 9. Aroclor-1268

Q Units

%

µg/kg

Result

7

U

Reporting Limit Dilution 1.0

P. Date 12/26/19

Preparation

P. Batch MC191226

Analysis A. Date A. Batch

Init. MC191226 DB

SF20A04B TKT

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

94300-031

Matrix: Soil/Solid

12/27/19

01/04/20

M-45 - - - EDA 0546/EDA 0000A

WMIIO CD16 0 2

12/27/19

PS19L27D

Method: EPA 3546/EPA 8082A	Description: WMU29-SB16-0-3"									
Parameter(s)					Preparation		Analysis			
	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U	μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT	
2. Aroclor-1221	U	μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT	
3. Aroclor-1232	U	μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT	
4. Aroclor-1242	U	μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT	
5. Aroclor-1248	U	μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT	
6. Aroclor-1254	270	J+ μg/kg	100	5.0	12/27/19	PS19L27D	01/06/20	SF20A06A	TKT	
7. Aroclor-1260	210	J+ μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT	
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/27/19	PS19L27D	01/04/20	SF20A04B	TKT	

100

5.0



Analytical Laboratory Report Laboratory Project Number: 94300 Laboratory Sample Number: 94300-032

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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: WMU29-SB16-6-7'

Chain of Custody:

181445

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: 12:13

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

%

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94300-032

Matrix: Soil/Solid

Method: ASTM D2216-10

8

Description: WMU29-SB16-6-7'

Analysis

Result Q Units

Reporting Limit Dilution

P. Date 12/26/19

P. Batch MC191226 A. Batch

A. Date

12/27/19

MC191226 DB

Init.

Polychlorinated Biphenyls (PCBs)

1. Percent Moisture (Water Content)

Aliquot ID:

94300-032

Matrix: Soil/Solid

1.0

Preparation

Method: EPA 3546/EPA 8082A

Parameter(s)

Description: WMU29-SB16-6-7'

					Prepa	ration	A	nalysis	
Parameter(s)	Result C	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C	RDK
2. Aroclor-1221	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C	RDK
3. Aroclor-1232	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C	RDK
4. Aroclor-1242	190	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C	RDK
5. Aroclor-1248	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C	RDK
6. Aroclor-1254	240 J	+ μg/kg	100	5.0	12/27/19	PS19L27D	12/30/19	SF19L30A	RDK
7. Aroclor-1260	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C	RDK
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C	RDK
‡ 9. Aroclor-1268	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C	RDK



Analytical Laboratory Report Laboratory Project Number: 94300 Laboratory Sample Number: 94300-033

Order: 94300 34 of 35 Page: Date: 01/06/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: WMU29-Dup 1 Chain of Custody:

181445

5-10860 Client Project Name:

Sample No:

Collect Date:

12/17/19

Client Project No:

5-10860

Sample Matrix:

Soil/Solid Collect Time: NA

Sample Comments:

Soil results have been calculated and reported on a dry weight basis unless otherwise noted.

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C

Aliquot ID:

94300-033

Matrix: Soil/Solid

Method: ASTM D2216-10

Description: WMU29-Dup 1

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1 Percent Moisture (Water Content)	11		%	1	1.0	12/26/19	MC191226	12/27/19	MC191226	DB

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94300-033

Matrix: Soil/Solid

Method: EPA 3546/EPA 8082A

Description: WMU29-Dup 1

					Prepa	ration	A	nalysis
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF
2. Aroclor-1221	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF
3. Aroclor-1232	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF
4. Aroclor-1242	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF
5. Aroclor-1248	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF
6. Aroclor-1254	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF
7. Aroclor-1260	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF
‡ 8. Aroclor-1262	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF
‡ 9. Aroclor-1268	U	μg/kg	100	5.0	12/27/19	PS19L27D	12/28/19	SC19L27C RDF

RSN: 94300-200106171646



Analytical Laboratory Report Laboratory Project Number: 94300

Order: 94300 Page: 35 of 35 Date: 01/06/20

Definitions/ Qualifiers:

- A: Spike recovery or precision unusable due to dilution.
- B: The analyte was detected in the associated method blank.
- E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J: The concentration is an estimated value.
- M: Modified Method
- **U:** The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

J+ : The result is an estimated quantity, but the result may be biased high.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)



1914 Holloway Drive Holt, MI 48842

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Geoprobe

11766 E. Grand River Rd. Brighton, MI 48116

Phone: 810 220 3300 Fax: 810 220 3311 181442
PAGE 1 of 4

Chain of Custody #

ASTI Environmental Matrix Code Deliverables Client Name: **PARAMETERS** GW Ground Water Level 2 Contact Person: Greg Oslosky Level 3 Project Name/ Number: SW Surface Water 5-10860 O Oil ww Waste Water Level 4 HOLD SAMPLE x Other: Specify EDD Wipe # OF CONTAINERS gos lasky @asti -env.com Purchase Order# Remarks: Sample # Client Sample Descriptor Date Time WMUZ9-5BI- 0-3" 12-17-19 1040 WMUZ9-5B1- 10-11' 1045 WMUZ9-5BZ-0-3" 1052 1057 WMUZ9-5B2 - 10-11' WMUZ9-583-0-34 1101 WMU Z9-5B3- 11-12' 1108 WMUZ9-5B4-0-311 1113 WMUZ9-584- 11-12' 1119 1123 WMUZ9-5B5- 0-3" WMUZ9-5B5-10-111 1129 Comments: Received By: Date/Time Sampled/Relinquished By: 12-17-19 Date/ Time LAB USE ONLY Received _4 bus, days Fibertec project number: 2 bus, days _____3 bus. days 94300 On Ice 5-7 bus. days (standard) Temperature upon receipt at Lab: Other (specify time/date requirement):

Please see back for terms and conditions



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0388

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email: asbestos@fibertecihs.com

Geoprobe

11766 E. Grand River Rd. Brighton, MI 48116

Phone: 810 220 3300 Fax: 810 220 3311 Chain of Custody #

181443

Client Nam	e: 45	TI	Environmental					PAF	AMETERS			Matrix Code	Deliverables
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	917	/	WMUZ9-588-0-3"										
	925		WMUZ9-5B8-9-101								1		
	929		WMUZ9-5B9-0-3"										
	940		WMU 29 - 5B9 - 9-101								M		
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1914 Holloway Drive Holt, MI 48842

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email: asbestos@fibertecihs.com

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Phone: 810 220 3300 Fax: 810 220 3311 Chain of Custody #

181444

Client Nam	ne: <i>A5</i>	TI	Environmental					F	PARAMET	ERS			Matrix Code	Э	Deliverables
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Geoprobe

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Phone: 810 220 3300 Fax: 810 220 3311 Chain of Custody # 181445

Client Name: ASTI Environmental					PARAM	AETERS .			Matrix Co	de	Deliverables
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ASTI ENVIRONMENTAL

ENVIRONMENTAL INVESTIGATION, REMEDIATION, COMPLIANCE AND RESTORATION PROJECTS THROUGHOUT THE GREAT LAKES SINCE 1985.

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- HAZARD MITIGATION PLANNING
- MINING AND RECLAMATION ASSISTANCE
- REMEDIATION IMPLEMENTATION, OPERATION AND MAINTENANCE
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- REGULATORY COMPLIANCE AND PERMITTING
- Soil and Groundwater Assessments
- Soil and Groundwater Remediation
- STORAGE TANK COMPLIANCE AND CLOSURE
- THREATENED AND ENDANGERED SPECIES SURVEYS
- WATERSHED AND STORMWATER MANAGEMENT PROGRAMS
- WETLAND DELINEATION, PERMITTING, MITIGATION AND BANKING



Attachment F

WMU-3-Surface Soil Lead Investigation – Revision 1

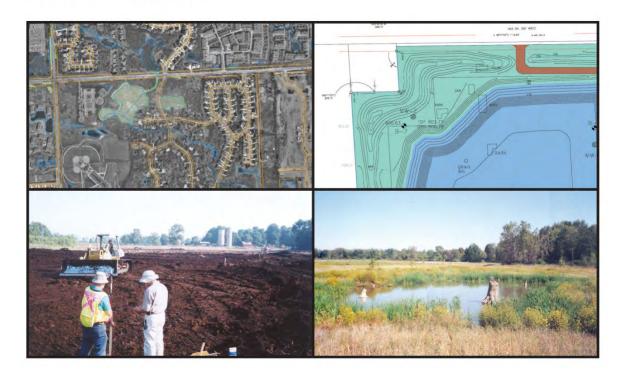
Waste Management Unit 30 Surface Soil Lead Investigation Revision 1

18251 West Jefferson Avenue Riverview, Michigan

Riverview-Trenton Railroad Company

March 29, 2021

ASTI ENVIRONMENTAL





Waste Management Unit 30 Surface Soil Lead Investigation Revision 1

18251 West Jefferson Avenue Riverview, Michigan

March 29, 2021

Prepared For:

Riverview-Trenton Railroad Company 12225 Stephens Road Warren, Michigan 48089

Report Prepared By:

ASTI Environmental 10448 Citation Drive, Suite 100 Brighton, Michigan 48116 (810) 225-2800

ASTI Project No. 10860

Report Prepared by:

Greg S. Oslosky, P.G.

Director - Grand Rapids Office

Report Reviewed by:

Allison J. Rogowski, EP

Staff Scientist



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 1.0 Introduction 2.0 Subject Property Background 3.0 Waste Management Unit 30 Background 4.0 WMU-30 Closure Activities 4.1 Surface Soil Lead Investigation 4.2 Lead Analytical Results in Surface Soil 5.0 Measures to Prevent Unacceptable Human Exposure to Lead 6.0 Summary 7.0 RCRA Certification Statement 						
<u>Attacl</u>	nments					
Tabl	es-	Table 1 – Summary of Soil Analytical Results for Lead, November 1996 Table 2 – Summary of Soil Analytical Results for Lead, February 1997 Table 3 – Summary of Soil Analytical Results for Lead, Background Soil Samples				
Atta	chment A -	Figures Figure 1 - Site Location Map Figure 2 - RTRR Site Features Map Figure 3 - WMU-30 Soil Sample Location Map				
Attachment B -		Final Closure Report and Certification – Interim Status Hazardous Waste Storage Unit, Techna Corporation, March 31, 1998				



Waste Management Unit 30 Surface Soil Lead Investigation Revision 1 Riverview-Trenton Railroad Company Former McLouth Steel Site 18251 West Jefferson Avenue Riverview, Michigan

1.0 Introduction

In accordance with the Corrective Action Consent Order ("CACO") dated November 1, 2018 between the Riverview-Trenton Rail Road Company ("RTRR") and the Michigan Department of Environment, Great Lakes, and Energy ("EGLE"), ASTI Environmental ("ASTI") is providing this lead investigation summary for a portion of the property located at 18251 West Jefferson Avenue in the City of Riverview, Wayne County, Michigan ("Subject Property"). The Subject Property lies east of West Jefferson Avenue, south of West Jefferson Avenue, and Monguagon Creek, west of the Trenton Channel of the Detroit River and, north of the former McLouth Steel Facility. The portion of the Subject Property which lies south of Sibley Road, is located in the City of Trenton. A Site Location Map is provided as Figure 1 included in Attachment A. ASTI completed this report in accordance with item number seven within the Statement of Work included as Attachment A of the CACO for the Subject Property and with the Work Plan – Waste Management Unit Investigations prepared by ASTI dated June 28, 2019 ("Work Plan").

This report summarizes investigations, completed by others for the former Electronic Arc Furnace ("EAF") Dust Pile, also known as Waste Management Unit 30 ("WMU-30"). Attachment A of this report includes Figure 1 – Site Location Map and Figure 2 – Site Features Map. ASTI reviewed investigations completed by others to determine the extent of lead impacts in surface soil at concentrations exceeding the current Generic Nonresidential Cleanup Criteria ("GNRCC") for Direct Contact ("DC") of 900 milligrams per kilogram ("mg/kg" or parts per million). ASTI did not collect additional data for the purpose of this investigation.

2.0 Subject Property Background

The McLouth Steel Company ("McLouth") acquired the Subject Property between 1956 and 1961, and used portions of it for storage of raw materials, waste, and product to support the integrated production of steel and iron in the production facility located to the south ("McLouth Facility"). A large slag processing operation, operated by E. C. Levy Company, was also located on the Subject Property. Historically, the Subject Property included the Monguagon Creek channel, which flowed from the north to south and bisected the Subject Property, an oil storage terminal, and a large building with docking facilities. By 1961, the large building and oil terminal had been demolished and the Monguagon Creek channel had been rerouted along River Road where it currently empties into the Trenton Channel northeast of the Subject Property (Figure 2). By 1967, the original channel and mouth area of Monguagon Creek had been filled completely and this area was used for storage of equipment and materials (ore, debris, and scrap)¹.

¹ North Area Characterization Plan, Revised, ESC, November 2, 2000.





After about 1975, steel production decreased until McLouth ceased operations in April of 1996 after filing for Chapter 11 bankruptcy protection on September 29, 1995. At that time, only one blast furnace was operational and most other production units were operating at significantly reduced capacities.

Hamlin Holdings, Inc. acquired the Subject Property in July of 1996, although it is unclear what was conducted on the Subject Property during that time. Detroit Steel Company ("DSC") obtained title for the Subject Property in August of 1996 and used it for storage and conducted removal activities. DSC resumed pickling of strip steel at the McLouth Facility in July 1998. In support of the pickling operations, DSC started the scrubber, Central Wastewater Treatment Plant, and the pH adjustment station at the McLouth Facility. Those operations closed in 2005. Crown Enterprises purchased the Subject Property on June 2, 2000 and conveyed the property to RTRR in November of 2000.

3.0 Waste Management Unit 30 Background

McLouth Steel used both basic oxygen furnaces ("BOF") and EAF for production. The waste emission control dust generated from the EAF air pollution control systems was designated as a listed hazardous waste (K061) under the Resource Conservation and Recovery Act ("RCRA"). Sludge was accumulated in a concrete sump and transferred to the interim status EAF Dust Pile storage area. McLouth filed a notification of waste activity and a RCRA Part A permit on November 17, 1980 for storage of EAF dust prior to treatment or disposal. The unit was classified as an Interim Status Hazardous Waste Storage Unit in McLouth's 1980 Part A permit application. WMU-30 was a roughly 25,000 square feet area with an earthen berm built on top of the fill that covers most of the Subject Property. Figure 3 - WMU-30 Soil Sample Location Map, depicts the WMU-30 area.

Part B of McLouth's RCRA storage permit application was called in by the United States Environmental Protection Agency ("USEPA") in 1984. McLouth made various submissions, resulting in a final RCRA/Act 64 permit application dated February 27, 1988. After rejection of that permit, McLouth decided to close the EAF Dust Pile and accumulate EAF dust for no longer than 90 days².

McLouth operated the waste management unit continuously until early 1989, when new concrete accumulation tanks (WMU-31) were constructed and placed into use. Final removal of waste took place in 1991. Approximately 980 tons of EAF dust were transported to Horsehead Resource Development Company in Palmerton, Pennsylvania.

4.0 WMU-30 Closure Activities

McLouth prepared the EAF Dust Pile Closure Plan ("Closure Plan") in August 1988 and revised the Closure Plan in response to comments by EGLE (then known as the Michigan Department of Natural Resources). The revised Closure Plan was approved on October 31, 1988 with a stipulation which required a hydrogeological investigation. The hydrogeological investigation plan was approved by EGLE (then known as the Michigan Department of Environmental Quality) on October 17, 1995.

² Final Closure Report and Certification – Interim Status Hazardous Waste Storage Unit, Techna Corporation, March 31, 1998.



In 1991, McLouth initiated closure activities in accordance with the revised Closure Plan through removal of residual waste material from the EAF Dust Storage pile area. McLouth did not complete any other closure activities prior to termination of operations in 1996. DSC resumed closure activities in the fall of 1996 and completed those activities in late 1997.

Closure activities were conducted in accordance with the revised Closure Plan and the Hydrogeological Investigation Plan. The closure activities consisted of the following:

- Final removal of waste,
- Soil assessment,
- Groundwater assessment, and
- Final Closure Report and Certification.

Final waste removal activities were completed by McLouth between September 23, 1991 and November 13, 1991. Clayton Environmental Consultants, Inc. ("Clayton") completed the initial soil sampling, supplemental soil sampling, and Soil Assessment Report and Certification between February 1997 and August 1997.

The hydrogeological investigation began on October 30, 1996 with the installation of five groundwater monitoring wells: three upgradient of WMU-30 and two downgradient of WMU-30. Four consecutive quarters of groundwater sampling and analysis began in November 1996 and were completed in August 1997. Groundwater analytical results from downgradient wells were compared to results from upgradient wells to determine if the EAF Dust Storage Pile impacted groundwater. Laboratory analytical results for the downgradient wells showed that the EAF Dust Storage Pile did not impact groundwater. The Final Closure Report provides details of the geology and hydrogeology of the WMU-30 area.

The Final Closure Report and Certification – Interim Status Hazardous Waste Storage Unit ("Final Closure Report") prepared by Techna Corporation ("Techna") in March 1998 provides detail about the assessment and closure activities. The Final Closure Report is included as Attachment B. The following sections provide a summary of the surface soil investigation activities and analytical results.

4.1 Surface Soil Lead Investigation

In November 1996, Clayton collected soil samples in accordance with the approved Closure Plan. The sample collection grid was developed in the 1988 closure plan based on a waste pile with dimensions differing from the bermed area depicted in Figure 3. The original grid and pile are shown in in the Closure Plan, which is included in Appendix B. The Final Closure Report and Certification developed by Techna provided an overlay of the original grid area on the bermed waste storage pile. The soil samples were analyzed for barium, cadmium, chromium, lead, and pH. Clayton collected soil samples within and adjacent to WMU-30 to assess soil and outside of the WMU-30 area to determine soil background concentrations.

In accordance with the CACO, this report describes the previous soil assessment activities to determine if surface soil lead impacts resulting from the WMU-30 storage pile have been delineated with respect to the current GNRCC for DC (900 mg/kg). Soil samples were collected from the 50-foot grid system presented in the Closure Plan. Details of the sample



collection process are included in the Final Closure Report and Certification included as Attachment B. Figure 3 – WMU-30 Soil Sample Location Map (Attachment A) depicts the locations of the samples collected in November 1996 and February 1997. Figure 3 shows the WMU-30 area including sample collection locations.

The impacted area was not fully delineated based on the November 1996 sampling event. Therefore, Clayton collected additional soil samples in February 1997 to define the extent of impacts. Details of the sampling process are included in the Final Closure Report (Attachment B) and the sample locations are included in Figure 3 (Attachment A).

4.2 Lead Analytical Results in Surface Soil

The laboratory analytical results from the November 1996 and February 1997 soil investigations conducted by Clayton are summarized in Table 1 and Table 2, respectively. Table 3 provides a summary the lead analytical results for the background soil samples collected during closure activities. Figure 3 depicts the locations of the soil samples and the locations with lead concentrations in exceedance of the current GNRCC for DC (900 mg/kg). As shown on Figure 3, surface soil from sample locations A2, B2, C2, D1, D2, D6, E1, and F4, collected in November 1996, contained lead concentrations exceeding the current GNRCC for DC. Based on the November 1996 surface soil results, lead was not delineated south of A2, east of D1 and E1, west of D6, or north of E1 and F4. Lead impacts were delineated to the west of A2, B2, C2, D2, and E1 based on samples collected from the west-neighboring grids during the same sampling event. Sample E2 provided delineation north of the impacts detected at D2.

The locations of the surface soil samples collected in February 1997 were chosen to delineate the area of impact as defined by the November 1996 sampling event. The surface soil sample designated as A2-South did not contain a lead concentration exceeding the current GNRCC for DC and therefore provided delineation of surface soil lead impacts at the southern extent of WMU-30. Surface soil samples D1-East and E1-East did not contain lead at concentrations exceeding the current GNRCC for DC and therefore provided delineation of surface soil lead impacts at the eastern extent of WMU-30. The surface soil sample collected within the F1 grid did not contain lead at a concentration exceeding the current GNRCC for DC and therefore provided delineation to the north of E1. The surface soil sample collected at the D7 location did not contain lead at a concentration exceeding the current GNRCC for DC and therefore provided the western delineation of surface soil lead impacts in the WMU-30 area. The concrete pad for WMU-31 provides a barrier to direct contact of surface soil north of D6 and west of F4.

Sample G2 (Figure 3) was collected during the February 1997 sampling event at the northern extent of the proposed grid area. Surface soil in the sample collected from the G2 location (G2 Surface) contained a lead concentration below the current GNRCC for DC. However, the duplicate sample from this location (G2 Surface Duplicate) contained a lead concentration of 990 mg/kg, which exceeds the current GNRCC for DC. Table 2 provides a summary of the lead analytical data for the February 1997 sampling event.

Techna collected additional background in July 1997. Sample TBG-A was collected approximately 50 feet north of G2 and contained a surface soil lead concentration of 41.3 mg/kg. Sample TBG-A provided delineation of the northern extent of the surface soil lead impact defined by the G2 location (Figure 3).



The purpose of this investigation is to evaluate lead concentrations in surface soil; however, the background sample collected from the location TBG-E in the interval between three feet to four feet below ground surface (bgs) contained a lead concentration of 1,100 mg/kg which exceeds the GNRCC for DC. The sample collected from the same location in the interval between one foot and two feet bgs contained a lead concentration of 612 mg/kg which is below the GNRCC for DC. Table 3 provides a summary of the lead analytical data for the background samples.

Based on surface soil samples collected in November 1996, February 1997, and July 1997, lead impacts in exceedance of the current GNRCC for DC were delineated for the WMW-30 waste storage area, as defined by the waste pile and bermed area. Three additional surface soil lead impacts were also discovered outside of the bermed waste area (D6, F4, and G2) and sampling conducted in February 1997, July 1997, and the background samples provided delineation of those areas.

5.0 Measures to Prevent Unacceptable Human Exposure to Lead

Historical soil investigations have delineated lead in surface soil at the former EAF Dust Storage Pile location. These samples also exceed the GNRCC for Drinking Water; however, groundwater at the Subject Property is not currently used for drinking water and will not be used in the future for consumption. Therefore, the Non-residential Drinking Water pathway is not complete. Each of the surface soil samples collected during the WMU-30 investigation contained lead concentrations below the GNRCC for Particulate Soil Inhalation of 44,000 mg/kg.

The lead concentrations in surface soil in the WMU-30 area present an unacceptable risk to human health via direct contact with surface soils. Options to prevent unacceptable human exposure to lead in surface soils include placement of a low-permeability soil cap or paving over the impacted area depicted in Figure 3. A soil cap would consist of clay soil, graded to induce surface runoff and prevent surface water leaching into the subsurface. Paving would include covering the impacted surface soil with concrete or asphalt to restrict direct contact with the soil and prevent surface water from infiltrating through the impacted surface soil. Routine inspections would be required for a soil or pavement cap to ensure that the cap is functioning properly. The cap would be inspected for cracking, vegetation growth (soil cap), and/or other signs that the cap is not functioning as intended. Reports detailing the results of each inspection would also be required.

Aa restrictive covenant would be required after placement of a cap (soil or pavement) to maintain and prevent removal of the cap. The covenant would also restrict installation of wells for consumptive use of groundwater.

6.0 Summary

WMU-30 was formerly used for storage of EAF Dust created from the steel-making process at the former McLouth Steel Facility located in Trenton, Michigan. EAF dust was stored in the WMU-30 area between 1980 until final removal of waste in 1991. Approximately 980 tons of EAF dust waste (K061) was transported offsite for proper disposal.



In accordance with the CACO dated November 1, 2018, ASTI reviewed data collected during previous investigations conducted by others. ASTI did not collect additional data for the purpose of delineating lead in surface soil in the WMU-30 area. Clayton investigated surface soil in November 1996 and delineation soil sampling in February 1997. The samples collected in February 1997 provided delineation of lead in surface soil in the WMW-30 area with one exception (G2). Additional background samples were collected in July 1997 and provided delineation of the GNRCC DC exceedance in G2. Exceedances of the GNRCC for DC are depicted in the shaded area of Figure 3.

Due to the presence of lead in surface soil in exceedance of the GNRCC for DC, measures are required to restrict direct contact to surface soil with lead concentrations exceeding 900 mg/kg. Likely measures include placement of a low-permeability cap (soil or pavement).

7.0 RCRA Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Greg S. Oslosky, P.G.

Director - Grand Rapids

Tables

Waste Management Unit 30 Surface Soil Investigation

Table 1
Summary of Soil Laboratory Analytical Results - Lead
Clayton, November 6 and 7, 1996
WMU-30, RTRR - Riverview
18251 West Jefferson Ave., Riverview, MI

ASTI Project Number: 10860

Sample Identification and Depth	Units	Lead
A1 (Surface)	mg/kg ⁽¹⁾	884
A1 (2')	mg/kg	739
A2 (Surface)	mg/kg	7,400
A2 (2')	mg/kg	<20
A3 (Surface)	mg/kg	<50
A3 (1')	mg/kg	<50
A4 (Surface)	mg/kg	620
A4(2')	mg/kg	110
BI (Surface)	mg/kg	860
B1 (2')	mg/kg	<50
B1 (2') Duplicate	mg/kg	<50
B2 (Surface)	mg/kg	7,200
B2 (2')	mg/kg	7,200
B3 (Surface)	mg/kg	330
B3 (2')	mg/kg	<50
B4 (Surface)	mg/kg	880
B4 (2')	mg/kg	150
B5 (Surface)	mg/kg	<50
B5 (2')	mg/kg	<50
CI (Surface)	mg/kg	120
C1 (Surface) Duplicate	mg/kg	180
C1 (2')	mg/kg	110
C2 (Surface)	mg/kg	1,300
C2 (2')	mg/kg	130
C3 (Surface)	mg/kg	220
C3 (2')	mg/kg	<20
C4 (Surface)	mg/kg	320
C4 (2')	mg/kg	<50
C5 (Surface)	mg/kg	430
C5 (2')	mg/kg	<20
D1 (Surface)	mg/kg	1,100
D1 (2')	mg/kg	<50
D1 (2') Duplicate	mg/kg	<50
D2 (Surface)	mg/kg	1,400
D2 (1')	mg/kg	230
D3 (Surface)	mg/kg	510
D3 (2')	mg/kg	<50
D4 (Surface)	mg/kg	560
D4 (2')	mg/kg	<50
D5 (Surface)	mg/kg	620
D5 (2')	mg/kg	<50
D6 (Surface)	mg/kg	1,700
D6 (Surface) Duplicate	mg/kg	1,800
D6 (2')	mg/kg	<50

Table 1 Summary of Soil Laboratory Analytical Results - Lead Clayton, November 6 and 7, 1996 WMU-30, RTRR - Riverview

18251 West Jefferson Ave., Riverview, MI

ASTI Project Number: 10860

E1 (Surface)	mg/kg	2,900
E1 (2')	mg/kg	<20
E2 (Surface)	mg/kg	440
E2 (2')	mg/kg	95
E3 (Surface)	mg/kg	630
E3 (2')	mg/kg	94
E4 (Surface)	mg/kg	690
E4(2')	mg/kg	<20
F2 (Surface)	mg/kg	780
F2 (2')	mg/kg	210
F2 (2') Duplicate	mg/kg	430
F3 (Surface)	mg/kg	380
F3 (2')	mg/kg	<20
F4 (Surface)	mg/kg	1,100
F4 (2')	mg/kg	<50
GNRCC - Direct Contact ⁽³⁾	mg/kg	900
GNRCC - Particulate Soil Inhalation (3)	mg/kg	44,000

Notes:

- 1 mg/kg = milligrams per kilogram or parts per million (ppm)
- 2 "<" indicates concentration below laboratory reporting limit
- 3 Per R299.46, June 25, 2018

BOLD and shading indicates a concentration above criteria

Soil samples were collected by Clayton and originaly reported in the Final Closure Report and Certification, Interim Status Hazardous Waste Storage Unit, Techna, March 31, 1998

Table 2
Summary of Soil Laboratory Analytical Results - Lead
Clayton, February 5 and 6, 1997
WMU-30, RTRR - Riverview
18251 West Jefferson Ave., Riverview, MI

ASTI Project Number: 10860

Sample Identification and Depth	Units	Lead
A1 South Surface	mg/kg ⁽¹⁾	740
A1 South (2')	mg/kg	270
A1 East Surface	mg/kg	190
A1 East (2')	mg/kg	99
A2 South Surface	mg/kg	19
A2 South Surface Dup.	mg/kg	270
A2 South (2')	mg/kg	NA ⁽²⁾
A4 South Surface	mg/kg	270
A4 South (2')	mg/kg	NA
A5 Surface	mg/kg	220
A5 (2')	mg/kg	NA
B1 East Surface	mg/kg	550
B2 (4')	mg/kg	5
B5 (4')	mg/kg	NA
B6 (2')	mg/kg	NA
C5 (4')	mg/kg	NA
C6 Surface	mg/kg	NA
C6 (2')	mg/kg	NA
D1 East Surface	mg/kg	520
D2 (4')	mg/kg	15
D7 Surface	mg/kg	460
E1 East Surface	mg/kg	90
E2 (4')	mg/kg	NA
F1 Surface	mg/kg	440
F1 (2')	mg/kg	160
G2 Surface	mg/kg	640
G2 Surface Duplicate	mg/kg	990
G2 (2')	mg/kg	270
G4 (Surface)	mg/kg	490
GNRCC - Direct Contact ⁽³⁾	mg/kg	900
GNRCC - Particulate Soil Inhalation ⁽³⁾	mg/kg	44,000

Notes:

- 1 mg/kg = milligrams per kilogram or parts per million (ppm)
- 2 "NA" not analyzed
- 3 Per R299.46, June 25, 2018

BOLD and shading indicates a concentration above criteria

Soil samples were collected by Clayton and originally reported in the Final Closure Report and Certification, Interim Status Hazardous Waste Storage Unit, Techna, March 31, 1998

Table 3
Summary of Soil Laboratory Analytical Results - Lead
Background Soil Samples
WMU-30, RTRR - Riverview
18251 West Jefferson Ave., Riverview, MI

ASTI Project Number: 10860

Sample Identification	Depth (ft. bgs) ⁽¹⁾	Units	Lead
BGDA	0-1	mg/kg ⁽²⁾	450
BGDA	2-3	mg/kg	<20
BGDB	0-1	mg/kg	130
BGDB (Duplicate)	0-1	mg/kg	170
BGDB	2-3	mg/kg	55
BGDC	0-1	mg/kg	260
BGDC	2-3	mg/kg	110
BGDD	0-1	mg/kg	240
BGDD	2-3	mg/kg	<20
BGD1	0-1	mg/kg	120
BGD1	2-3	mg/kg	13
BGD2	0-1	mg/kg	270
BGD2	2-3	mg/kg	43
TBG-A	0-1	mg/kg	41.3
TBG-B	0-1	mg/kg	191
TBG-B	2-3	mg/kg	96.6
TBG-C	0-1	mg/kg	406
TBG-D	1-2	mg/kg	273
TBG-D	3-4	mg/kg	73
TBG-E	1-2	mg/kg	612
TBG-E	3-4	mg/kg	1,110
TBG-F	0-1	mg/kg	399
TBG-G	0-1	mg/kg	185
GNRCC - Direct Contact ⁽³⁾		mg/kg	900
GNRCC - Particulate Soil Inhalation ⁽³⁾		mg/kg	44,000

Notes:

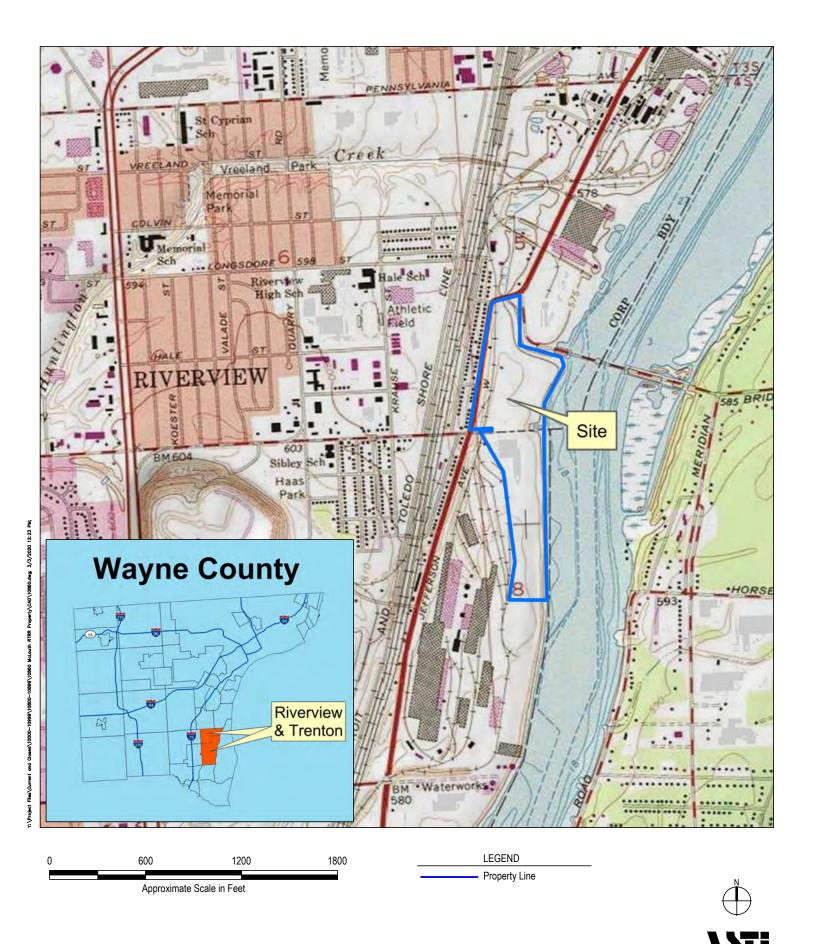
- 1 Feet below ground surface
- 2 mg/kg = milligrams per kilogram or parts per million (ppm)
- 3 Per R299.46, June 25, 2018

BOLD and shading indicates a concentration above criteria

Soil samples were collected by Techna and originaly reported in the Final Closure Report and Certification, Interim Status Hazardous Waste Storage Unit, Techna, March 31, 1998

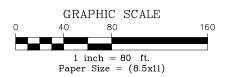
Attachment A Figures

Waste Management Unit 30 Surface Soil Investigation









LEGEND

Soil Sample Location

Area of Lead Concentrations
exceeding GNRCC for Direct Contact
Sampling Grid system developed by
Clayton Environmental Consultants



RTRR Property

Closed\10000-10999\10800-10899\10860 McLouth RTRR Property\CAD\10860 RTRR.dwg; 3/14/2021 9:36 PM;

18251 West Jefferson, Riverview, MI

Attachment B Techna Final Closure Report and Certification

Waste Management Unit 30 Surface Soil Investigation



Knowledge, and the Creativity to Use It

44808 Helm St. Plymouth, MI 48170 (313) 454-1100 Fax. 454-1233

FINAL CLOSURE REPORT AND CERTIFICATION

INTERIM STATUS HAZARDOUS WASTE STORAGE UNIT

DSC Ltd.
TRENTON PLANT

MID 017 422 304

Prepared by:

Techna Corporation 44808 Helm Street Plymouth, Michigan 48170

TPN: 00738-12A-001

March 31, 1998

APR 06 1998

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Appendix B	Clayton Soil Assessment Report
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FINAL CLOSURE REPORT AND CERTIFICATION INTERIM STATUS HAZARDOUS WASTE STORAGE UNIT DSC Ltd. TRENTON PLANT MID 017 422 304

1.0 HAZARDOUS WASTE STORAGE AREA CLOSURE CERTIFICATIONS

This closure report is composed of three separate reports (final closure report and reports attached in Appendix B and Appendix C), each containing an engineer's certification of the respective report and work described therein. The following certification by DSC Ltd. references the entire closure project, encompassing all the activities and reports to date.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The following engineer's certification references the final closure report and all closure data collection and evaluation activities described therein performed by Techna Corporation.

TECHNA CORPORATION TPN: 00738-12A-001 EAF Closure Report2.doc I certify under penalty of law that this document and all Techna Corporation attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

TECHNA CORPORATION
Signature: ////////////////////////////////////
Name: John F. McInnis, P.E.
Date: <u>April 1, 1998</u>

Professional Engineer Registration No.: 37207

2.0 INTRODUCTION

This Closure Report and Certification for the DSC Ltd. (DSC) Interim Status EAF Pollution

Control Dust Storage Pile (EAF Dust Pile) was prepared in accordance with the requirements of

40 CFR 265.115 and the approved Closure Plan for Emission Control Dust Storage Area, as

amended and with stipulations (Appendix A), prepared by McLouth Steel Products Corporation

(McLouth). The closure assessment activities were conducted in the following five phases: 1)

removal of final wastes, 2) initial closure and background assessment, 3) hydrogeological

assessment, 4) supplemental background assessment, and 5) data evaluations and closure

reporting.

The EAF Dust Pile closure plan was prepared by McLouth between 1988 and 1995. Th

Michigan Department of Environmental Quality (MDEQ; fka Michigan Department of Natural

Resources) approved the initial closure plan in October 1988 with stipulations. A modified

hydrogeological assessment plan was approved by MDEQ as part of the closure plan in 1995.

McLouth stopped using the storage pile for EAF dust in 1990± and began accumulating (<90

days) the dust in specially designed concrete tanks. The approved plans had been only partially

implemented (removal of EAF wastes in 1991) by the time McLouth terminated operations and

entered bankruptcy in 1996. After DSC acquired the assets of McLouth in August 1996, they

began activities to complete implementation of the closure plan.

Closure assessment activities were conducted by contractors for DSC between November 1996

and August 1997. Data review, evaluation and reporting activities have been conducted since

September 1997. The closure activities and assessment findings are documented in three reports.

This final closure report and certification includes discussions of site description and history

(Section 3), overall technical approaches to closure (Section 4), technical approaches for

collection of supplemental background data (Section 4), and summaries of assessment findings,

statistical data evaluations, and conclusion (Section 5). Detailed descriptions and findings of the

closure assessment soil sampling and analysis program is presented in a separate report and

certification (Appendix B) prepared by Clayton Environmental Consultants, Inc. (Clayton).

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Detailed descriptions and findings of the hydrogeological assessment conducted by Clayton also are presented in a separate report and certification attached in Appendix C.

Techna Corporation TPN: 00738-12A-001 EAF Closure Report2.doc 3.0 SITE DESCRIPTION AND HISTORY

3.1 Location

The DSC Trenton Plant is located at 1491 West Jefferson Avenue, Trenton, Wayne County,

Michigan. The EAF dust storage pile was located on the north portion of the property, northeast

of the intersection of West Jefferson Avenue and Sibley Road (Figures 1 and 2).

The interim status storage area was constructed on bare soil/fill (see also Section 3.3) in the

vicinity of other piles of iron and steel making debris. The storage pile area was identified by

McLouth prior to DSC's acquisition of the property, and the area was delineated by an earthen

berm for closure activities (Figure 2).

The storage pile area was irregularly shaped and occupied approximately 25,000 square feet of

ground surface. It was constructed in an area that is composed of fill to a depth of 15'-20'. This

fill consists of iron and steel making wastes (e.g. scales, slag, air pollution control dusts, coke

and graphite fines, refractory, and dried process and wastewater treatment sludges) and plant

debris (e.g. brick, refractory, and scrap metal). The portion of the site containing the EAF debris

pile was acquired between 1956 and 1961 by McLouth based on reviews of aerial photographs.

Significant fill was deposited in the area to raise the ground elevation between 1961 and 1967.

By 1967 the general area of the EAF pile was in use for storage of raw materials and/or process

waste and plant debris in piles. Between 1967 and 1997 the area was in continuous use for

storage of these materials, as well as scrap, surplus equipment, and construction materials.

3.2 <u>History and Operation of Waste Management Unit</u>

The McLouth Steel Products Corporation was an integrated iron and steel producing facility that

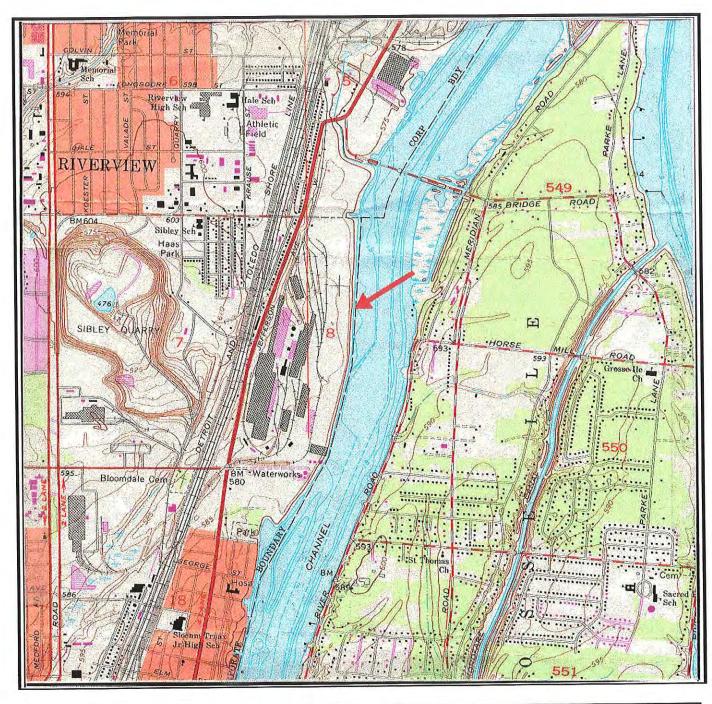
used both basic oxygen furnaces (BOF) and electric arc furnaces (EAF) to produce steel. The

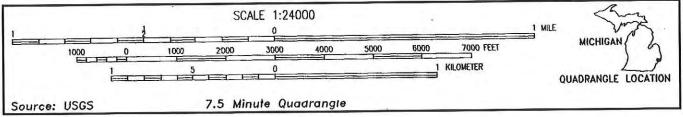
waste emission control dust generated from EAF air pollution control systems was designated as

a listed hazardous waste (K061) by USEPA rules promulgated in 1980 pursuant to the Resource

Techna Corporation TPN: 00738-12A-001

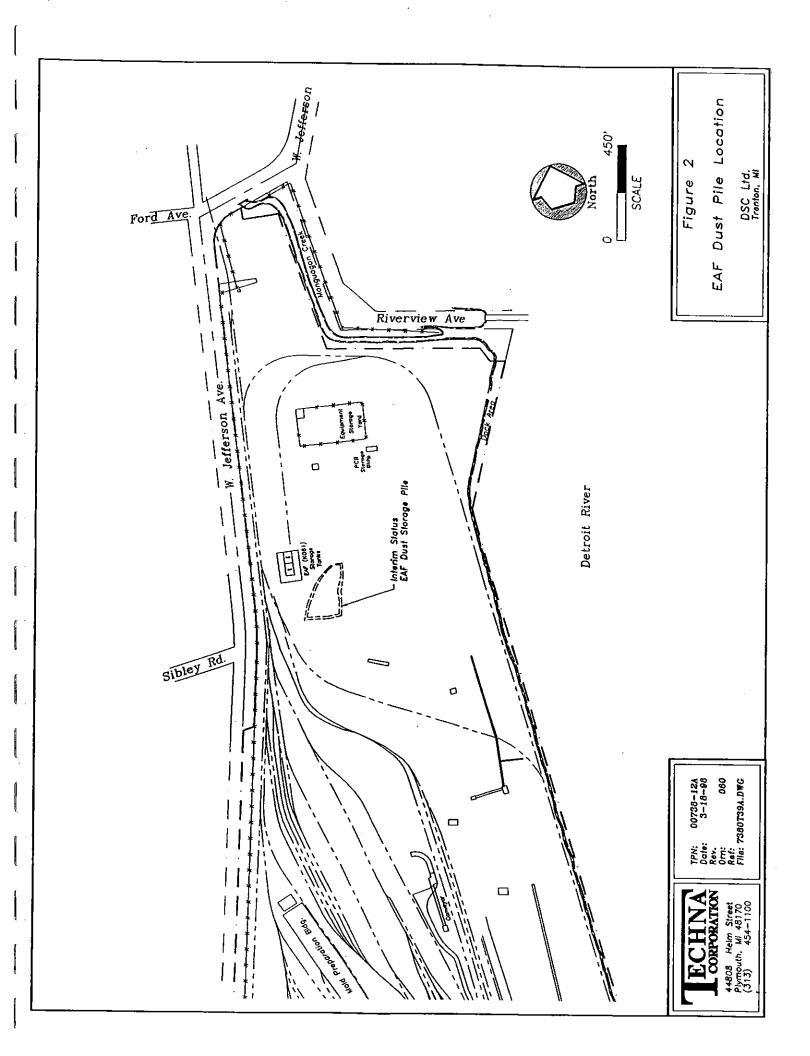
Site Diagram





DSC Ltd. 1491 West Jefferson Avenue Trenton, Wayne County, Michigan

TECHNA CORPORATION TPN: 00738-12A H:\73812amap.doc



Conservation and Recovery Act (RCRA). McLouth filed a notification of waste activity and a

RCRA Part A permit on November 17, 1980 for storage of EAF dust prior to treatment or

disposal.

The EAF Dust Pile was established on the north portion of the McLouth property as described in

Section 3.1 and operated continuously until final removal of waste in 1991. The final waste

removal occurred during the period September - November 1991. Approximately 980 tons of

EAF dust wastes were transported to Horsehead Resource Development Co. in Palmerton,

Pennsylvania.

EAF dust was generated at a rate of approximately 1,500 tons per year from the EAF wet

collector air pollution control system located outside the northeast part of the Melt Shop

building. Sludge was accumulated in a concrete sump and transferred by truck, wholly within the

site boundaries, to the interim status EAF Dust Pile storage area. Stored waste was then

periodically transported for off-site disposal or resource recovery.

Part B of McLouth's RCRA storage permit application was called in by the USEPA in 1984.

McLouth made various submissions in response to the call in, culminating in a final RCRA/Act

64 Permit Application dated February 27, 1988. After that application was rejected by the

Michigan Department of Natural Resources (MDNR), McLouth decided to close the EAF Dust

Pile and accumulate EAF dust for no longer than 90 days.

A closure plan was submitted to the MDNR in August 1988 and was subsequently revised in

response to MDNR comments. The revised closure plan was approved with stipulations on

October 31, 1988. A groundwater monitoring plan, required by the October 1988 stipulations,

was approved by the MDEQ on October 17, 1995. Copies of the approved closure plan and

groundwater monitoring plan are attached in Appendix A.

Techna Corporation TPN: 00738-12A-001 EAF Closure Report2.doc Closure activities were initiated by McLouth in 1991 with the removal of residual waste

materials from the EAF Dust Pile storage area. No further closure actions were taken by

McLouth prior to termination of operations in the spring of 1996. Closure activities were

restarted by DSC after acquisition of the property. Closure assessment tasks began in the fall of

1996 and were completed in late 1997. Data evaluation and reporting tasks were completed with

the submission of this report.

3.3 Site Setting and Geology

The former EAF Dust Pile storage area was located on an upland portion of the northern part of

an approximately 260-acre property (Figure 1) now owned and managed by DSC. The property

is bounded on the west by West Jefferson Avenue; on the south by industrial property, then park

land and residences; on the east by the Detroit River, and on the north by Monguagon Creek, then

other industrial properties. The site is generally flat, with a gradual slope toward the Detroit

River, that is more pronounced on the southern portion of the property.

The general site stratigraphy consists of fill overlying a lacustrine clay stratum, which in turn

overlies limestone bedrock (Figure 3; from Summary of Initial Assessment Results, DSC Ltd. -

Trenton Plant, October 20, 1997, previously submitted to the MDEQ). The underlying native

clay layer typically varies in thickness from 10' to 20', except along the Detroit River in the

central portion of the site. Only fill is observed over the bedrock in this area, probably

representing historical reclamation of low lying river edges. Fill on the remainder of the site

varies in thickness from 4' to 25', generally increasing in thickness from west to east, toward the

river. The uppermost zone of saturation was perched in the base of the upper fill stratum,

generally bounded by the underlying confining clay unit.

The stratigraphy in the area of the former EAF Dust Pile is consistent with the general site

geology. Boring logs from the hydrogeological assessment for closure (Appendix C) indicate

that the uppermost stratum typically is composed of approximately ten feet to 15 feet of

industrial fill. The fill layer is underlain by the clay stratum observed on the remainder of the

Techna Corporation TPN: 00738-12A-001

upland portions of the property. Fill was observed to an atypical depth of at least 30 feet in MW-

4, southeast of the EAF pile. It was reported by Clayton that this boring was advanced through

an area of mounded fill above grade.

The groundwater table in the vicinity of the former EAF dust pile was observed at a depth of

approximately eight to 16 feet below typical grade. Groundwater flow direction in the area

generally was to the south-southeast. The flow direction appeared to trend in a more southerly

direction, with a shallower gradient, east of the former storage pile.

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4.0 CLOSURE ACTIVITIES

Closure activities were performed as described in the approved closure plan and hydrogeological investigation plan. Final waste removal was accomplished in 1991. Initial site assessment activities included collection of background samples and assessment (foreground) samples from 0' to 2' BGL (below ground level) at 27 locations. After review of analysis results from those samples, additional samples from stepout locations and greater depths at original locations were collected and analyzed to complete delineation of the suspected potential impact from waste management activities. Background samples from seven additional locations nearer the EAF storage pile were subsequently collected to improve the representativeness of data collected to characterize the chemistry of fill not impacted by waste management activities.

The hydrogeological investigation was conducted using five groundwater observation wells located upgradient and downgradient of the former storage pile. Four quarterly sampling episodes were employed to collect sufficient data for a groundwater impact evaluation.

4.1 Closure Schedule

Closure activities pursuant to the approved plans were performed according to the following schedule:

Fi	nal Removal of Waste9/23/91 - 11/13/91
Cl	osure Assessment (Soil)
	Clayton Initial Sampling and Analysis11/6/96 - 11/7/96
	Clayton Supplemental Sampling and Analysis
	Clayton Initial Soil Assessment Report and Certification
	Techna Supplemental Background Sampling and Analysis 7/28/97
CI	osure Assessment (Groundwater)
	Observation Well Installation
	Initial Sampling and Analysis

Fi	nal Closure Report and Certification	4/3/98
	Hydrogeological Investigation Report and Certification	12/9/97
	Fourth Quarterly Sampling and Analysis	8/27/97
	Third Quarterly Sampling and Analysis	5/23/97
	Second Quarterly Sampling and Analysis	2/5/97

4.2 Final Waste Removal

Removal and disposal of the last wastes stored in the EAF dust pile commenced on September 23, 1991 and continued until November 13, 1991. Wastes were transported by Autumn Industries, Inc. to Horsehead Resource Development Co. in Palmerton, Pennsylvania. Approximately 980 tons of EAF dust were removed from the storage pile. Copies of transportation manifests for the shipments of waste material are attached in Appendix D.

4.3 Closure Assessment - Soil

Soil samples were collected in November 1996 from background and assessment sampling points selected as described in the approved closure plan (Figure 4, Figure 5 and Appendix B). The initial samples were analyzed for the following species (totals basis): barium, cadmium, chromium, lead and pH. Approximately 20% of the initial samples, and all background samples, also were analyzed for hexavalent chromium. Comparison of initial assessment sample results to calculations of background values for target analytes (mean + 3 σ as in the approved work plan) indicated limited areas of impact from barium (Ba), cadmium (Cd), chromium (Cr) and lead (Pb). Hexavalent chromium (Cr VI) was not detected in any sample.

Additional assessment samples were collected in February 1997 to further define the extent of suspected impact. Individual samples were analyzed for only the metals specie(s) measured at levels above background in proximate sample(s) in the previous assessment episode. Method reporting/detection limits for the target analytes are summarized below:

Techna Corporation TPN: 00738-12A-001 EAF Closure Report2.doc Barium 1.0-10 mg/kg (higher limits due to high analyte concentrations)

Cadmium 0.05-10 mg/kg (higher limits due to high analyte concentrations)

Chromium 2.5-130 mg/kg (higher limits due to high analyte concentrations)

Chromium VI 0.1 mg/kg

Lead 1-50 mg/kg (higher limits due to high analyte concentrations)

Complete descriptions of soil assessment activities, procedures and findings are presented in the Clayton closure assessment report and certification attached in Appendix B.

4.4 Supplemental Background Assessment - Soil

Evaluations of the results presented in the Clayton soil assessment report (Appendix B) indicated that a clean closure determination based on the background sampling locations and statistical approach in the approved closure plan would not be appropriate for site conditions for the following reasons:

- the EAF pile was constructed on top of fill with chemical characteristics very similar to the EAF dust;
- the initial background samples were in a fill area and did not represent native soil;
- the target metals concentrations in assessment and background samples exhibited a high degree of variability; and
- the initial background sample locations were too far removed from the EAF pile area to confidently assume that they were representative of the fill upon which the pile was built.

Results of these evaluations further indicated that a clean closure determination would have to be

based on a "contribution" standard, particularly for species (cadmium, chromium and lead) with

more variable concentrations. To that end, Techna collected additional representative samples of

the fill which underlies the area of the EAF pile. The analysis results from assessment samples

were then compared to the background data set to determine if waste management activities

contributed to the levels of metals in the underlying fill or if those levels were typical of the fill,

unimpacted by waste management activities, in the area.

Techna collected ten additional soil samples from seven background locations within

approximately 100 feet of the former EAF dust storage pile (Figures 4 and 5) on July 28, 1997.

Sample locations were selected at random, but roadways and debris piles were avoided. Samples

were collected randomly from depths of 0'-1' BGL, 1'-2' BGL, 2'-3' BGL and 3'-4' BGL. A

summary of sampling locations and depths is presented in Table 1 (Section 5). An eleventh

sample (TBG-H) was collected from a location approximately 250'-300' south of the EAF pile.

This sample was rejected from subsequent background evaluations because of its distance from

the EAF pile.

Soil samples were collected with a split barrel sampler. Samples were collected from the soil

column at the specified sampling depths. Sampling equipment was decontaminated prior to the

collection of each discrete sample using a 1) phosphate free surfactant wash, 2) deionized water

rinse, 3) isopropyl alcohol rinse, and 4) final deionized water rinse. Samples were placed directly

into 120-ml, pre-cleaned, glass sample jars fitted with Teflon lined covers and stored at

approximately 4° C until analyzed.

Samples were managed and transferred to the analysis laboratory, Fire and Environmental

Consulting Laboratories, Inc., under strict chain-of-custody protocols. The samples were

chemically analyzed for Cd, Cr, and Pb using USEPA Method 6020 (SW-846). Method

reporting/detection limits for the target analytes are summarized below:

Techna Corporation TPN: 00738-12A-001

Legend +BGD1 +BGD2 Soil Sample Background Soil Sample +BGDD 75' 0 Techna Background Soil Sample SCALE +BGDC→ MW-1 Monitoring Well +BGDB+BGDA ÷_{TBG−E} ÷ твс-а † ТВG−D Tank G2 G4 F3+ F2+ † твс−с Tank 50' Grid E3+ E4_ D7+ D6+ D4+ D5₊ D3₊ C5 C6 C4 B6_ B1 + B1 East B2_ A5₊ 1-East + твс−с + -BG-F + TBG−E Figure 4 TPN:

CORPORATION

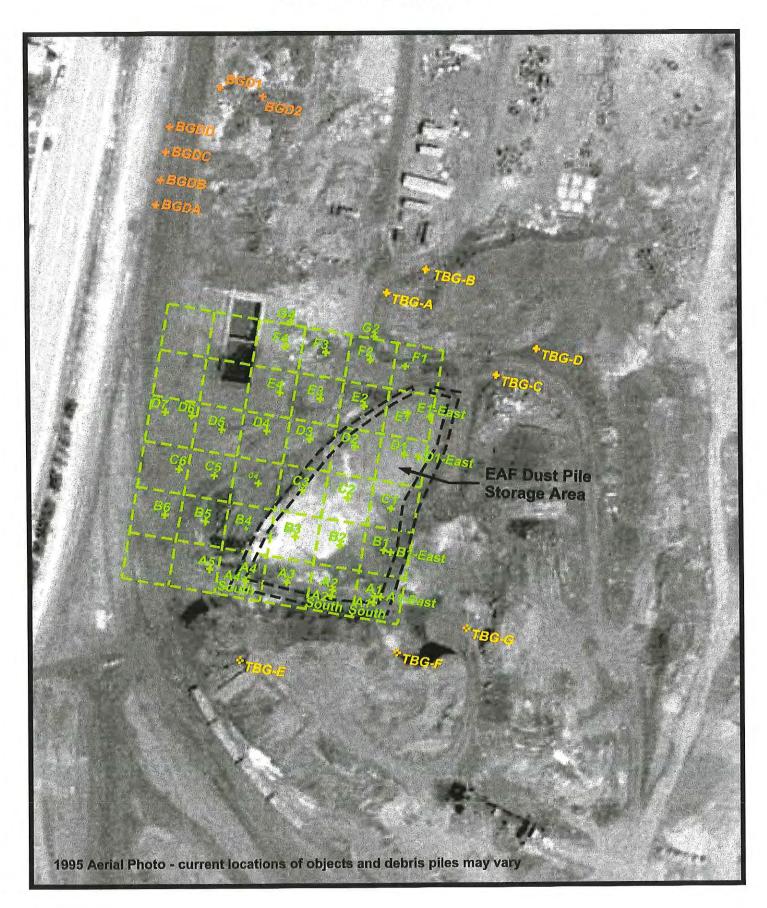
44808 Heim Street Plymouth, MI 48170-6026 (313) 454-1100

Sampling Locations

DSC LTD. Trenton, MI

00738-12A 3-18-98 Date: Rev. Drn: 060 Ref: File: 7380TR38.DWG

FIGURE 5
Closure Sampling Overlay



Cadmium

0.05 mg/kg

Chromium

1.0 mg/kg

Lead

 $1.0 \, \text{mg/kg}$

4.5 <u>Closure Assessment - Groundwater</u>

Groundwater samples were collected from five observation wells installed in October and November 1996 as specified in the approved closure plan. Samples were collected during four quarterly sampling events and analyzed for the following species: barium, cadmium, chromium, hexavalent chromium, lead and pH. Method reporting/detection limits for the target analytes are summarized below:

Barium

0.2 mg/L

Cadmium

0.0005 mg/L

Chromium

0.05 mg/L

Chromium VI

0.005-0.05 mg/L (higher limits due to matrix interferences)

Lead

0.003 mg/L

Complete descriptions of observation well installation activities, groundwater sampling and analysis procedures, and findings are presented in the Clayton closure assessment report and certification attached in Appendix C.

5.0 CLOSURE ASSESSMENT RESULTS AND CONCLUSIONS

Data collection activities during the closure assessment included 1) background and foreground

soil sampling for chemical analyses and visual characterization, 2) groundwater measurements

for hydrogeological characterizations, and 3) upgradient and downgradient groundwater sampling

for chemical analyses. Results of these activities are presented and discussed in the following

subsections.

5.1 Soil Stratigraphy and Hydrogeology

Evaluations of boring logs and groundwater elevation measurements from the hydrogeological

investigation (Appendix C), results of previous subsurface investigations (Figure 3), and visual

observations during soil sampling were compiled to characterize the subsurface stratigraphy and

hydrogeology in the area of the former EAF Dust Pile. The uppermost stratum is composed of

approximately 15 feet to 18 feet of industrial fill. The fill layer is composed of brown to black

sand and clayey sand containing pebbles, brick, slag, rock and metal debris. Based on historical

data for the site, this fill is generally composed of iron and steel making wastes such as slag,

scale, air pollution control dusts, wastewater treatment sludges and filter cake, coke fines,

refractory, and other debris generated at the site. Fill was observed to an atypical depth of at least

30 feet in MW-4, southeast of the EAF pile. This resulted from the placement of MW-4 on a

mounded area of debris (Appendix C).

The fill was underlain by a stratum of native clay. The thickness of this clay was not measured in

the area of the EAF dust pile, but was found to be 10 feet to 20 feet thick over most of the

property (see below). Groundwater was observed in a perched saturated zone in the fill

immediately above the underlying native clay layer. The groundwater table typically was

measured at approximately 8 feet to 15 feet below ground level, at elevations between 580 feet

and 575 feet NVGD. The elevation of the Detroit River was approximately 573 feet NGVD

during the assessment period (Summary of Initial Assessment Results, DSC Ltd. - Trenton

Plant, October 20, 1997, previously submitted to the MDEQ). Groundwater flow direction in the

Techna Corporation TPN: 00738-12A-001 EAF Closure Report2.doc area of the former EAF Dust Pile generally is to the south-southeast. The flow direction appears

to trend in a more southerly direction, with a shallower gradient, east of the former storage pile.

These results were consistent for the four quarterly monitoring periods. Additional groundwater

monitoring results are presented in Section 5.3.1 and Appendix C.

5.2 Soil Assessment

5.2.1 Background Soil Samples

Background samples were collected during two sampling episodes. The combined analysis

results for detected species in all representative samples are presented in Table 1. Hexavalent

chromium was not detected in any background sample. Laboratory analysis reports for these

samples are attached in Appendix B and Appendix E.

The upper limit of the mean background concentrations (mean + 3 σ ; hereafter, background

mean) of the target metals also are presented in Table 1. Upper limits were calculated for both

the complete data set and for the Techna samples (TBG) only. The Techna data set was

evaluated separately because it is composed of representative samples collected from fill in the

immediate vicinity of the former EAF Dust Pile, but in areas not impacted by the waste

management activities. The Clayton background samples (Appendix B) were collected in a

limited area northwest of the storage area. This sampling area was along a railroad spur near

West Jefferson Avenue. The characteristics of this area are different from the storage area, and

the fill may not be representative of the material on which the former EAF Dust Pile was

operated.

The data sets for all four target metals showed a high degree of variability. This was consistent

with the types of industrial fill known to compose the subsurface soil stratum in this area. The

fills are comprised of scales, slags, air pollution control dusts and other metals-containing

materials generated at high temperature. These materials typically contain microscopic to

Techna Corporation TPN: 00738-12A-001

TABLE 1
Summary of Target Background Metals Coucentrations and Upper Limit Values

Sample	Depth					
Location	(Ft. BGL)	Barium	Cadmium	Chromium	Lead	
BGDA	0-1	270	3,60	480	450	
BGDA	2-3	110	0.33	690	<20	
BGDB	0-1	82	1.30	650	130	,2
BGDB (Dup.)	0-1	92	1.70	420	170	7
BGDB	2-3	36	0.77	430	55	3473
BGDC	0-1	50	0.78	330	260	V
BGDC	2-3	110,	0.40	690	110	a w
BGDD	0-1	68	1.00	360	240	1 1 1
BGDD	2-3	61	0.38	930	<20	Į Ž
BGD1	0-1	100	< 0.05	250	120	us TBG.H" distans from
BGD1	2-3	17	< 0.05	530	13	3 3
BGD2	0-1	140	< 0.05	290	270	to R
BGD2	2-3	34	< 0.05	540	43	ll
TBG-A	0-1	NA	0.82	561	41.3	did
ГВG-В	0-1	NA	1.83	200	191	, '
TBG-B	2-3	NA	1.38	197	96.6	K
ГВG-С	0-1	NA	5.00	429	406	Lod
ГВG-D	1-2	NA	1.42	488	273	
ГВG-D	3-4	NA	1.58	39	73.1	ر م س
ГВG-Е	1-2	NA	7.19	3,770	612	1
ГВG-Е	3-4	NA	9.18	208	1,110	
TBG-F	0-1	NA	2.05	302	399	ا با
TBG-G	0-1	NA	2.38	145	185	1 20 C C C C C C C C C C C C C C C C C C
						- 106.4 100.
BACKGROUN	D UPPER LIN		ATA			, , , , , , , , , , , , , , , , , , ,
Mean		90	1.9	560	229]
Std. Dev. (S)		65	2.3	730	249	<u> </u>
Mean+3S		280	8,9	2,800	976	
		285	88	2750	975	062 V
BACKGROUN	D UPPER LIN	<u> 1IT - PROXI</u>	MATE (TEC	HNA "TBG-")	DATA]
Mean		NA	3.3	634	339]
Std. Dev. (S))	NA	2.9	1,114	324]
Mean+3S		NA	12	3,980	1,310	7

NOTEs: Measurements <MDL were replaced with 0.5 x MDL for statistical calculations;

granular sized inclusions of condensed metallic components. This often causes highly variable

distributions of metals species in both collected samples and the aliquots removed from those

samples for analyses. Background data sets of ≥10 samples were used to help compensate for

this inherent variability.

The upper limit of background concentrations for the Techna data set were similar to, but

somewhat higher than, those for the full data set. This is probably indicative of differences in fill

between the more atypical sampling locations specified in the approved closure plan (Clayton

data) and the sampling locations more directly associated with the material under the former EAF

dust pile (Techna data).

5.2.2 Assessment (Foreground) Soil Samples

The results of chemical analyses performed on foreground samples collected in November 1996

and February 1997 are presented in Tables 1 and 2 in Appendix B. The results for Cd, Cr, and

Pb were highly variable, as observed in the background samples. Results for Ba also were quite

variable, but generally not as much as the other three analytes. Hexavalent chromium was not

detected in any assessment sample.

Soil pH values typically were measured in one of two general ranges: 8.5 - 9.5 S.U. and 11.5 -

12.5 S.U. Samples in the lower range generally were collected from near surface (0'-1') soil, and

samples in the higher range generally were collected from the subsurface (≥1' - 2').

5.2.3 Comparison of Foreground and Background Data

Since the former EAF Dust Pile was managed on top of fill containing elevated levels of the

same target metal contaminants as in the EAF dust, a clean closure demonstration would rely on

verification that waste management activities did not result in an increase in (contribution to) the

inherent levels of metals in the fill. After reviewing the high variability of the assessment results,

it was determined that the appropriate demonstration would be a comparison of 1) the

background mean (mean + 3 σ) of the concentrations of each metal in the local site background

fill with 2) the true average concentration of each metal in the assessed (foreground) fill,

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represented by the 95% upper confidence limit (UCL) of the mean of the measured

concentrations.

The foreground data set for each metal was comprised of the analysis results presented in Tables

1 and 2 of Appendix B. The number of data points for the four target metals ranged from 62 to

79. The data set for each metal was divided into ranges of values, and the number of results in

each range was plotted to determine if the data distributions were normal or lognormal. These

plots are presented in Figure 6.

None of the four data sets demonstrated a normal distribution and were subsequently treated as

lognormally distributed. The 95% UCL for the arithmetic mean of the lognormally distributed

data was calculated as described in Supplemental Guidance to RAGS: Calculating the

Concentration Term, USEPA Publication 9285.7-081, May 1992 (Appendix F). The data was

first transformed using the natural logarithm function, and the arithmetic mean and standard

deviation of the transformed data was determined. The 95% UCL was then calculated using the

H-statistic as described in the USEPA reference document. A summary of the results of the 95%

UCL calculations is presented in Table 2.

The 95% UCL for the foreground mean concentration of each detected target metal was

compared to the background mean for that metal. Comparisons were made to the background

mean for all data and for the more proximate Techna data set (see Section 5.2.1). A summary of

the comparison data is presented in Table 2.

The foreground 95% UCL for Ba and Cr were well below the respective background reference

values. This demonstrates that waste EAF dust management activities did not contribute to the

levels of these metals present in the soil under or near the former EAF dust storage pile.

The average foreground concentrations of Cd and Pb were below the respective background

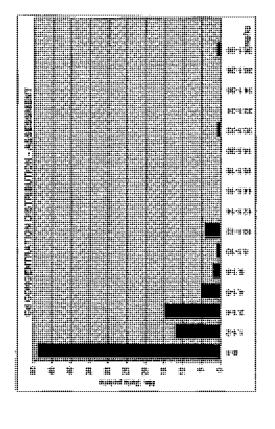
reference values calculated from results of analyses of the proximate (Techna) data. However,

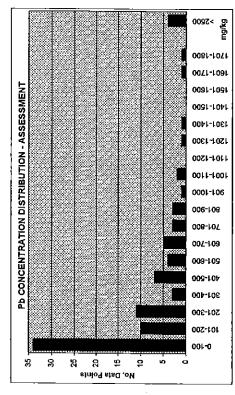
they were slightly above the reference values calculated from the complete data set. Based on the

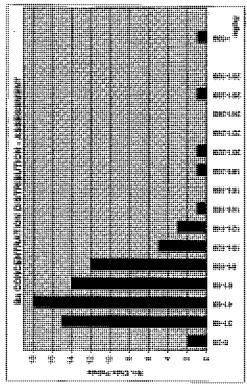
Techna Corporation
TPN: 00738-12A-001
EAF Closure Report2.doc

FIGURE 6

Concentration Distribution Plots EAF Dust Pile Assessment Results







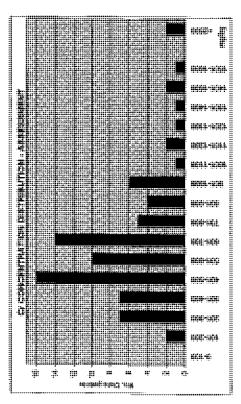


TABLE 2

Summary of Lognormal Statistical Determination of 95% UCL for EAF Dust Pile Assessment Results

					-	ACTEMETIC		ı
Analyte	Z	Mean _{mX}	$S_{ m inx}$	H _{0.95}	95% UCL (mg/kg)	Background Upper Limit Proximate Data (mg/kg)*	Background Upper Limit Background Upper Limit Proximate Data (mg/kg)* All Data (mg/kg)*	× **
Ва	62	4.11 &	0.61	1.941	5 6 5 5 F	NA ₹7+ 3	290° 280 230 05	
Cd	11	-0.29	1.92 P	3.308	2× 2'6	12	8'8 6'8 g'5'8	_
Cr	89	4³ ° و.43	0.62 کا	1.942	870 537	3,980	2,800 anay of	
Pb	6/	5.35 %	5.35 % 1.55 ₺	2.847	1,200 5	1,310	so εοδ 916 / leoe	

* Data from Table 1

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following evaluations of the assessment data comparisons, the foreground-background

comparisons do not indicate that waste management activities contributed to the levels of Cd and

Pb measured in the assessment samples:

• the biased (non-representative) nature of the original (Clayton) data set indicates that

comparison to the Techna background data set is more reliable than comparison to the

complete data set;

• the high variability of the data support a general conclusion that all of calculated

background and foreground values for each metal are comparable.

Therefore, statistical evaluations of the soil assessment results demonstrate that waste EAF dust

management and storage activities did not result in a contribution of contamination in the interim

status unit or surrounding soil. The data indicate that the final waste removal activities were

sufficient to remediate the unit.

5.3 Groundwater Assessment

5.3.1 Results of Quarterly Monitoring

Samples were collected quarterly from upgradient and downgradient groundwater monitoring

wells installed around the former EAF Dust Pile during the period November 1996 through

August 1997. Samples were analyzed for the assessment target metals (Ba, Cd, Cr, Cr VI, and

Pb) and pH. Groundwater elevations were measured five times during this period. Results of

these analyses and measurements are presented in Table 1 through Table 5 in Appendix C.

The groundwater flow direction was determined to be consistent throughout the assessment

period. It generally flows south-southeast in the vicinity of the former EAF pile, then trends to a

more southerly flow direction east of the storage area. A representative groundwater flow

diagram is shown in Figure 2 of Appendix C.

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Page 26 March 31, 1998 These results reveal that observation wells MW-1 and MW-2 are in monitoring locations that would not be impacted by EAF dust storage activities, and MW-3, MW-4 and MW-5 represent downgradient monitoring locations.

5.3.2 Comparison of Downgradient and Upgradient Monitoring Results

Evaluation of groundwater flow direction and observation well placement indicated that wells MW-1 and MW-2 were located in areas that would be unimpacted by EAF dust management activities. Samples from these wells were designated as "background" for purposes of evaluating the potential impact of the EAF pile activities. Observation wells MW-3, MW-4 and MW-5 were designated as downgradient monitoring points. A summary of the chemical analysis results for the hydrogeological assessment is presented in Table 3. The mean and variance for each analyte/well data set (derived from Table 2 through Table 5 in Appendix C) and the t-statistics for the Cochran's t-test are also presented in Table 3.

t with

The groundwater monitoring results were first compared to the health based drinking water criteria applicable to closures under Part 111 of the Michigan Natural Resources and Environmental Protection Act (NREPA). These criteria were referenced in *MERA Operational Memorandum #8, Revision 3 — Type B Criteria*, February 4, 1994. The concentrations of Ba and Cr were below their respective drinking water criteria in ALL samples from ALL wells. Concentrations of Cd and Pb were greater than their respective health based criteria in at least one sample from each well. The mean concentrations of Cd in all wells, except upgradient well MW-2, exceeded the criterion. The mean concentrations of Pb were greater than its health based criterion in all wells.

Based on requirements of the approved closure plan, the groundwater monitoring data for Cd and Pb were statistically evaluated using Cochran's approximation of the Student's t-test. The combined data from MW-1 and MW-2 were used as the upgradient ("background") data set for each metal. A value of one-half MDL was substituted for analysis results reported as "not detected" or less than MDL/MRL.

TABLE 3

Summary and Evaluations of Groundwater Assessment Results

	Ba (mg/L) ²	Cd (mg/L) ¹	Cr (mg/L) ²	Pb (mg/L) ¹
	Upg	radient Wells		
MW-1	0,1	0,015	0,1	0,013
	0.1	0.00025	0:025	100.0
	0.1	0,0078	0.025	0,00
	0.1	0,00025	0.025	0,001
Mean	<0.1	0,00583	0,04375	0.0050
S²	NA.	0.00005	NA.	2.98E-0
MW-2	9,1	0.00025	0.08	0.001
	0.2	0.00025	0:025	0.001
	0.1	0,011	0:025	0,02
	0.2	0,00025	0.025	0,02
Mean	0.12500	0.00294	0,03875	0,0117
S²	NA.	0.00003	NA.	0.00014
MW-1+MW-2	_	L		0.0001
Меап	NA.	0.00438125	NA	0.00838
S²	NA.	0.00004	NA NA	0.00000
	(11)	0.00004		0.0000
	Down	ngradient Wells	_	_
MW-3	0,5	0.013	0.12	0.01
	0.6	0.00025	0.025	0.001
	0.5	0.0083	0.025	0.079
	0.5	0.00025	0.025	0.007
Mean	0,52500	0.00545	0.04875	0.02486
S ²	NA NA	0.00004	NA	0.00132
t* -	NA	0.28103	NA NA	0.89370
t _e	NA	2.20959	NA.	2.3385
MW-4	0.4	0,017	0.025	0,020
	0.46	0.016	0.025	0.02
	0.4	0.00025	0.025	0.02
	0.4	0.0068	0.025	0.07
	0.4	0,00025	0.025	0.07
Mean	0.41200	0.00806	<0.025	0.0253
S ²	NA NA	0.00007	\0.025	0.0233
<u>t*</u>	NA NA	0.87059	NA	1.27539
te	NA NA	1.98457	NA NA	2.0076
MW-5	0.1	0.017	0.11	0.01
	0.2	0.00025	0.025	0.001
	0.1	0.0074	0.025	0.08
	0.5	0.00025	0.15	0.1
Mean	0.22500	0.00623	0.07750	0.0718
S ²	NA	0.00006	NA NA	0.0075
t*	NA	0.40953	NA NA	1.4531
t _c	NA NA	2.25067	NA NA	2.3504
MDEQ Default Type B Drinking Water Criteria	2.4	. 0.0035		0.00

¹ Evaluated using Cochran's Approximation to the Student's t-Test, 40 CFR 264, Appendix IV (0.5 MDL substituted for ND entries)

² Evalauted against default Type B criterion

³ MERA Operational Memorandum #8, Revision 3 ~ Type B Criteria, February 4, 1994

Reported results < MDL

Results of the t-tests for the two metals, Cd and Pb, detected in both upgradient and downgradient wells at levels above health based criteria were examined. The t-test results (t* <

t_c) demonstrate that there is not a significant difference between the upgradient and downgradient

mean concentrations of either Cd or Pb in groundwater samples collected and analyzed.

The above results from evaluations of the concentrations of target metals in the upgradient and

downgradient wells confirm that EAF dust waste management activities did not impact site

groundwater and no groundwater response activities are required for closure of the EAF dust

storage pile.

5.4 Summary and Conclusions

Results of comparisons of soil closure assessment results to typical fill chemistries demonstrated

that management of EAF dust wastes (K061) at the interim status storage pile did not contribute

to the levels of target metals measured in area fill during the closure assessment. This

demonstrates that the final waste removal activities successfully remediated the former dust pile

sufficient to achieve closure to site specific background.

Results of comparisons of downgradient groundwater assessment results with upgradient

groundwater results demonstrated that contaminants from the EAF dust storage pile were not

released to groundwater.

The combined closure assessment results established that no residual soil contamination resulted

from the former waste management activities at the EAF Dust Pile and that no contaminants

were released to the local environment at levels above health based criteria and/or site specific

background levels during operation of the pile. Therefore, the EAF Dust Pile has been

successfully closed, requiring no further closure response activities.

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APPENDIX A APPROVED CLOSURE PLAN



JOHN ENGLER, Governor DEPARTMENT OF ENVIRONMENTAL QUALITY

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48900-7973

RUSSELL J. HARDING, Director

October 17, 1995

Mr. Donald S. Windeler McLouth Steel Corporation 1650 W. Jefferson Avenue Trenton, Michigan 48183

Dear Mr. Windeler:

SUBJECT: Groundwater Monitoring Plan approval

McLouth Steel Trenton Plant (McLouth)

MID 017 423 304

Waste Management Division (WMD) staff have reviewed Section 2.2
"Task 2-Groundwater Monitoring Program," and the material related
to groundwater testing in Sections 2.3 "Task 3-Chemical Testing,"
and 2.3.1 "Quality Assurance/Quality Control" submitted to the
WMD on September 12, 1995. This information was submitted on
behalf of McLouth Steel Corporation by Walter W. Tomyn.
Stipulation 2.B of the WMD stipulations for approval attached to
the October 31, 1988 closure plan approval letter required
McLouth to submit a groundwater monitoring plan to the WMD. The
sections mentioned above were reviewed in accordance with
Stipulation 2.B.

The WMD approves the material WMD staff reviewed in the attachment to the September 12, 1995 with a modification. The attached "Modification for Groundwater Monitoring Plan Approval" describes the modification. The modified groundwater monitoring plan is the approved groundwater monitoring plan, and an enforceable part of the approved closure plan.

This approval does not constitute an approval of any part of the September 5, 1995 attachment to the September 12, 1995 letter related to soil sampling or any section not specifically listed as reviewed by WMD staff. For soil sampling McLouth must follow the approved closure plan. Once sampling and analysis have been completed, McLouth may determine that a closure plan amendment is necessary based upon the sampling results. That will be the first legitimate time McLouth can amend the approved closure plan.

}

-2-

If you have any questions, please call Ms. Angela Hahn of the WMD at 517-373-7738.

Sincerely,

Kenneth Burda, Chief Hazardous Waste Program Section Waste Management Division

517-373-0530

Mr. Ben Okwumabua/Mr. Tim Sonnenberg, DEQ-Livonia

Ms. Johnn Merrick/Mr. Rick Rusz, DEQ

Mr. Steve Buda, DEQ Ms. Angela Hahn, DEQ

McLouth Steel Corporation MID 017 423 304

Modification for Groundwater Monitoring Plan Approval

1. The appropriate number of background and foreground samples must be taken to properly apply the statistical method proposed in the McLouth submittal dated 12/20/89 (Cochran's t-test). If the t-test is not going to be applied, the appropriate number of samples must be taken for the statistical method used.

This modification is necessary to assure proper statistical procedures are used.

Professional Engineering and Environmental Services



38955 Hills Tech Drive P.O. Box 9173 Farmington Hills, MI 48333-9173 (810) 553-6300 (810) 489-0727 Fax

McLouth Steel Corporation c/o Walter W. Tomyn, P.E. 3742 Elder Road South West Bloomfield, Michigan 48324

September 5, 1995 Project No. 13-4562-01

RE: Modified Work Plan for Remedial Investigation
Former Furnace Dust Stockpile
McLouth Steel
1650 West Jefferson
Trenton, Michigan

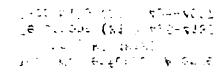
Dear Mr. Tomyn:

In response to discussions with representatives of the MDNR on August 24, 1995, and as agreed by all parties present, we are pleased to submit a modified work plan for conducting a remedial investigation at the former furnace dust stockpile formerly located at the McLouth Steel facility in Trenton, Michigan. The modified workplan incorporates the basic sampling plan as proposed in the 1988 work plan prepared by others and previously approved by the MDNR. However, the modified work plan retains our previous monitoring well scheme as presented in our August 1, 1994 work plan, but introduces a monitoring program pursuant to MDNR requests. Furthermore, the modified work plan limits the total number of soil samples required for chemical analysis to near surface samples for the initial analysis. Lastly, 6 borings are added to provide background information. The modified work plan and associated cost estimates are presented below.

(Partial pages 1, 3, 4, 5 only.)

1,36,758

Mr. Walter W. Tomyn September 5, 1995



2.2 TASK 2 - GROUNDWATER MONITORING PROGRAM

- Groundwater monitoring wells will be installed in at least four of the test borings as follows: one interior boring, one upgradient background boring, and the two downgradient exterior borings. However, the downgradient wells will be placed no more than 50 feet from the perimeter of the former stockpile. The wells will be used to determine both groundwater quality and local groundwater flow direction. Final well locations and depths will be made based on groundwater conditions encountered during on-site drilling activities. Due to the close proximity of the Detroit River, river staging data will be requested from the U.S. Army Corp of Engineers concurrently with groundwater elevation measurements in the wells.
- In general, the well screens will be set at a depth intended to straddle the uppermost groundwater surface. The wells will be constructed using 2" outside diameter PVC screens and riser pipe. The well screens will be 5 feet long. Unless otherwise directed, the riser pipe will be left above grade and protective, above-ground locking covers will be installed over them and cemented in place. After installation, the wells will be developed and sampled either with disposal polyethylene bailers or a peristaltic pump. Prior to placement in sample jars, the groundwater samples will be filtered using 0.45 micron disposable filters. Development water will be containerized on site until disposal requirements are determined. In addition, where accessible, existing on-site wells that are in service will be sampled in a similar manner.
- The ground surface elevation at each boring location and the top of casing elevation at each monitoring well will be surveyed by a licensed subcontracted surveyor. Top of casing elevations will be surveyed to the nearest 0.01 feet. Ground surface elevations will be surveyed to the nearest 0.1 feet. Elevations will be referenced to a USGS datum or equivalent.

Mr. Walter W. Tomyn September 5, 1995

- Qualified NTH personnel will monitor and record the drilling, sampling, and well installation operations, develop and collect groundwater samples from the monitoring wells, and obtain static water level measurements. Soil conditions encountered will be recorded on individual test boring logs.
- Samples of groundwater and static water level measurements will be obtained on an approximate quarterly basis for a period of one year for a total of four (4) rounds of sample analysis. Water samples will be field filtered and analyzed for dissolved concentrations of cadmium, total chromium, and lead. Following analysis of the year's data the groundwater monitoring program will be evaluated to determine additional needs, if any.
- Upon receipt of analytical results for each sampling period, an interim report summarizing current
 groundwater conditions will be prepared. Results of the groundwater monitoring program will be
 summarized in a final report distinct from the final report on the soil conditions encountered
 during field investigation. summarizing current groundwater conditions.

2.3 TASK 3 - CHEMICAL TESTING

The soil and groundwater samples will be delivered to Eagle Laboratories Inc. of Wixom, Michigan within 24 hours of collection for chemical analysis. Sample analyses will be performed in accordance with MDNR recommended analytical methods and target method detection limits pursuant to MERA Operational Memorandum #6, Revision #3 (MDNR, February 4, 1994). Results of soil sample analyses will be reported on a dry-weight basis.

Based on review of available information, and specifically the constituents of potential concern as identified for K061 waste, selected soil and groundwater samples will be analyzed for the following parameters:

		Method
Parameter	<u>Soil</u>	<u>Water</u>
Cadmium (Cd)	7131	213.2
Chromium *	7195	218.6
Lead (Pb)	7420	239.2
Barium **	7081	208.2

- Approximately 25% of soil samples selected for analysis will be tested for the presence of Cr(VI).
- ** The basis for including barium in the original plan is not clear, as barium is not an indicator for the McLouth Electric Furnace Dust.

Mr. Walter W. Tomyn September 5, 1995

The groundwater analyses will be conducted on field-filtered samples to determine the dissolved concentrations of the parameters of interest.

2.3.1 Quality Assurance/Quality Control

To provide a measure of quality assurance/quality control (QA/QC) for sampling activities, duplicate soil samples (1 sample for each set of 10 soil samples) and daily equipment blanks (one per day) will be submitted to the analytical laboratory for testing. In addition, a duplicate water sample will be submitted for analysis along with each set of water samples.

As an additional quality control procedure, the analytical laboratory will provide QA/QC data with the chemical testing reports. The data supplied by the laboratory will include information on laboratory blanks, laboratory duplicates, spike recoveries, and parameter control limits.

and the second

-5-

MCLOUMY STEEL PRODUCTS CORPORATION

1491 West Jefferson * Trenton, Michigan 48183 Telephone (313) 285-1200

September 16, 1988

Mr. Steven Sliver
Waste Management Division
Michigan Department of Natural Resources
Stevens T. Mason Building
Box 30028
Lansing, Michigan 48909

Subject: Emission Control Dust Storage Area Closure Plan

Reference: McLouth Steel Products Corporation

Trenton, Michigan Plant EPA ID No. MID 017 422 304

Dear Mr. Sliver:

Enclosed please find our revised closure plan, which has been modified in response to your letter dated August 23, 1988 and our subsequent discussions.

Please contact the undersigned at 285-1200, if there are questions or comments on this information.

Very truly yours, MCLOUTH STEEL PRODUCTS CORPORATION

D. S. Windeler

Manager of Environmental Affairs

cc: J. R. Turek
P. F. Coles - SEG
S-862

CLOSURE PLAN FOR EMISSION CONTROL DUST STORAGE AREA

PREPARED FOR:

McLOUTH STEEL PRODUCTS CORPORATION TRENTON, MICHIGAN

PREPARED BY:

SEG ENGINEERS & CONSULTANTS, INC. 1120 MAY STREET LANSING, MICHIGAN 48906

SEPTEMBER 16, 1988

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CLOSURE PLAN FOR EMISSION CONTROL DUST (ECD) STORAGE AREA

This closure plan has been prepared in accordance with 40 CFR 265 Subpart G. This plan identifies all steps that will be necessary to close the ECD storage facility at the McLouth Corporation's Trenton, Michigan plant (MID 017423304).

The ECD storage area is located on the northern portion of the Trenton property as shown in Figure 1. The ECD is contained in this area by berms of on-site fill material approximately ten (10) feet high. An approach ramp has been constructed to allow the transport vehicles to end dump over the top of the berms into the storage area.

McLouth will maintain an on-site copy of the approved closure plan and all revisions to the plan until the certification of closure completeness has been submitted and accepted by MDNR Waste Management Division.

Additionally, SEG will prepare a site safety plan to cover the conduct of all persons associated with the sampling and subsequent closure activities.

McLouth will implement this plan immediately following approval of this plan by MDNR.

Upon completion of closure, McLouth will submit a certification that the facility has been closed in accordance with the specifications in the approved closure plan. This certification will be submitted to the MDNR and completed by a registered professional engineer and by McLouth.

I-1a Closure Performance Standard (40 CFR Section 265.111)

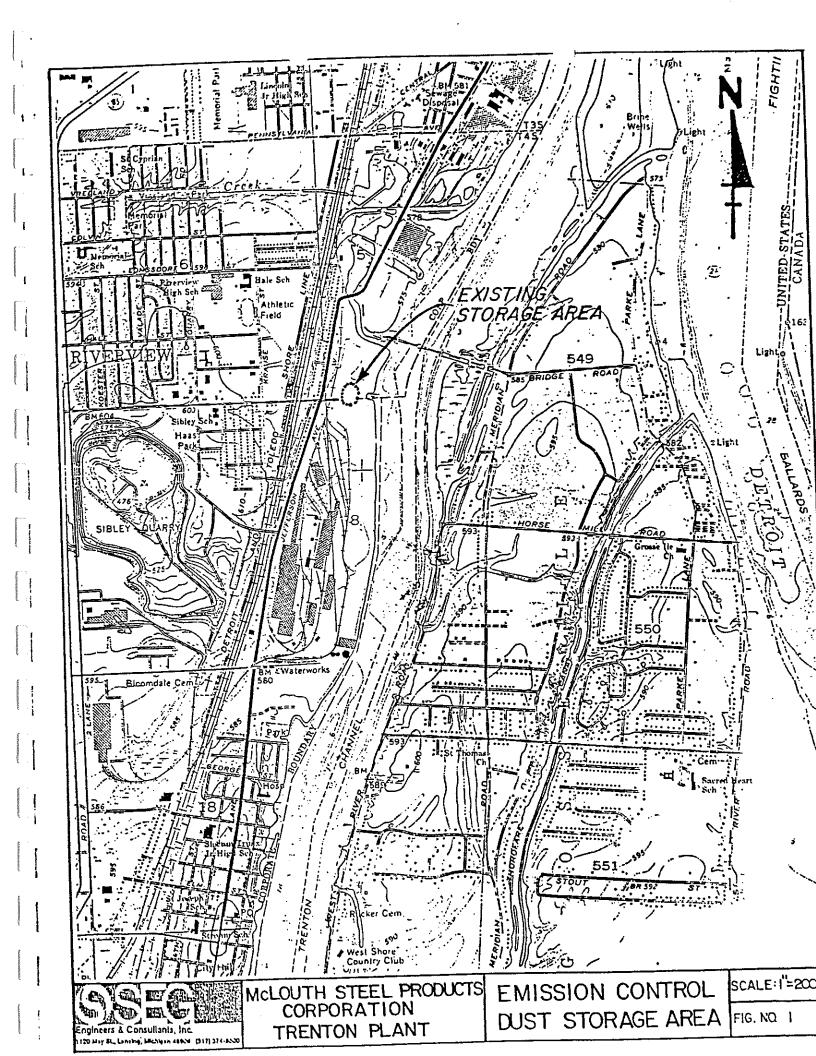
This facility will be closed in a manner that will minimize the need for further maintenance and controls; will minimize or eliminate threats to human health and the environment; and will avoid post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters or to the atmosphere. All contaminated materials will be removed to a licensed hazardous waste management facility. This plan will describe how this will be accomplished.

I-1b Final Closure of Facility

McLouth Steel plans to close the storage area at its Trenton, Michigan facility as soon as regulatory approval has been received.

I-1c Maximum Waste Inventory

The maximum inventory of wastes in storage at any time based on



TEXT OF FIRST PARAGRAPH ON PAGE 3 OF APPROVED CLOSURE PLAN

The complete inventory of material will be removed starting thirty days after regulatory approval of both the closure plan and disposal arrangements. It is currently estimated that complete removal and disposal at an approved hazardous waste management facility will take about one month. Removal of this material will be in compliance with the procedures in I-1d(4).

inventory records and inspection reports is estimated to be 6,000 cubic yards of dust.

I-1d(1) Inventory Removal (Revised 9/28/89)

Pilot testing to meet stabilization requirements will begin within thirty days of receipt of MDNR approval of both the closure plan and disposal arrangements. It is currently estimated that the period required for testing, disposal site acceptance, stabilization, and complete removal will take about three months. Pilot testing and stabilization will follow the procedure outlined in APPENDIX E. Handling and removal will follow the procedures in I-1d(4).

I-1d(2) Closure of Storage Area

Following removal of the ECD, a soil sampling program will be initiated to determine if a clean closure has been attained. As shown on Figure 2, a surveyed grid will be superimposed over the storage area. The grid spacing, 50 feet, was suggested by the Michigan Department of Natural Resources. Soil samples will be acquired at selected grid points as shown on Figure 2 at the surface and at a depth of two (2) feet. Background soil samples will be taken as shown on Figure 2 and will be of the same horizons as the remaining samples.

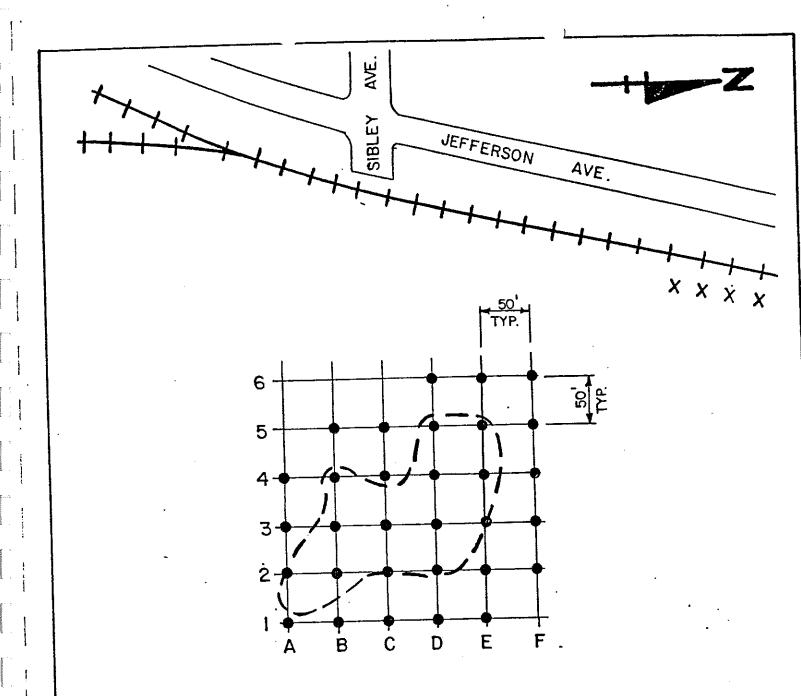
All soil samples will be collected using stainless steel spoons which have been rinsed and cleaned with deionized water prior to use and wrapped to reduce the possibility of contamination. A separate clean spoon will be used for each sample. Samples will be collected in 850 ml glass jars with tops having a teflon liner.

Soil samples will be subjected to analytical testing for those parameters in Table 1. Table 1 also indicates the appropriate protocols and detection limits.

		TABLE 1 - TE	ST METHODS Anticip	ated
Parameter	Test Method	Reference	Detection	
рН	Electrometric- meter	SW846 Section 9040	Soil (mg/kg) .01 std. units	Liquid (mg/L) .01 std. units
Barium	Atomic absorption	7 080	1.0	.025
Cadmium	Atomic absorption	7130	0.2	.005
Lead	Atomic absorption	7420	0.4	.010
Chromium (Hexavalent	Atomic absorption	7197 solid, 7196 liquid	.05	. 005

SM - Standard Methods for the Examination of Water & Wastewater, 16th ed.

SW846-EPA - Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, 3rd. ed.



LEGEND

- X BACKGROUND SOIL SAMPLE SITES
- SOIL SAMPLE SITE

Utilizing the statistical procedures outlined in Attachment 1, the analytical results from the storage area samples will be compared to background levels. If the study area results are within the range of plus or minus three (3) standard deviations, it will be concluded that no significant impact has occurred as a result of the storage operation. If the results are outside this range, contamination will be assumed. If the evaluation shows that contamination is present, a contingency plan will be implemented to carry out additional investigation. This contingency plan is described later in this closure plan.

I-1d(3) Contingency Plan for Additional Soil Sampling

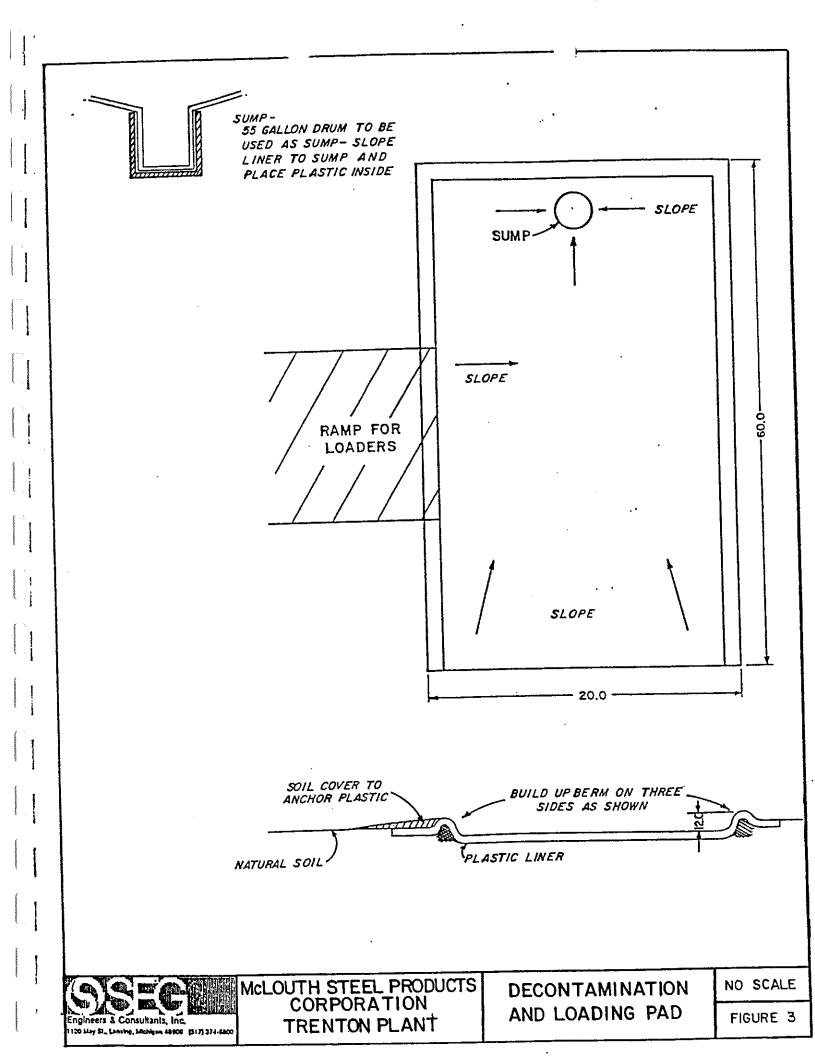
If the results of the initial testing show that contamination is present, additional soil testing will be required. If contamination is present at the two (2) foot depth, at a particular sample site, samples will then be acquired at the four, eight and ten foot depths. If contamination is present at the site perimeter, samples will be taken from one additional grid point. The depths at which samples will be acquired will depend upon the results of the preliminary testing. If preliminary test results show contamination at the surface only, then the new sample site will be sampled at the surface only. If contamination is at the two (2) foot depth, then the samples will be acquired at the surface, two, four, eight and ten foot depths.

All sampling and analytical protocols will be as previously described.

I-1d(4) Soil Removal

Once the horizontal and vertical extent of soil contamination has been determined, an excavation program will be initiated to remove the contamination. Excavation will be accomplished using a backhoe or other type of excavating equipment. A decontamination and loading pad (as shown in Figure 3) will be constructed immediately adjacent to the storage area. All loading will take If the hazardous waste management place within this area. facility does not offer truck decontamination facilities, the interior of the transporting trucks will be lined with plastic and the plastic will be draped over the side of the truck to prevent spills from contacting the truck tires. When the truck is loaded the plastic will be folded over the top of the load and the truck will be tarped in a conventional manner. Any spills on the plastic containment will be cleaned prior to moving the If the proposed short term storage tank is complete at the time of soil removal, the concrete pad associated with the tank will be used in lieu of the plastic covered loading pad previously discussed.

Following removal of the contaminated soil, soil samples, over



the grid used previously, will be acquired to demonstrate a clean closure. Samples will be acquired and tested using the protocols as previously discussed. Samples will be tested for the same parameters as during the investigation.

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Once the excavation is complete and all transporting trucks have left the site, the excavating equipment will be decontaminated on the decon pad. Four samples of raw water will be taken prior to Following the cleaning, three rinse water samples the cleaning. taken from the sump to demonstrate that the decon and rinse water Both raw water effective. procedures were samples will be acquired in 60 ml glass jars with teflon lid Samples from the sump will be taken when the rinse waters appear clean of turbidity and the sump has been rinsed To demonstrate that the rinse waters are clean, the three rinse sample results must be equal to or less than the raw water results. However, all rinse waters will be used as make-up water in the electric arc furnace emission control system. rinsate would help control the dissolved solids in the scrubber recycle water. The treatment of the scrubber blowdown is managed under NPDES Permit Number MI0002399.

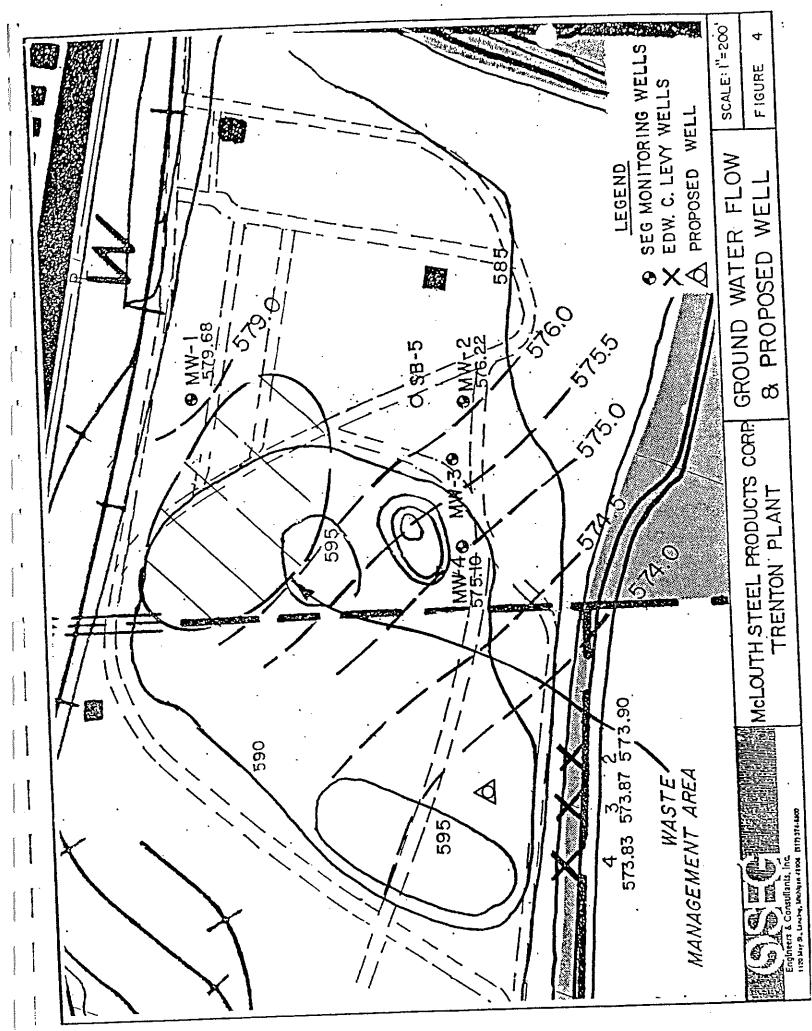
All plastic containment materials will be folded into the sump drum for disposal at a licensed hazardous waste management facility.

I-1e Ground Water Investigation

Four monitoring wells presently exist on the site. These were installed as part of a ground water study to define the hydrogeologic environment in connection with the proposed construction of a new emission control dust storage area. MW 1 is located such that it could be utilized as an upgradient well for the existing storage area. Of the three remaining wells, MW 3 and MW 4 could be utilized as downgradient monitoring locations for the existing storage area.

Based upon the preliminary evaluation of ground water characteristics, an additional downgradient monitoring well will be located approximately 500 feet due south of MW 4 as shown on Figure 4. The well will be constructed of two (2) inch I.D. flush joint Schedule 40 PVC with a five (5) foot PVC well screen. The screen will be sand packed to one foot above the top of the screen and the remaining annular space sealed with bentonite. A protective locking casing cemented into the ground will be provided.

Following installation of the well, all wells (\$1, 3, 4 and 5 (new)) will be sampled and tested for dissolved barium, cadmium, lead, hexavalent chromium. All sampling techniques shall be in conformance with USEPA SW 846. Analyses shall be in conformance with Table 1. The analytical data will then be used in better



defining the need for additional studies.

I-1f Certification of Closure

Following the completion of the closure steps outlined previously, McLouth will provide a certification that the storage area has been closed in accordance with the approved closure plan. This certification will include the following items:

- certification statement by the owner/operator
- certification statement by an independent registered engineer
- site safety plan
- manifests (or manifest summary) for the shipment of all wastes generated by closure activities
- summary of decontamination procedures and wastewater disposal
- summary analysis of closure activities including time table, weather conditions, runoff controls, equipment decontamination, soil and ground water results, etc.
- results of all tests used to determine clean closure
- statistical comparison of soil samples and background results
- sampling and analysis procedures
- final depths and elevations of waste and soil excavations
- properly labeled and easily identified sampling station map including background sampling stations
- of excavated areas final restoration summary of including type of fill material used and future land and corrective use outline, post-closure program action, if applicable
- copy of the approved closure plan and letter of closure approval

I-1f Closure Cost Estimate

A closure cost estimate is included in Table 2.

I-1g Closure Schedule

A schedule for the activities associated with the closure of the storage area is attached as Figure 5.

SEG COST ESTIMATES

(BLANK)

FIGURE 5 - CLOSURE SCHEDULE

22 ᄗ 23 19 18 17 16 13 14 15 12 Ħ 10 ರಾ œ ~ DURATION (weeks) ဖ S က Ø ↤ ACTIVITY

23

- a. Soll Sampling
- b. Soil analysesc. Data evaluation
- d. Contingency sampling analyses & evaluation
- e. Soil removal design
- f. MDNR approval for remedial action
- g. Remedial actions including selection of contractor
- h. Certifications
- = If this task is not required, move up remaining tasks
- = Indicates activities on-going prior to DNR approval, such as preparation of bidding documents, disposal approvals, etc. ł

Closure schedule is contingent upon availability of licensed disposal sites. Note:

2 жеекв

ATTACHMENT 1 STATISTICAL PROCEDURES

- Act 64/RCRA Clean Closure
- Real Estate Transactions
- Non-Act 64/RCRA Facilities
- Clean Declaration

HOW CLEAN IS CLEAN?

The State of Michigan has a straight forward position on the question of restoration of groundwater contaminated by an illegal discharge, how much clean-up is required when closing a hazardous waste facility (clean closure), or cleanup of a spill of hazardous materials. State Law, Act 245 and the associated "Groundwater Regulations" require restoration of a contaminated aquifer to its original condition (see paper by J. Bails entitled Aquifer Restoration, March 8, 1984).

Although some proposals will be made to leave some level of contaminants in the soils or groundwater, our position must be that contaminants be removed to non-detectable or, in the case of materials which naturally occur in soils, background levels. Soils and/or groundwater sampling must be included in any cleanup or closure to demonstrate that the site has been effectively restored to its original condition. Cleanups to any other level must be carefully worked out with Enforcement staff input and approval, taking into account applicable regulations and legal responsibilities. Waste and/or soil removed should be classified for disposal as bilities. Waste and/or soil removed should be classified for disposal as hazardous or nonhazardous to determine disposal options and handling requirements (i.e. solid waste under Act 641 versus a hazardous waste under Act 64).

The following are recommended procedures for evaluating a proposed cleanup and site restoration. These procedures are not "absolutes". Other approaches may be developed and submitted for approval. This system, if used, however is acceptable.

A. ESTABLISHING SOIL BACKGROUND

- 1. Background should be established for site specific waste constituents or specific chemicals used in various processes or facility operations. These should fall into three general categories: a) the EP toxic METALS (arsenic, barium, cadmium, chromium, copper, lead, mercury, silver, selenium and zinc) using a total metals (dry-weight mg/kg) test procedure for the soil analysis, b) ORGANIC CONSTITUENTS, and c) other SITE SPECIFIC WASTE CONSTITUENTS (example Cyanide) as totals.
- 2. A bare minimum of 4 samples should be used to establish "background" in soils to account for natural occurrences and variability within each distinctive soil horizon. Background samples must be collected in an "uncontaminated" area. Based on waste type, contaminant mobility, operation practices and soil type (sand, silty sand, clay) an estimate of contamination depth should be made and background samples taken at comparable depths. Multiple soil horizons should have "background"

"Large size" sites (over 10 acres) Use equation #1

- 2. Sampling format should include either a) all grid point stations as determined by B.1., or b) using the Systematic Random Sampling Method as referenced in SW-846, Section 9.1.1.3.3, or c) using an approved "phased" method of the grid coverage as determined in B.1.
- 3. Depth increments would be dependent on type of subsurface soils. For soil testing within the contaminated area we would generally recommend using 0.25-0.5 foot depth intervals for clays and 1.0 to 5.0 foot depth intervals for silts-sands. The selection of depth increments would also depend on initial soil contamination concentrations (i.e. at ground surface), mobility of contaminant, or height of liquid head on ground surface. Samples collected from specified depth(s) could be either single or in multiple replicates.

C. ORGANIC CONSTITUENT EVALUATION

- Usually, non-detectable levels would be used to delineate clean versus contaminated soils. The following analytical methods are to be used on soil samples:
 - a. For volatile organics, sample preparation should follow EPA SW-846 techniques (8.24, 8.82 or 8.83). Sample collection, preservation and handling is to be referenced to appropriate Method 8010, 8015, 8020, or 8030 for pertinent information. Analysis should be done following EPA Methods 5020 (head space) or 5030 (purge & trap) using EPA validated methods 601, 602, and/or 624 accordingly.
 - b. For extractable compounds, sample preparation should follow EPA techniques (8.85 or 8.86). Procedures should be completed following EPA Methods 3540 (Soxhlet) or 3550 (Sonication). The resulting extract should be analyzed following the conditions described in EPA Method 625.
 - 2. The quantitative limit of detection is defined as: st/sb =3.0, where st is the gross analyte response and sb is the average instrument background single response (noise). The instrument background signal response (sb) is based on the height of peak to peak response of the baseline in an area close to the actual or expected analytic peak. The detection limit is defined as the quantity of the analyte which produces a signal response greater than or equal to three (3.0) times the background instrument noise.
 - 3. An alternative method which uses background levels in native soils may be used as a baseline for measuring contamination. Such an alternative method must be approved by the Waste Management Division in writing.

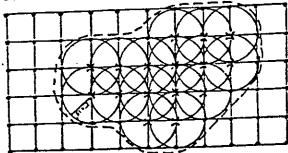
require sample data at each station to be two or more samples. No composite samples. (n 2)

- Average Replicate T-test (TEGD Sept. 1986)
- 4. Using mean and variance of background values to establish an upper limit for delineating significant concentrations such as:
 - a) x + 3S of "background" data as the maximum allowable limit, where 3S equals three times the standard deviation, and \overline{x} equals the mean. Note this statistical method only requires one sample per station.
- 5. For non-detect values, it is recommended to use either of the following procedures for any of the preceding statistical methods:
 - a) alternate "O" and detection value (dv) for a net value of half the detection value with a variance, or
 - b) the Continuity Correction procedure with the t-test, where if background data is non-detect then use S = 1 dv. Attachment 2 is a summary explanation for performing the t-test with Continuity Correction.

G. EXCAVATION

Excavation of contaminated areas should be based on the established grid system interval (as recommended in B.1). The radius of excavation around the contaminated sample point(s) is equal to the grid interval (GI = r). Excavation depth would be to the deepest point of contamination. After excavation, the grid must be resampled to verify that the area is free of contamination. If continued contamination is detected, the excavation format is repeated until a satisfactory result is obtained.

Example:



GL = 150 A = 11,250GI = 15.3

Sample Station
x Contaminated Station
r = GI = 15 feet

Contaminated soil removal in granular non-cohesive soils may stop at the water table, if encountered, except all waste material must be removed even if it is below the water table. If contaminated soils remain, groundwater monitoring must be done to check for contamination. If contamination is found, groundwater purging or some other method of plume management must be developed, approved and implemented.

Inert designation - If soil concentrations are above background but can be demonstrated to meet the inert designation (12-14-87 Draft Document from Waste Evaluation and Manifests Unit - see Attachment 3) then soils can remain in place.

REAL ESTATE TRANSACTIONS/NON-REGULATED (RCRA-ACT 64) FACILITIES

Waste Material

Characteristic - If ignitable reactive, corrosive, or EP Toxic, then waste must go to a licensed hazardous waste facility. If not characteristic, then waste may go Act 64/RCRA facility, or an Act 641 landfill if approved.

Soils

- Metals If not EP Toxic, but above background, soil may go to an Act 641 landfill.
- Reactive If not reactive or pretreated so no longer reactive, soil may go to an Act 641 landfill.
- Organics Soils may go to a licensed Act 64/RCRA facility, or to an Act 641 landfill if the landfill will accept it.
- Inert designation if soil concentrations are above background but meet criteria of inert designation (see Attachment 3) then the soils can remain in place.

I. CLEAN CLOSURE CERTIFICATION CHECKLIST

This checklist was developed to review RCRA clean closures. Due to direct reference to 40 CFR 264 Subpart G by Act 64, Rule 613; Act 64 closures should also be evaluated by this checklist.

Documentation supporting the independent registered professional engineer's certification can be requested under 40 CFR 264.115 and 265.115 (as of October 29, 1986). The owner/operator must submit at least two copies of certification documentation, one for MDNR, and one for the EPA files.

The checklist identifies items recommended to properly evaluate a closure certification. These items are not "absolutes". Other information or substitutions may be provided with technically justify and certify a "clean closure" or "clean declaration".

This checklist can be used for land disposal facilities and sitorage facilities. Several of the items would not be required for as storage facility where testing was minimal. Items 1 thru 5 would be required for all closures. Items 6 thru 11 would be optional for storage facilities, dependent on extent of testing required. Land disposal facilities would require all items listed.

MICHIGAN DACKGROUND SOIL SURVEY

TOPSOIL - Results in mg/kg

TOPSOIL	Ag	A)	As)ı 	Cd	Co	Cr	Eu	Fe	Hq	Li 	in	Wi 	P)	Se	2n	CN
IMPIVIDUAL SLACIAL LOBES a-Erie eean st. dev.	,,,,,,,,,		1 11.0 ERR	1 73.7 ERR	1 1.0 ERR		1 13.0 ERR	1 17.0 ERR		1 0.10 ERR) 16.0 ERR	1 6.0 ERR		EROL	1 0.71 ERR
n-Saginaw mean st. dev.		8 4481 869	0.8 2.8 8.	8 41.3 8.7	8 1.0 0.0		8 12.4 4.1	8 11.6 3.4	8 8063 1747	0.11 0.16	*****	8 237.5 41.4	7.8 2.0	8 16.0 17.2	0.28 0.09	39.1 18.5	9.16 0.10
n-Michigan mean st. dev.	****	*****	4. 2.3 1.2	4 45.8 10.3	4 1.0 0.0	4 2.5 0.0	4 12.0 1.2	4 10.4 4.3	4 4850 451	4 0.05 0.00	2.1 0.8	4 561.3 290.7	4 6.9 1.2	4 12.5 1.3	4 0.25 0.00	21.5 2.9	
n-West U. P.		4 1510 74	4. 0.8 0.5	48.7 8.2	4 1.0 0.0	4 2.5 0.0	4 6.9 0.9	4 42.1 27.5	4 2475 168	4 0.05 0.00	4 1.0 0.0	4 177.5 22.2	3.3 1.5	4 24.0 7.8	4 0.25 0.00	61.0 6.6	
	- 07752	- 22222		= ======	: :::::	: : :::::	* *****	******	ITEEE	EESEEE	**====	*******	# E 3 E 3 E	*=====	22222	: 22225	: E===.
COMBINED SUMMARY:	Ag	Al	As	Ba	Cd	Co	Cr	Cu	Fe	Hg 	Li	#tn	Ni 	Pb	Se	2n	CN
n ainisub		17 1540 6160	0.3	30.7	1.0	2.5	5.5	4.5		0.05	1.0	110.0	17 2.5 16.0	6.0	0.25	18.0	0.1
mean st. dev.		352/ 157	3.	2 46.0	0 1.0	2.5	11.9	18.8	5863	0.08			7.0 3.4				
sean + 2 SD sean + 3 SD		667 824	4 B.	1 48.				_	11296	0.30 5 0.43							

n - number of samples for that parameter

minimum - lowest value in data set

maximum - highest value in data set

mean - average concentration of data

st. dev. - sample standard deviation

mean + 2 SD - mean value plus 2 standard deviations. If the data is normally distributed, then 95% of the values should be less than this number.

mean + 3 SD - mean value plus 3 standard deviations. If the data is normally distributed, then 99% of the values should be less that this number.

THIS BACKGROUND SOIL DATA IS FOR INFORMATION AND COMPARISON PURPOSES CHLY. IT IS NOT INTENDED TO REPLACE SAMPLES TAKEN AT THE SPECIFIC SITE IN QUESTION.

> WASTE MANAGEMENT DIVISION MICHIGAN DEPARTMENT OF MATURAL RESOURCES

MICHIGAN BACKGROUND SOIL SURVEY

SANDY CLAY - Results in mg/kg

Ca

Cd

SANDY CLAY

st. dev.

mean + 2 SD

mean + 3 SD

Fe

jin.

37.5 0.01

39.6 0.03

0.25

38.1

47.0 0.25

38.5

Li

			-														
INDIVIDUAL LACIAL LOBES -Erie ean t. dev.							·	,,,,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			_						 12
-Saginaw mean mean		3 8063 59	15 9.1 8.4	3 40.1 1.5	15 1.0 0.2	3 7.2 0.3	15 14.8 8.1	15 15.5 4.9		0.05 0.00	3 11.0 0.0	336.7 20.8	15 21.7 8.4	15 20.3 8.9	3 0.25 0.00		0.01
n-Michigan Bean St. dev.					,		*****		*****				*****	*****	*****		40 شده ميشيخ
n-West U. P. mean st. dev.													- 220774		· 123 35 1	#####	####
COMBINED SUMMARY:	=== ===== Ag	= ===== Al	As	: ====== Ba	: ::::::: U	Co	Cr	taces Cu	fe	Hg	Li	: ::::::: #Ln	. .	Pb	Se	7 n	ţ)
n minimum mariaum	<u> </u>	3 8020 8130	15 1.1 22.4	38.7	0.6	7.0	8.0	10.0	3 15500 15700	0.05	3 11.0 11.0	-	15.0	5.0	0.25	31.0 35.0	0.
****																33.3	0

n - number of samples for that parameter

1.4

1.6

minimum - lowest value in data set

24.8 43.1

33.2 44.6

8181

8239

maximum - highest value in data set

mean - average concentration of data

st. dev. - sample standard deviation

mean + 2 SD - mean value plus 2 standard deviations. If the data is normally distributed, then 95% of the values should be less than this number

30.9

39.0

7.7

8.0

mean + 3 SD - mean value plus 3 standard deviations. If the data is mormally distributed,

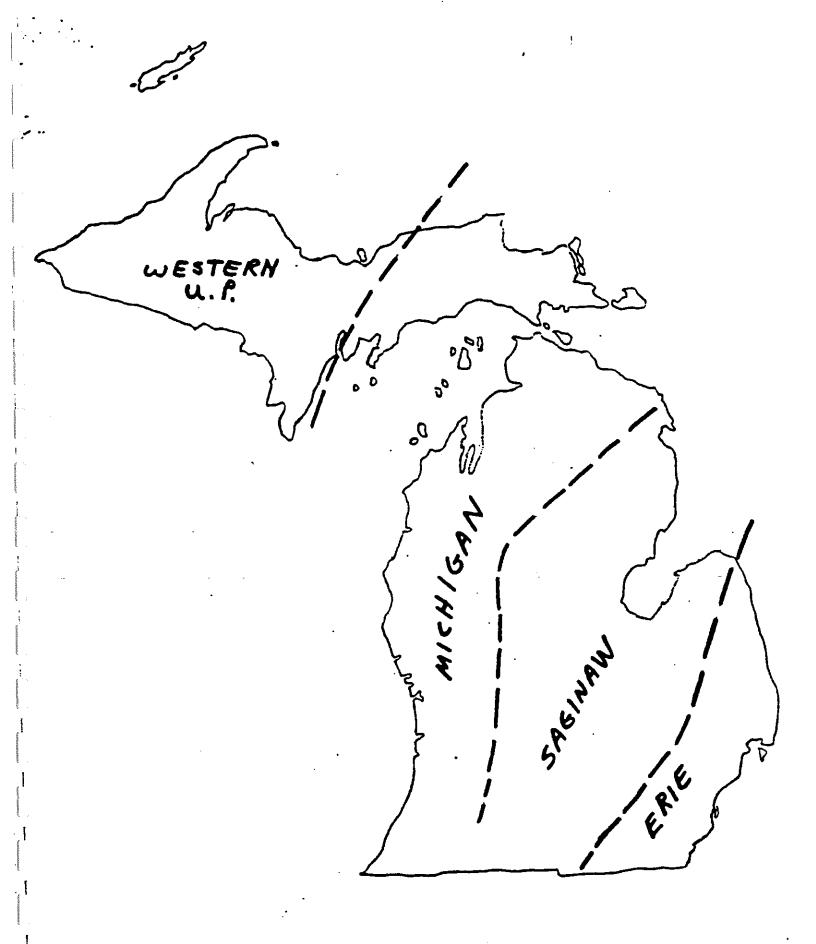
25.3 -15864 0.05 11.0 378.3

30.2 15980 0.05 11.0 399.1 46.9

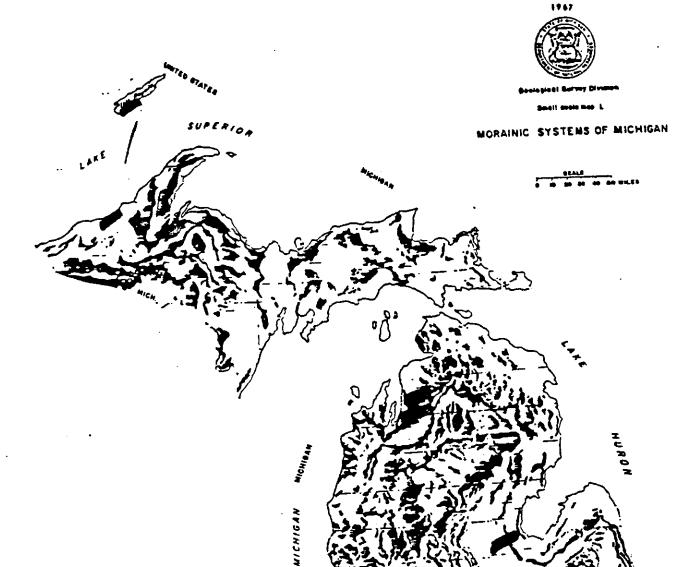
then 991 of the values should be less than this number. THIS BACKGROUND SOIL DATA IS FOR INFORMATION AND COMPARISON PURPOSES ONLY. IT IS

NOT INTENDED TO REPLACE SAMPLES TAKEN AT THE SPECIFIC SITE IN QUESTION.

WASTE MANAGEMENT DIVISION MICHIGAN DEPARTMENT OF NATURAL RESOURCES



GENERAL BOUNDRIES
OF
GLACIAL LOBES



ERIE

RICHIGAN BACKGROUND SOIL SURVEY

SAND - Results in mg/kg

SAND	Ag	Al	As	}a 	Cd	Co	Cr	Cu	Fe	Hg 	Li 	Ti n	Ni	Pb	Se	2n	CN
INDIVIDUAL GLACIAL LOBES n-Erie mean st. dev.	15 0.17 0.23	,	15 2.3 1.4	15 125.9 50.1	15 0.2 0.2		15 3.3 3.6	15 8.7 3.2		14 0.02 0.01			1 18.0 ERR	15 4.5 4.5	15 0.20 0.02	15 25.2 9.8	*****
n-Saginaw mean si. dev.			8 2.7 0.6		8 1.4 0.1		8 3.0 1.1	5.8 0.7		pospee :			9.9 1.4	14.0 0.0	****		0.01 0.00
m-Michigan mean st. dev.	3 0.20 0.00		3 0.5 0.3	4 6.5 2.1	3 0.2 0.0	•	7 3.6 5.5	7 6.1 4.5		3 0.04 0.02			7 7.6 11.8	7.0 3.0	3 0.20 0.00	7 9.9 6.0	
n-West U. P. mean st. dev.		3 1237 110	3 0.5 0.0	3 5.6 0.4	3 1.0 0.0	3 2.5 0.0	3 8.8 2.6	3 4.2 0.8	309 2022 2	3 0.05 0.00	3 1.0 0.0	37.0 6.0	3 3.3 1.4	3 2.5 0.0	3 0.25 0.00	5.6 6.3 5.0	
	: ======	=====	2222	= ======	ESTSEE	======	22222	******	======	******	*****	122222	*******	: \$22221	* *****		
COMBINED SUMMARY:	Ag	Al	As	Ва	Cd	Co	Cr	Cu	Fe	Hg	li	Ħn	Ni - ——	Pb	\$e	2n	CN
n einisus maxibus	18 0.10 1.00	3 1110 1310	29 0.2 5.5	5.2	29 0.1 1.6	3 2.5 2.5	33 1.0 16.0	33 1.2 15.0	3 2700 3300	20 0.02 0.06	1.0 1.0	31.0 43.0	1.6	1.2	0.16	4.7	0.0
acan si. dev.	0.18 0.21	1237	2.	1 87.8	0.6 6.0	2.5 0.0	3.8 3.8	7.0 3.3	305 3033								
mean + 2 SD mean + 3 SD	0.60	1457		7 228.4 0 298.6				13.7 17.0	3644 3950								

n - number of samples for that parameter

minimum - lowest value in data set

maximum - highest value in data set

mean - average concentration of data

st. dev. - sample standard deviation

mean + 2 SD - mean value plus 2 standard deviations. If the data-is mormally distributed,

then 95% of the values should be less than this number

mean + 3 SD - mean value plus 3 standard deviations. If the data is normally distributed, then 991 of the values should be less than this number.

THIS BACKGROUND SOIL DATA IS FOR INFORMATION AND COMPARISON PURPOSES ONLY. IT IS MOT INTENDED TO REPLACE SAMPLES TAKEN AT THE SITE IN DUESTION.

> WASTE MANAGEMENT DIVISION MICHIGAN DEPARTMENT OF NATURAL RESOURCES

MICHIGAN BACKGROUND SDIL SURVEY

CLAY - Results in mg/kg

CLAY	Ag	A1	As	}4	Cd	Co	Cr	Ca	Fe	Ng	Li 	I In	Ni	Pb 	Se	1n	CM
INDIVIDUAL GLACIAL LOBES n-Erie mean st. dev.	49 6.99 0.93		45 14.7 13.7	65 103.1 63.2	89 1.0 0.7	3 12.3 1.2	65 24.2 11.0	65 19.6 7.2	3 21433 503	55 0.04 0.03	3 22.7 0.6	3 450.0 0.0	\$6 76.6 9.2	84 12.6 6.7	52 0.43 0.16	84 50.8 12.4	13 0.26 0.04
m-Saginam mean st. dev.			32 7.7 8.4		32 1.7 0.5		32 12.1 3.5	32 16.4 5.0				*****	32 26.0 8.4	32 23.3 5.7			32 0.01 0.00
m-Michigan mean .st. dev.	11 0.45 0.49		11 2.2 0.8	*****	11 0.2 ERR	• 	11 8.5 0.6	11 16.1 2.0		11 0.12 0.20		and a complex	11 33.6 4.0	11 19.1 6.9	11 0.20 ERR	11 40.6 7.0	11 0.05 ERR
m-West U. P. Gran st. dev.		3 9538 1177	3 2.0 0.2	3 94.7 2.9	3 1.0 0.0	3 6.3 0.8	3 27.0 1.0	1.5	3 11017 1200	3 0.05 0.00	3 11.0 1.0	3 256.7 23.1	3 20.0 1.7	3 2.5 0.0	3 0.25 0.00	30.7 3.2	: #1115
COMBINED SUMMARY:	4 = ==================================	A)	As	Ba	Cd	Co	Cr	Cu	Fe	Hg	Li	H n	Ni.	Pb	Se	2n	CN
n minimum maximum	60 0.10 3.10	3 8400 10750	0.2		135 0.1 3.5	5.5 13.0	111 3.9 53.0	111 9.9 52.0	9650	0.01	10.0		4.0	130 2.5 32.0	66 0.12 0.70	22.0	0.01
mean st. dev.	0.89 0.89	9538 1177		102.8 5 61.8		9.3 3.4			16225 3 5765			106.9	8.8	8.1	0.17	12.6	6 0.11
mean + 2 SD mean + 3 SD	2.67 3.56	11892 13068		7 226.3 9 288.1					1 27754 4 3351 ⁴								

n - number of samples for that parameter

minimum - lowest value in data set

maximum - highest value in data set

mean - average concentration of data

st. dev. - sample standard deviation

mean + 2 SD - mean value plus 2 standard deviations. If the data is normally distributed, then 95% of the values should be less than this number.

mean + 3 SD - mean value plus 3 standard deviations. If the data is normally distributed, then 99% of the values should be less than this mumber.

THIS BACKGROUND SOIL DATA IS FOR INFORMATION AND COMPARISON PURPOSES ONLY. IT IS NOT INTENDED TO REPLACE SAMPLES TAKEN AT THE SPECIFIC SITE IN QUESTION.

> WASTE MANAGEMENT DIVISION MICHIGAN DEPARTMENT OF NATURAL RESOURCES

- Manifests (or some type of manifest/waste removal summary) of where and how much waste was shipped.
- Certification statement is needed by the onwer/operator AND an independent registered engineer. All independent registered professional engineer certificates must have an original stamp on at least one copy.
- Summary of decontamination procedures (pressure wash, steam clean, etc.) and how waste water was disposed.
- 4. Summary analysis (include conditions of haul roads, time table, soil and groundwater results, weather conditions, runoff controls, equipment decontamination, etc.).
- Results of all tests used to determine clean closure (chart, tables, lab sheets).
- Statistical comparisons on sampling results compared to background. This should include full computations on background and statistical analysis.
- Sampling and analysis procedures (specify references).
- 8. Final depth and evaluations of excavations of wastes and soils.
- 9. Properly labelled and easily identified sampling grid stations (map); including background stations.
- 10. Groundwater data (and statistical evaluation) used to determine if groundwater degradation has occurred (usually four sets of replicate analysis for background compared to sampling event after closure activities). Monitor well construction details and sampling and analysis procedures may be required if documentation is not in the file.
- 11. Summary of final restoration of excavated area including information on fill material used and/or future land use outline. If clean closure cannot be achieved (e.g. contaminated soils to water table and groundwater results show contamination) this summary item should be used to address the post closure program and/or corrective action.
- 12. A copy of the approved closure plan and letter of closure approval.

H. DISPOSAL OPTIONS

Disposal of excavated waste or soil, and purged groundwater must be in accordance with all applicable State regulations. For example, air stripping of contaminated groundwater requires a permit from Air Quality Division. Disposal options in the following order of preference include:

- 1. Removal for incineration
- 2. Removal for treatment
- 3. Removal for landfilling
- 4. In-place treatment/stabilization
- 5. Encapsulation/control migration

Proposals for new or innovative technologies or solutions will also be considered. Specific situations are discussed below for off-site disposal options according to the current Michigan regulations. It must be determined whether the waste and the facility in question is regulated or not under RCRA and Act 64 (Hazardous Waste Laws).

RCRA/ACT 64 REGULATED HAZARDOUS WASTE SITES

Waste Material

Listed waste - must go to Act 64/RCRA permitted TSD

 Characteristic waste - Act 64/RCRA TSD, or if treatment renders material non-hazardous, to Act 641 landfill.

Soils

- Metal contamination If EP TOXIC, or a listed metal, contaminated soils must go to an Act 64/RCRA TSD. If soil concentrations are not EP TOXIC but still above background, they can go to an approved Act 641 landfill only if the metal(s) of concern is not listed.
- Reactive a determination that the contaminated soils do not meet the criteria set forth in 40 CFR 261.23(a),5. The test method is "Test Method to Determine Hydrogen Cyanide Released from Waste". Interim proposed method recommended by U.S. EPA SW-846 Section 7.3.3.2. Contaminated soils containing more than 250 ppm total cyanide may be considered reactive. If soils are found reactive, no landfilling is allowed. Soils/wastes must be pretreated to reduce cyanide concentrations so that the contaminated soils are not reactive.
- Organics if listed waste contaminants, then soils are a hazardous waste by the mixture rules. If not listed, then soils should be tested for appropriate waste characteristic test to determine waste classification.

If background sampling has established organic compounds in soils (e.g. coal fragments will given off naphthalene) then contamination would be determined by using a Student's T-test at the 99% level of confidence or other approved statistical method.

D. HEAVY METALS EVALUATION

For metals (for example: As, Ba, Cd, Cr, Cu, Pb, Hg, Ag, Se, Zn, Ni and Mn), it is recommended to use a total metals (dry weight basis mg/kg) test procedure to minimize additional sources of variation since these constituents are naturally occurring. After background is established as per section A.2., contamination would be determined by using a Student's T-test at the 99% level of confidence or other approved method to compare background data to the suspect samples. Any statistically significant increase above background will be considered contaminated.

Sample collection, preservation, handling and preparation is to be referenced to EPA Method 3050. Analysis is to be by flame or furnace atomic absorption spectroscopy. Attachment 1 is a summary of typical soil levels on a State-wide basis for comparison purposes only.

E. WASTE SPECIFIC CONSTITUENTS

For inorganic constituents and waste specific constituents we recommend use of total analysis (dry-weight basis) to minimize additional sources of variation since some of these constituents may be naturally occurring. After background is established (see A.2.), contamination would be determined by using a Student's T-test at the 99% level of confidence or other approved statistical method.

F. STATISTICAL COMPARISONS

 The t-test should be an "approved" method since there are a number of variations. We recommend the Gosset Student T-test (1908) where:

$$t = |\bar{x} - \bar{y}|$$
 with $S = M(s_1)^2 + N(s_2)^2$

$$\frac{S + 1}{N M}$$

$$\frac{N + M - 2}{N + M - 2}$$

and // denotes the absolute value sign, S represents the standard deviation, with N being the population of s_1 , N + M - 2 the degrees of freedom and s_1 , s_2 , ... s_n are the sample standard deviations.

 Cochran's Approximation to the Behrens-Fisher Student's t-test is also available for evaluating background variance versus exceedences (i.e. contamination) as referenced in the 40 CFR 264, Appendix IV. Note this statistical comparison method does established separately (i.e. minimum 4 samples per each soil unit).

ground surface		4 samples
Brown medium-coarse SAND		
Lt. brown silty fine SAND		4 samples
Gray silty CLAY w/trace of fine-medium sand	A company of the comp	4 samples

B. SAMPLING GRID

1. A grid system should be established over the specified closure area. Grid point representation should be proportioned to size of area for equal weighting. It is recommended that one of the following equations be used to determine grid intervals for stationing.

using: 1)
$$\sqrt{\frac{ATT}{GL}} = GI$$
 or 2) $\sqrt{\frac{A}{TT}} = GI$
"large site" "small sites"

where: GL = length of area to be gridded A = area to be gridded (sq. ft.) GI = grid interval

The first equation results in an extremely heavy weighting for small sites but good representation for large areas and the second equation results in a very light weighting for large sites but good representation for small sites. It appears that some boundaries for applying these equations to various size ranges of sites is appropriate. Possible ranges could be a) 0-0.25 acres, b) 0.25-3.0 acres and c) 3.0 acres and greater.

To even further simplify this application we have developed a chart based on an average size range of sites (1 acre = 43,560 sq. ft.).

Site Acreage	Sq. Feet	Grid Interval
0.001-0.25	43-10,890	<pre>20 ft. (minimum 9 sample stations)</pre>
0.025-3.00	10,890 - 130,680	40 ft.
3.00 +	130,680 +	60 ft.

APPENDIX B CLAYTON SOIL ASSESSMENT REPORT







22345 Roethel Drive P.O. Box 8022 Novi, MI 48375 (810) 344-1770 Fax (810) 344-2654 Clayton ENVIRONMENTAL CONSULTANTS

Subsurface Investigation
for the Former
Emission Control Dust Storage Area
at the
Former McLouth Steel Products Corporation
Facility
Trenton, Michigan

Submitted to DSC Ltd.
Trenton, Michigan

Clayton Project No. 13-97153.00 August 19, 1997



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1.0 INTRODUCTION

Clayton Environmental Consultants, Inc. is pleased to submit its report for a subsurface investigation conducted at the former McLouth Steel Products Corporation Facility located at 1491 West Jefferson Avenue in Trenton, Michigan. Clayton conducted this investigation of the closure plan in accordance with its proposal dated October 9, 1996 (Clayton Proposal No. 96DETEMR055) and a revised reporting schedule requested by DSC, Ltd.

The purpose of the subsurface investigation was to evaluate the horizontal and vertical extent of barium, cadmium, chromium, hexavalent chromium, and lead at the former emission control dust storage area located at the site. Clayton understands that McLouth Steel formerly stored a listed hazardous waste (Electric Arc Furnace Dust K061) in a diked area prior to the construction of a regulated storage unit for this material. The electric arc furnace dust (EAFD) was removed and properly disposed of by McLouth Steel.

2.0 SITE BACKGROUND

The former McLouth Steel Products Corporation Trenton, Michigan plant is now owned by DSC Ltd. The plant site is bounded on the west and north by Jefferson Avenue, on the south by King Road, and on the east by the Detroit River. The former stockpile area of EAFD is located on the north end of the property, just north of the east extension of Sibley Road. The EAFD was removed and properly disposed of by McLouth Steel. Figure 1 presents a site location map. A copy of the site health and safety plan has been included as Appendix A.

3.0 SUMMARY OF SUBSURFACE INVESTIGATION ACTIVITIES

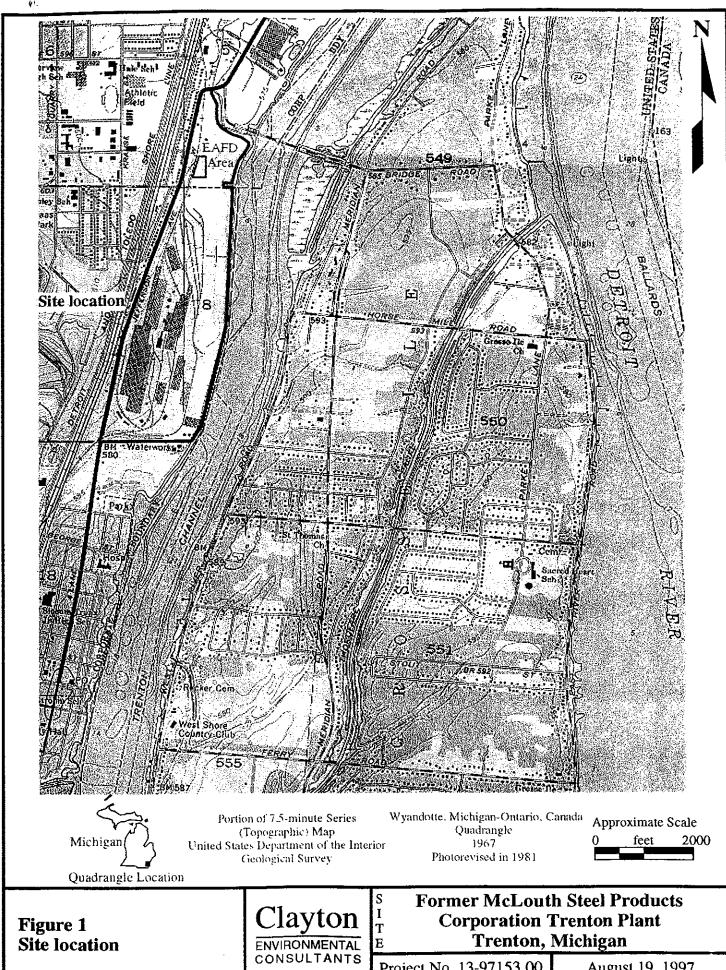
The following is a summary of activities performed as a part of Clayton's subsurface investigation:

- Collection and analysis of closure fill material samples from the former EAFD storage area
- Collection and analysis of background fill material samples north of the former EAFD storage area
- Evaluation of background concentrations

The installation of monitoring wells and quarterly groundwater sampling events at the property will be addressed in a separate report.

3.1 CLOSURE FILL MATERIAL BORINGS

On November 6 and November 7, 1996 and February 5 and February 6, 1997, Clayton (1) retained a drilling contractor (Fibertec, Inc.) to drill fill material borings utilizing a Geoprobe[®], (2) oversaw drilling of the borings, and (3) collected fill material samples. The drilling contractor extracted fill material samples while using the Geoprobe[®] from clear acetate liners installed within the Geoprobe[®] rods. At the completion of drilling and following collection of the samples, the borings were backfilled with bentonite chips.



Project No. 13-97153.00

August 19, 1997



A total of 27 borings (A1 through A4, B1 through B5, C1 through C5, D1 through D6, E1 through E4, and F2 through F4) were advanced on November 6 and November 7, 1996. An additional 19 borings (A1 South, A1 East, A2 South, A4 South, A5, B1 East, B2, B5, B6, C5, C6, D1 East, D2, D7, E1 East, E2, F1, G2, and G4) were advanced on February 5 and February 6, 1997 following receipt of analytical results from the November 6 and November 7, 1996 sampling and discussions with DSC Ltd. personnel.

Fill material samples were collected at the surface and at 2 feet below ground surface. Fill material samples from the surface were collected using a stainless-steel trowel. Fill material samples from beneath the surface were collected using a Geoprobe[®]. Based on visual inspections of samples collected from the borings, Clayton observed a dry, sandy, granular, metallic, slag fill material from the surface to the final depth of the borings (a maximum depth of 4 feet below surface [B2, B5, C5, D2, and E2]). Clayton encountered obstructions drilling Borings A3 and D2 and the borings were advanced to 1-foot-below ground surface. According to the SEG closure plan dated September 16, 1988, fill material samples were collected over a grid with a grid spacing of 50 feet. The fill material sampling locations are shown in Figure 2.

Fill material samples were analyzed for barium, cadmium, chromium, lead, hexavalent chromium, and pH. Following the receipt of analytical results on November 6 and 7, 1996 and discussions with DSC Ltd. personnel, additional fill material samples from the borings advanced on February 5 and 6, 1997 were analyzed for barium, cadmium, chromium, and lead to evaluate the horizontal and vertical extent of compounds of concern.

Clayton retained a surveyor (JCK & Associates, Inc.) to survey the relative locations and ground surface elevations of the borings.

3.2 BACKGROUND FILL MATERIAL SAMPLES

On November 6, 1996, Clayton collected four background fill material samples (BGDA through BGDD) from an area away from the EAFD area along the railroad tracks to determine background concentrations. These background samples were collected at the surface and at a depth of 2 feet below ground surface.

At the request of MDEQ Lansing Waste Management Division, Permits Section personnel, two additional background borings (BGD1 and BGD2) were advanced east of the original four background fill material borings. These background samples were collected at the surface and at a depth of 2 feet below ground surface.

Based on visual inspections of samples collected from the borings, Clayton observed a dry, sandy, granular, metallic, slag fill material from the surface to the final depth of the borings (a maximum depth of 2 feet below surface).

3.3 EQUIPMENT DECONTAMINATION

The drilling contractor and Clayton decontaminated sampling equipment (e.g., Geoprobe® rods, and stainless-steel trowels) before collecting samples. The sampling equipment was decontaminated in the following order:

- 1. Washing and scrubbing the equipment with a nonphosphate detergent solution
- 2. Rinsing the equipment with tap water



- 3. Rinsing the equipment with deionized water
- 4. Air-drying the equipment

Equipment blanks (Equipment Blanks EB-1 and EB-2) were collected by rinsing the Geoprobe® rods and samplers with deionized water and collecting the water in the appropriate containers.

Vehicles were not impacted by drilling activities and were not decontaminated. Fill material generated from drilling was left next to each hole. Decontamination fluid the drilling contractor generated from steam cleaning the Geoprobe® rods was placed on the ground.

3.4 SAMPLE COLLECTION AND PRESERVATION

Fill material samples were collected in laboratory-grade containers, and preserved and stored following United States Environmental Protection Agency (USEPA) Publication SW-846, Testing Methods for Evaluating Solid Waste. Clayton transported the samples in ice-cooled containers to Clayton's analytical laboratory in Novi, Michigan.

For samples intended for barium, cadmium, chromium, hexavalent chromium, and lead analyses, Clayton used sample jars that the supplier (1) washed with detergent, (2) rinsed three times with deionized water, (3) rinsed with acid, (4) rinsed three times with organic-free water, (5) oven dried, (6) rinsed with solvent, and (7) oven dried.

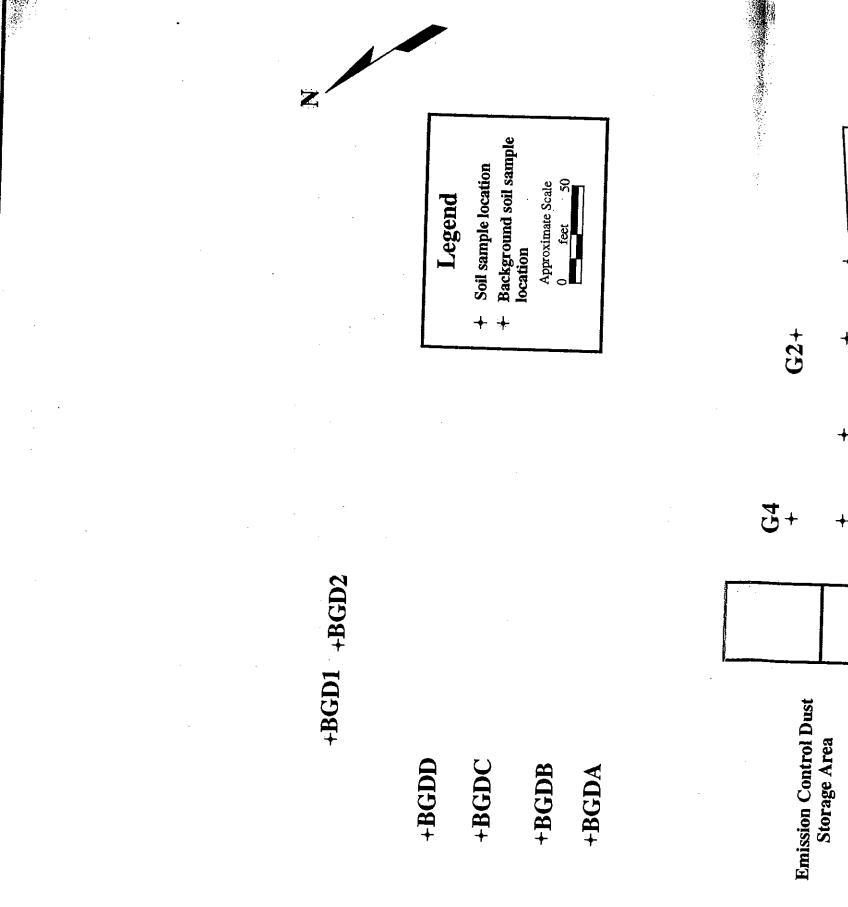
4.0 LABORATORY ANALYSIS

Clayton selected fill material samples for laboratory analysis from the surface and from the 2-foot-deep interval in fill material samples collected on November 6 and 7, 1996. Following the receipt of analytical results from the samples collected on November 6 and 7, 1996, Clayton collected additional samples at selected locations on February 5 and 6, 1997 from the surface, 2-feet below ground surface, and at 4-feet below ground surface.

Clayton analyzed the fill material samples for barium, cadmium, chromium, lead, and hexavalent chromium using USEPA 6000- and 7000-series methods. Clayton analyzed the fill material samples for pH using USEPA Method 9045.

5.0 ANALYTICAL RESULTS

Tables 1 and 2 summarize metal analytical results from the November 6 and 7, 1996 and February 5 and 6, 1997 fill material sampling. Detailed analytical reports are included as Appendix B.



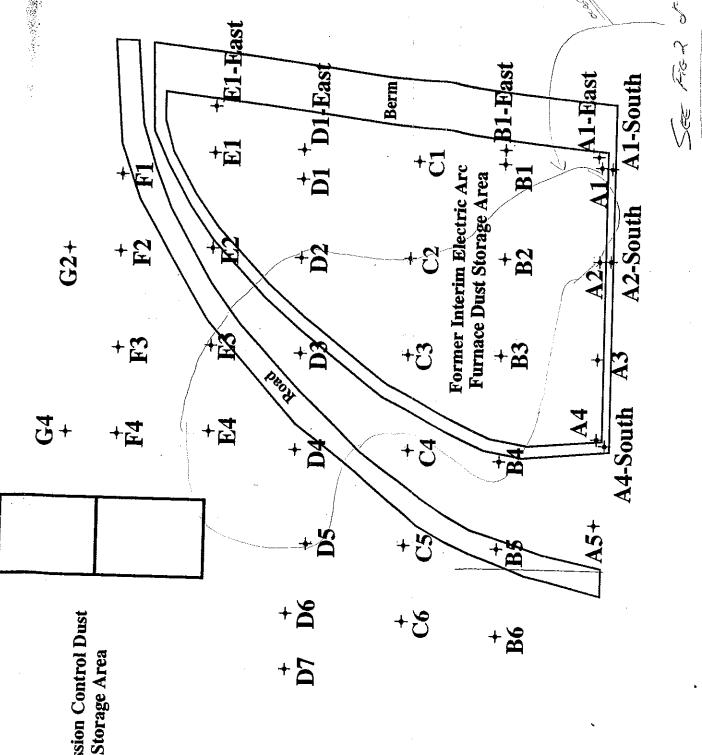


Figure 2 Fill material and background fill material sample locations

Clayton ENVIRONMENTAL CONSULTANTS

DSC Ltd. Trenton, Michigan

Former McLouth Steel Products Corporation Trenton Plant Trenton, Michigan

S T F E

Table 1 Summary of Analytical Results for Metals in Fill Material Clayton Project No. 13-97153.00 Sampling Dates: November 6 and 7, 1996

		Š	ample Concer	Sample Concentration (mg/kg)	(2)	
Analyte	Barium	Cadmium	Chromium	Chromium	Lead	Hd
Sample Identification						
A1 (Surface)	190	4.8	480	Ϋ́ Z	884	00° -
A1 (2) A2 (Surface)	150 140	<0.05 12 3 1	340	Z Z	7400	8.5
A2 (2') A3 (Surface)	82 120	3.2	1400 540	NA 0:1	05>	7.1. 8.4
A3 (1) A4 (Surface)	110 54	0.46 5.2	480 620	A Z C	<50 620	10.8 9.2 5.2
A4 (2') B1 (Surface)	4 ×	3.4	2600	NA NA	0110	7.57
B1 (2) B1 (2)	7.7.5	<0.05 50.05	950	A Z	<50 \50	12.0
B2 (Surface)	35	30.05	640	Z Z	7200	8.6
B2 (2)	& &	1.7	600 270	Z Z	7200	9.11.9
B3 (2')	24	<0.05	760	Z Z	~ ~ ~ ~	12.4
B4 (Surface) B4 (21)	% S	3.9	540 960	NA 0.1	880 150	8.8
B5 (Surface) B5 (2)	37	<0.05	420 1300	Z Z	<50 <50	11.1
C1 (Surface)	26	0.34	460	AZ A	120	9, 8 9, 8
C1 (2')	63	0.78	092	<0.1	110	12.3
C2 (Surface) C2 (2')	34 51	2.6	650 810	Z Z Y	1300 130	8.4
C3 (Surface)	65	0.4	410	NA C	220	9.2
C3 (2) C4 (Surface)	58	1.4	470	Y Y	320	2.6
C4 (2') C5 (Surface)	27 27	<0.05 1.1	960 380	X X Y	430 430	12.3 6.8
C5 (2')	32	1.5	1500	0.1	<20	12.4
D1 (Surface)	200	0.29	069	¥ Z	1100 	12.2
D1 (2') Duplicate D2 (Surface)	- 44 26	0.4	550 410	X Z A	1400	12.4
D2 (1')	210	ci -	270	0.1	230	11.0
D3 (2')	32	0.13	089	Y S	500	12.4
D4 (Surface) D4 (2')	42 29	4 0.23	280 820	X Z	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	9.1
D5 (Surface)	56 18	2.6	470 870	N 0.1	620 \$50	8.6
D6 (Surface)	54.5	12.5	180	ZZ	1700	0.0
D6 (Surface) Duplicate D6 (2')	42 26	0.38	680	N A	<50	12.3
EI (Surface)	00 1	11	770	0.1 NA	2900 <20	8.5
E2 (Surface)	011	0.22	350	Y Z	440	9.2
E2 (2') E3 (Surface)	73	3.6	044 0440	NA <0.1	630	9.6
E3 (2') F4 (Surface)	52 63	<0.05 <0.05	910 490	A Z	8 690 4 069	12.4
E4 (2')	98	0.3	1000	NA S	<20	12.1
F2 (Surface) F2 (2')	19 98 	4.7 <0.05	94 930 930	Υ Υ Z	210	11.2
F2 (2') Duplicate F3 (Surface)	47	3.5	350	X Z Y	380	9.1
F3 (2') F4 (Surface)	57	0.55	440 	N & 0.1	1100	5.11 0.0
F.1 (2')	76	<0.05	380	AZ .	<50	11.8
BGDA (Sunace) BGDA (2')	110	0.33	690 690 650	0.1	420 420 130	0.0 4.11 x
BCDB (2')	98 34	0.77	430	<0.1 <0.1	55	11.5
BGDB (Surface) Duplicate BGDC (Surface)	20 82	1.7	420 330	0.0 0.1	260 170	20.30 20.50
BGDC (2') BGDD (Surface)	011 89	0.4	360	0.1 0.1	100. 240	2.2.5
BGDD (2')	61	0.38	930	× 20.1	075	11.3
BGD1 (Surface) BGD1 (2') BGD2 (Surface)	100 17 140	0.05 0.05 0.05	530 290	< 0.1 < 0.1 < 0.1	120 13 270	12.3 8.9
BGD2 (2')	34	<0.05	540	<0.1	43	12.3

mg/kg = milligrams per kilogram or parts per million (ppm)
NA = Not analyzed

Table 2 Summary of Analytical Results for Metals in Fill Material Clayton Project No. 13-97153.00 Sampling Dates: February 5 and 6, 1997

		Sample Conce	ntration (mg/kg)	
Analyte	Barium	Cadmium	Chromium	Lead
Sample Identification		· · · · · · · · · · · · · · · · · · ·		
A1 South Surface	NA	10	NA	740
A1 South (2')	NA	NA	NA	270
A1 East Surface	NA	< 0.05	NA	190
A1 East (2')	NA	NA	NA	99
A2 South Surface	NA	< 0.05	NA	19
A2 South Surface Dup.	NA	2	NA	270
A2 South (2')	NA	NA	500	NA
A4 South Surface	NA	4.3	NA	270
A4 South (2')	NA	2.4	460	NA
A5 Surface	NA	1.7	NA	220
A5 (2')	NA	0.52	630	NA
B1 East Surface	NA	NA	NA	550
B2 (4')	NA	0.06	NA	5
B5 (4')	NA	< 0.05	1,600	NA
B6 (2')	NA	NA	740	NA
C5 (4')	NA	<10	7,400	NA
C6 Surface	NA	3.3	700	NA
C6 (2')	NA	1.5	800	NA
D1 East Surface	NA	NA	NA	520
D2 (4')	52	0.28	NA	15
D7 Surface	NA	3.1	NA	460
E1 East Surface	NA	0.61	NA	90
E2 (4')	NA	NA	580	NA
F1 Surface	64	NA	NA	440
F1 (2')	140	1	NA	160
G2 Surface	55	NA	NA	640
G2 Surface Duplicate	58	NA	NA	990
G2 (2')	86	0.95	NA	270
G4 (Surface)	NA	NA	NA	490
malia – millianama non kil	<u></u>	or million (nnm)	<u></u>	

mg/kg = milligrams per kilogram or parts per million (ppm) NA = Not analyzed

Subsurface Investigation
for
Approved Emission Control Dust Storage Area
at the
Former McLouth Steel Products Corporation
Trenton, Michigan

Submitted to DSC Ltd.
Trenton, Michigan

Clayton Project No. 13-97153.00 August 19, 1997

Limitations

The information and opinions rendered in this report are exclusively for use by DSC Ltd. Clayton Environmental Consultants, Inc. will not distribute or publish this report without DSC Ltd.'s consent except as required by law or court order. The information and opinions are given in response to a limited assignment and should be implemented only in light of that assignment. Clayton Environmental Consultants, Inc. accepts responsibility for the competent performance of its duties in executing the assignment and preparing reports in accordance with the normal standards of the profession, but disclaims any responsibility for consequential damages.

This report submitted by:

Gary T. Blinkiewicz

Project Hydrogeologist

Environmental Management and Remediation

Detroit Regional Office

This report reviewed by:

Robert A. Ferree, CPG

Senior Geologist and Supervisor of Geosciences Environmental Management and Remediation

Detroit Regional Office

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This report reviewed by:

Derek R. Wong, Ph.D., P.E.

Senior Hydrogeologist and Manager

Environmental Management and Remediation

Detroit Regional Office

APPENDIX A SITE HEALTH AND SAFETY PLAN

22345 Roethel Drive P.O. Box 8022 Novi, MI 48375 (810) 344-1770 Fax (810) 344-2654 Clayton ENVIRONMENTAL CONSULTANTS

Site Health and Safety Plan for the Former McLouth Steel Plant Trenton, Michigan

Submitted to DSC, Ltd.
Trenton, Michigan

Clayton Project No. 13-97153.00

October 25, 1996



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1.0 INTRODUCTION

This health and safety plan describes the procedures that will be implemented and followed by Clayton Environmental Consultants, Inc. during work activities at the former McLouth Steel Plant in Trenton, Michigan.

This health and safety plan is based on the planned work activities and environmental investigations to be conducted at the site and the requirements of Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120). This health and safety plan should be available onsite during work activities.

2.0 WORK ACTIVITIES

The following is a brief description of the work activities to be performed at the site.

- Install three monitoring wells
- Install 31 soil borings in the former emission control dust storage area
- Sample groundwater from two existing and three new monitoring wells

3.0 ONSITE ORGANIZATION

Each person shall be responsible for following the health and safety plan's guidelines at the site. The site safety officer is Mr. Gary T. Blinkiewicz. The safety officer's duties are to:

- Oversee implementation of the health and safety plan
- Confirm that all personnel have proper training and protective equipment
- Conduct a "tailgate" meting on the first day before field activities commence
- Stop work if the health and safety of workers is in question
- Observe workers for signs and symptoms of exposure to contaminants
- Evaluate the effectiveness of the personal protective program on an ongoing basis and upgrade the program as needed
- Inform workers of any changes in the health and safety practices
- Perform daily reviews of the work practices and compliance with the health and safety plan
- Note any signs of worker exposure or stress and take proper action immediately

All personnel who enter the work area must comply with the health and safety practices and procedures described in this health and safety plan.

All incidents at the site, such as injuries or near misses, must be reported to the following people as soon as possible:

Gary T. Blinkiewicz
 Site Safety Officer
 Clayton Environmental Consultants, Inc. (810) 344-1770

4.0 HEALTH AND SAFETY HAZARDS

The health and safety concerns onsite can be categorized as chemical hazards and physical hazards. The potential chemical hazards, based on previous site investigations, are presented by the chemicals listed in the following table.

Hazardous Substance	Potential Health Effects	Permissible Exposure Limit (PEL)	Immediately Dangerous to Life or Health
Barium	eyes, skin, respiratory system damage, heart, CNS damage	0.5 mg/m ³	50 mg/m ³
Cadmium	NIOSH Potential Occupational Carcinogen (prostatic & lung cancer);respiratory system and kidney damage	0.005 mg/m ³	9 mg/m ³
Chromium	eye and skin damage; respiratory system damage	0.5 mg/m ³	250 mg/m ³
Lead	eye damage; GI tract damage; CNS damage; kidney, blood, gingival tissue damage	0.050 mg/m ³	100 mg/m ³

Physical hazards present at the site are limited to unstable footing.

4.1 CHEMICAL HAZARDS

Hazards generally associated with chemicals used onsite and chemical contamination present in soil and/or groundwater include overexposure through the following possible routes of entry: (1) Skin or eye contact resulting in skin damage and in some cases, dermal absorption, (2) Inhalation of chemical vapors, dust or gases, (3) Ingestion of chemicals. To minimize exposure to chemical contaminants, personal protective equipment as specified in this plan must be worn. Site control measures must also be taken to minimize exposures and to provide for contingency measures. Air monitoring/sampling as specified in this plan will be used to assess potential airborne exposure. Material Safety Data Sheets for any chemicals brought onsite should be available for review.

4.2 PHYSICAL HAZARDS

The following subsections describe possible health and safety hazards associated with work activities at the site.

4.2.1 Traffic and Heavy Equipment Hazards

Stay at least 10 feet away from moving equipment. If closer than 10 feet:

- Keep equipment in sight at all times.
- Inform the operator of your location.

The working area will be closed to traffic with barricades, caution tape, cones, or other traffic control equipment.

No unauthorized or unessential vehicle will be allowed to enter the barricaded area. Only trained personnel may operate heavy equipment.

4.2.2 Underground Utilities Hazards

Extreme care will be taken in invasive drilling/excavation techniques to ensure that no utility lines exist at that location.

If an underground utility line is encountered or damaged during the work:

- Stop all activities immediately and clear the area.
- Stop all engines and mechanical and electrical equipment.
- Call MISSDIG (1-800-482-7171) immediately.

4.2.3 Lifting Heavy Objects

To prevent back injury resulting from lifting heavy objects:

- · Bend your knees
- Lift with your legs not your back
- Keep your feet centered under you
- Keep the load close to your body

4.2.4 Unstable Footing, Physical Obstacles and Falling Objects

Inspect the work areas carefully before entering and make sure of safe footing. Use caution when navigating physical obstacles, and beware of falling objects.

4.2.5 Overhead Utility Lines

Extreme care must be taken to avoid overhead utility lines with equipment brought onsite.

If an overhead utility line is encountered or damaged during the work:

- Stop all activities immediately and clear the area.
- Stop all engines and mechanical and electrical equipment
- Call US ALERT (1-800-642-2444) immediately.

5.0 ONSITE SAFETY EQUIPMENT

The following subsections describe personal and general safety equipment that will be required onsite.

5.1 PERSONAL SAFETY EQUIPMENT

The following personal protective equipment (PPE) will be required at all times:

- Hard Hat
- Steel toed shoes
- Gloves (vinyl and nitrile)
- Safety glasses or goggles

5.2 GENERAL SAFETY EQUIPMENT

The following items must be available and easily accessible for use:

- · First aid kit
- Fire extinguisher (foam, dry chemical, or carbon dioxide)
- · Eve wash

6.0 TRAINING

All personnel who may be exposed to onsite contaminants must provide documentation of the following:

- Current training that meets the requirements of 29 CFR 1910.120 to include:
 - 40 hours of classroom instruction/hands-on training
 - Three days of field experience under the supervision of an experienced supervisor
 - Eight hours of annual classroom refresher training, as appropriate
- Eight hours of supervisory training as specified in 29 CFR 1910.120 if a person is a designated supervisor.

Project-specific training and information will be provided either before traveling to the site or at the site before entry into contaminated areas onsite. The information and training will be documented, and will include the following:

- The contents of the health and safety plan
- A discussion of the site specific health and safety hazards, protective measures, and work practices

7.0 MEDICAL SURVEILLANCE

Prior to being assigned to a hazardous or a potentially hazardous activity involving exposure to toxic materials, employees must receive a baseline physical exam. The contents of the physical exam is to be determined by the employee's medical consultant. The baseline physical exam should categorize employees as fit-for-duty and able to wear respiratory protection.

In addition to the baseline physical, employees must have a periodic physical exam every 12 months. All personnel working in contaminated or potentially contaminated areas at the site must have current medical monitoring (i.e., exam within 12 months).



8.0 AIR MONITORING/SAMPLING

During field operations, the air will be monitored with an Hnu Photo Ionization Detector (PID). If organic vapors are consistently detected at a concentration of 50 parts per million (ppm) in the breathing zone, an exclusion zone will be set up to conduct work activities. The exclusion zone limit is set based on the lowest PEL of the contaminants listed. (Personal protective equipment associated with the zones are discussed in greater detail in Section 5.0).

9.0 SITE CONTROL MEASURES

The following safe work practices apply for the entire site: (include applicable restrictions/safe work practices)

- · Observe the "buddy system," never enter or exit contaminated areas alone
- Maintain line-of-sight of radio communication between personnel in contaminated and non-contaminated areas
- No smoking, eating or drinking except in a designated "clean zone"
- No horse play
- No matches or lighters in contaminated areas

A site map is attached as Figure 1.

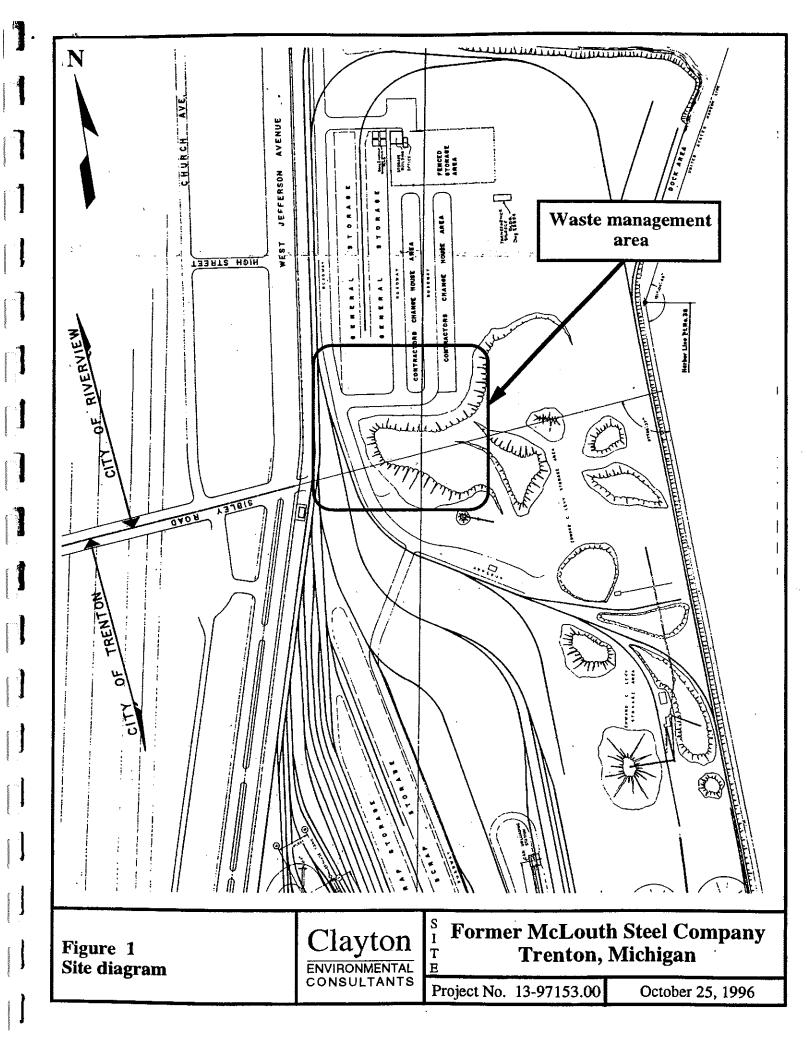
10.0 <u>DECONTAMINATION PLAN</u>

Decontamination involves the orderly controlled removal of contaminants. All personnel and equipment must be decontaminated in the Contamination Reduction Zone. The following are specific procedures for decontamination on this site

Level D: Remove outer garments (i.e., coveralls), remove and discard gloves, wash hands, and face in the offices prior to leaving the site

11.0 WASTE HANDLING AND DISPOSAL

The waste handling procedures discussed in the work plan will be followed. Waste generated by implementation of this health and safety program may include spent protective clothing, such as TyvekTM suits or gloves, and wash rinse solutions. Protective clothing will be collected in a lined container or DOT drum. Liquid wastes will be collected and pumped or poured into DOT approved drums with equipment decontamination rinsate.



12.0 EMERGENCY RESPONSE/CONTINGENCY PLAN

12.1 PERSONAL INJURY

In case of a minor personal injury, general first aid procedures will apply. A first aid kit will be available at the site in a designated location or in company vehicles. All injuries or accidents will be reported to the site safety officer immediately.

More serious injuries may require assistance from paramedics. The project manager, site safety officer, or another designated person will contact the appropriate emergency personnel by dialing 911.

12.2 EYE AND SKIN EXPOSURE TO CHEMICALS

These chemicals and substances are irritants to eyes and skin. In case of exposure:

- · Remove contaminated clothing and shoes.
- Flush affected areas with plenty of water.
- IF IN EYE, hold eyelids open and flush with plenty of water.
- If irritation or discomfort continues, call for medical aid immediately.

12.3 INTERNAL EXPOSURE TO CHEMICALS

Chemicals can be harmful if swallowed. In case of exposure:

- · Call for medical aid.
- Get immediate medical attention.

12.4 INHALATION EXPOSURE TO CHEMICALS

Inhalation of these chemicals can cause upper respiratory problems, tight chest, muscle aches, headache, nausea, and eye, nose, and throat irritation. In case of exposure:

- · Move victim to fresh air.
- If discomfort continues, call for medical aid immediately.
- If breathing has stopped, give artificial respiration.
- If breathing is difficult, give oxygen.

12.5 FIRE HAZARD

In case of fire, leave the area and call fire department immediately.



12.6 EMERGENCY CONTACTS

Emergency contacts will be made, as necessary, from the list in this section:

Hospital

Name: Address: Oakwood Hospital Seaway Center 5450 Fort Street, Trenton, Michigan

Phone:

(313) 671-3800

Ambulance:

Call 911 or (313) 671-3883

Fire Dept.

Call 911

Police Dept.

Call 911 or (313) 256-9636

See Figure 2 for locations of emergency facilities.

Other Telephone Numbers

US ALERT: 1-800-642-2444

National Response Center: 1-800-424-8802

13.0 SPILL CONTAINMENT PROGRAM

The following spill containment program applies for activities at the site:

- All drums and containers used during the cleanup will meet DOT requirements for the
 wastes they will contain. Drums will be inspected and integrity assured before they are
 used and moved. Only drums found to be sound will be used. Drum and container
 movement will be minimized to reduce the potential for spills.
- Where spills may occur, adequate quantities of spill containment materials (absorbent, pillows, etc.) will be stationed in the immediate area.

This plan prepared by:

Susan J. Boddy

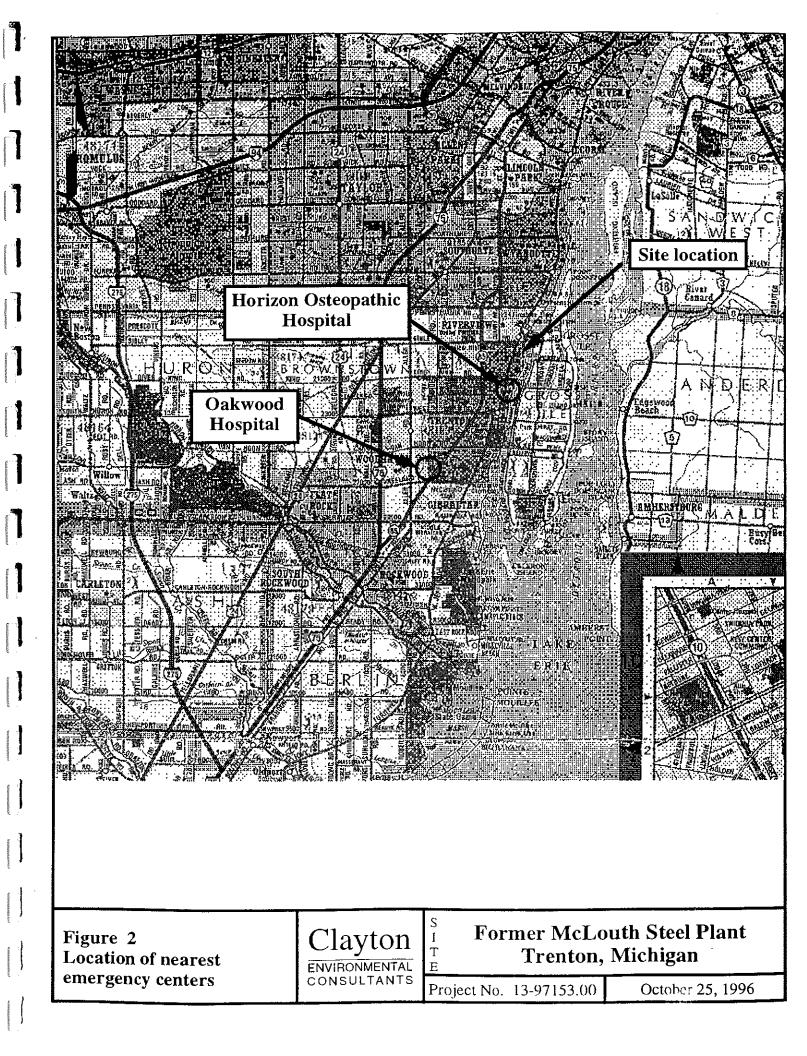
Staff Geologist

This plan reviewed by:

Robert A. Ferree, CPG

Senior Geologist and Supervisor of Geosciences

Reviewed and accepted by:		
,	Name	Date
Reviewed and accepted by:		





EMERGENCY INFORMATION

IN CASE OF AN EMERGENCY, USE THIS SHEET

Emergency Phone No.:

911

or

(313) 671-3883

Site Address:

1491 W. Jefferson Avenue Trenton, Michigan

Nearest Intersection:

Jefferson Avenue and Sibley Road

APPENDIX B ANALYTICAL RESULTS OF FILL MATERIAL SAMPLES



Analytical Results for

DSC LTD.

Clayton Project No. 43861.00/13-97153.00

Sample Type:

Soil

Analytical Method: Analyst:

EPA 6010

CW

Date Sampled:

11/06/96

Date Received:

11/08/95

Date Analyzed: 11/13/96

		Ва	rium
Lab No.	Sample Identification	(mg/kg)	LOD (mg/kg <u>)</u>
	A1 (SURFACE)	190	/ 1
001a	A1 (2')	150	1
002a	A1 (2) A2 (SURFACE)	140	· 1
003a	A3 (SURFACE)	120	1
004a	A3 (1')	110	1
005a	A4 (SURFACE)	54	1
006a	B1 (SURFACE)	82	1
007a.	B1 (SURFACE) B1 (2')	71	1
008a	B1 (2') DUPLICATE	81	1
009a		. 35	1
010a		83	1
011a	B2 (2') B3 (SURFACE)	49	1
012a		24	1
013á	B3 (2')	54	1
014a	B4 (SUFACE)	37	1
015a	B5 (SURFACE)	37	ī
016a	. B5 (2')	26	ī
017a	C1 (SURFACE)	55	ī
018a	C1 (SURFACE) DUPLICATE	34	1
021a	C2 (SURFACE)		1
022a	C2 (2') ·	51	i
023a	C3 (SURFACE)	65	1
024a	F4 (2')	76	1
025a	C4 (SUFACE)	58	1
026a	C4 (2')	40	
027a	C5 (SURFACE)	27	1
028a	D1 (SURFACE)	70	1
029a	D1 (2')	50	1
030a	D2 (SUFACE)	26	1
031a	D1 (2') DUPLICATE	44	1
032a	D3 (2')	32	1
033a	D4 (SURFACE)	42	1
034a	D4 (2')	29	1

Sample Type: Analytical Method: Soil EPA 6010 Date Sampled:
Date Received:

11/06/96 11/08/96

Analyst:

CR

Date Analyzed: 11/13/96

Lab No.		Barium	
	Sample Identification	(mg/kg)	LOD (mg/kg)
			•
035a	D5 (2')	18	1
036a	D6 (SURFACE)	42	1
037a	D6 (2')	26	1
038a	D6 (SURFACE) DUPLICATE	42	1 .
041a	E1 (2')	100	1
042a	E2 (SURFACE)	110	1
043a	E2 (2')	89	1
044a	E3 (2')	52	1
045a	E4 (SURFACE)	63	1
046a	E4 (2')	86	1
047a	F2 (SURFACE)	61	1
048a	F2 (2')	86	. 1
049a	F2 (2') DUPLICATE	930	1
050a	F3 (SURFACE)	47	1
050a	F4 (SURFACE)	50	1
052a	A2 (2')	82	1
052a	A4 (2')	44	1
054a	B4 (2')	90	1
055a	C1 (2')	63	1
056a	C3 (2')	61	1
057a	C5 (2')	32	· 1
058a	D2 (1')	210	1
059a	D3 (SURFACE)	71	1
060a	D5 (SURFACE)	56	1
061a	E1 (SURFACE)	77	1
062a	E3 (SURFACE)	73	1
063a	F3 (2')	57	1
064a	BGDA (SURFACE)	2.70	1
065a	BGDA (2')	110	1
066a	BGDB (SURFACE)	82	1
067a	BGDB (2')	36	1
068a	BGDB (2') BGDB (SURFACE) DUPLICATE	92	1



Analytical Results

for

DSC LTD.

Clayton Project No. 43861.00/13-97153.00

Sample Type:

Soil

Date Sampled:

11/06/96

Analytical Method:

EPA 6010 CR

Date Received:

11/08/96

Analyst:

11/13/96 Date Analyzed:

		Barium	
Lab No.	Sample Identification	(mg/kg)	LOD (mg/kg)
71a	BGDC (SURFACE)	50	· / 1
72a	BGDC (2')	110	1
73a	BGDD (SURFACE)	68	1
74a	BGDD (2')	61	. 1
75 a .	LAB BLANK	<1	1

General Notes:

<: Less than the indicated limit of detection (LOD)

--: Information not available or not applicable

Sample Type: Analytical Method:

Soil

EPA 6020

Analyst:

CR

Date Sampled:

11/06/96 11/08/96

Date Received: Date Analyzed:

11/13/96

	·	Cadmium	
Lab No.	Sample Identification	(mg/kg)	LOD (mg/kg)
001a	A1 (SURFACE)	5.4	. 0.05
002a	A1 (2')	<0.05	0.05
003a	A2 (SURFACE)	12	. 0.05
004a	A3 (SURFACE	3.2	. 0.05
005a	A3 (1')	0.46	0.05
006a	A4 (SURFACE)	5.2	0.05
007a -	B1 (SURFACE)	3.4	0.05
008a	B1 (2')	<0.05	0.05
009a	B1 (2') DUPLICATE	<0.05	0.05
010a	B2 (SURFACE)	30	0.05
011a	B2 (2')	1.7	0.05
)12a	B3 (SURFACE)	22	0.05
013a	B3 (2')	<0.05	0.05
014a	B4 (SUFACE)	3.9	0.05
015a	B5 (SURFACE)	<0.05	0.05
016a	B5 (2')	<0.05	0.05
0 17a	C1 (SURFACE)	0.34	0.05
018a ·	C1 (SURFACE) DUPLICATE	0.52	0.05
021a	C2 (SURFACE)	2.6	0.05
022a	C2 (2')	<0.05	0.05
023a	C3 (SURFACE)	0.4	0.05
024a	F4 (2')	<0.05	0.05
025a	C4 (SUFACE)	1.4	0.05
026a	C4 (2')	<0.05	0.05
027a	C5 (SURFACE)	1.1	0.05
028a	D1 (SURFACE)	3	0.05
029a	D1 (2')	0.29	0.05
030a	D2 (SUFACE)	7.2	0.05
031a	D1 (2') DUPLICATE	0.4	0.05
032a	D3 (2')	0.13	0.05
033a	D4 (SURFACE)	4	0.05
034a	D4 (2')	0.23	0.05

Analytical Results for

DSC LTD.

Clayton Project No. 43861.00/13-97153.00

Sample Type: Analytical Method:

Soil

EPA 6020 CW

Analyst:

11/06/96 11/08/96 Date Sampled: Date Received: Date Analyzed: 11/13/96

	•	Cadm	nium
Lab No.	Sample Identification	(mg/kg)	LOD (mg/kg)
			,,
035a	D5 (2')	0.1	0.05
036a	D6 (SURFACE)	12	. 0.05
037a	D6 (2')	0.38	0.05
038a	D6 (SURFACE) DUPLICATE	12	0.05
041a	E1 (2')	<0.05	0.05
042a	E2 (SURFACE)	0.22	0.05
043a	E2 (2')	<0.05	0.05
044a	E3 (2')	<0.05	0.05
045a	E4 (SURFACE)	<0.05	0.05
046a	E4 (2')	0.3	0.05
047a	F2 (SURFACE)	4.7	0.05
048a	F2 (2')	<0.05	0.05
049a	F2 (2') DUPLICATE	3.5	0.05
050a	F3 (SURFACE)	3.5	0.05
051a	F4 (SURFACE)	.1.9	0.05
.052a	A2 (2')	0.56	0.05
05 3 a	A4 (2')	6.6	0.05
054a	B4 (2')	1.1	0.05
055a	C1 (2')	0.78	0.05
056a	C3 (2')	0.13	0.05
057a	C5 (2')	1.5	0.05
058a	D2 (1')	2.4	0.05
059a	D3 (SURFACE)	4.1	0.05
060a	D5 (SURFACE)	2.6	0.05
061a	E1 (SURFACE)	11	0.05
062a	E3 (SURFACE)	3.6	0.05
063a	F3 (2')	0.55	0.05
064a	BGDA (SURFACE)	3.6	0.05
065a	BGDA (2')	0.33	0.05
066a	BGDB (SURFACE)	1.3	0.05
067a	BGDB (2')	0.77	0.05
068a	BGDB (SURFACE) DUPLICATE	1.7	0.05
	DGDD (DOWENCE) postatouta	- • ·	· · · -

Sample Type:

Analyst:

Soil

Analytical Method:

EPA 6020

CW

Date Sampled:

11/06/96

Date Received:

11/08/96

Date Analyzed:

11/13/96

		Cadmium	
Lab	Sample	(mg/kg)	LOD
No.	Identification		(mg/kg)
/1a	BGDC (SURFACE) BGDC (2') BGDD (SURFACE) BGDD (2') LAB BLANK	0.78	0.05
/2a		0.4	0.05
/3a		1	0.05
/4a		0.38	0.05
/5a		<0.05	0.05

General Notes:

Less than the indicated limit of detection (LOD)

Information not available or not applicable



Sample Type: Analytical Method:

Soil

EPA 6010

Analyst:

Date Sampled:

11/06/96

Date Received: Date Analyzed: 11/08/96

11/13/96

			Chromium		
Lab	Sa	ample		LOD	
No.		ification	(mg/kg)	(mg/kg)	
001a	Al	(SURFACE)	480	·130	
001a 002a		(2')	210	130	
002a 003a		(SURFACE)	340	. 130	
004a		(SURFACE	540	130	
005a		(1')	480	130	
006a		(SURFACE)	620	130	
007a		(SURFACE)	600	130	
008a		(2')	950	130	
009a		(2') DUPLICATE	1200	130	
010a		(SURFACE)	640	130	
011a	B2	(2')	600	130	
012a	В3	(SURFACE).	270	130	
013a	В3	(2')	760	. 130	
01 4 a	B4	(SUFACE)	5 4 0	130	
015a	B 5	(SURFACE)	420	130	
016a	B5	(2')	1300	130	
017a ·	. C1	(SURFACE)	460	130	
018a	C1	(SURFACE) DUPLICATE	820	130	
021a	C2	(SURFACE)	650	130	
022a		(2')	810	130	
023a		(SURFACE)	410	130	
024a		(2')	380	130	
025a		(SUFACE)	470	130	
026a		(2')	960	130	
027a		(SURFACE)	380	130	
028a		(SURFACE)	510	130	
029a		(2')	690	130 .	
030a		(SUFACE)	410	130	
031a		(2') DUPLICATE	550	130	
032a		(2')	680	130	
033a		(SURFACE)	280	130	
034a	D4	(2')	820	130	

Sample Type: Analytical Method: Soil

EPA 6010

Analyst:

CR

Date Sampled: Date Received: 11/06/96 11/08/96

Date Analyzed:

11/13/96

		Chromium		
Lab No.	Sample Identification	(mg/kg)	LOD (mg/kg)	
<u></u>				
035-	D5 (2')	870	130	
035a	D6 (SURFACE)	180	130	
036a	p6 (2')	680	130	
037a	D6 (SURFACE) DUPLICATE	<130	130	
038a	E1 (2')	660	50	
041a 042a	E2 (SURFACE)	350	50	
042a -	E2 (2')	1500	50	
043a 044a	E3 (2')	910	50	
044a 045a	E4 (SURFACE)	490	50	
045a 046a	E4 (2')	1000	50	
	F2 (SURFACE)	490	50	
047a 048a	F2 (30KFACE)	630	· 50	
	F2 (2') DUPLICATE	620	50	
049a 050a	F3 (SURFACE)	350	50	
050a 051a	F4 (SURFACE)	440	50	
051a 052a	A2 (2')	1400	50	
053a ·	A2 (2')	2600	50	
	B4 (2')	960	50	
054a 055a	C1 (2')	760	50 ·	
	C3 (2')	1100	50	
056a		1500	5 0 · · ·	
057a 058a	C5 (2') D2 (1')	270	50	
		1200	50	
059a	D3 (SURFACE)	470	50	
060a	D5 (SURFACE)	770	50	
061a	E1 (SURFACE)	440	50	
062a	E3 (SURFACE)	220	50	
063a	F3 (2')	480	50	
064a	BGDA (SURFACE)	480 690	50	
065a	BGDA (2')		50	
06 6 a	BGDB (SURFACE)	650 430	50 50	
067a	BGDB (2')	430	50	
068a	BGDB (SURFACE) DUPLICATE	420	30	

Analytical Results

for

DSC LTD.

Clayton Project No. 43861.00/13-97153.00

Sample Type:

Soil

Date Sampled: Date Received: 11/06/96

Analytical Method:

EPA 6010

11/08/96

Analyst:

CW

Date Analyzed: 11/13/96

		Chromium	
Lab No.	Sample Identification	(mg/kg)	LOD (mg/kg)
	BGDC (SURFACE)	330	/ 50
71a	BGDC (2')	690	50
72a	BGDD (SURFACE)	360	50
73a	BGDD (2')	930	, 50
)74a)75a	LAB BLANK	<2.5	2.5

General Notes:

Less than the indicated limit of detection (LOD)

--: Information not available or not applicable



Sample Type: Analytical Method:

Analyst:

Soil EPA 7196

CC

Date Sampled:

11/06/96

Date Received: Date Analyzed: 11/08/96 11/14/96

Hexavalent	chromium
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Lab No.	Sample Identification	(mg/kg)	LOD (mg/kg)
052a	A2 (2')	<0.1	/ 0.1
053a	A4 (2')	<0.1	0.1
054a	B4 (2')	<0.1	. 0.1
055a	C1 (2')	<0.1	0.1
056a	C3 (2')	<0.1	0.1
057a	C5 (2')	0.1	0.1
058a	D2 (1')	<0.1	0.1
059a	D3 (SURFACE)	<0.1	0.1
060a	D5 (SURFACE)	<0.1	0.1
06 1 a	E1 (SURFACE)	<0.1	0.1
062a	E3 (SURFACE)	<0.1	0.1
063a	F3 (2')	<0.1	0.1
064a	BGDA (SURFACE)	<0.1	0.1
065a	BGDA (2')	<0.1	0.1
066a	BGDA (SURFACE)	<0.1	0.1
067a	BGDA (2')	<0.1	0.1
068a	BGDA (SURFACE) DUPLICATE	<0.1	0.1
071a ·	BGDC (SURFACE)	<0.1	0.1
072a	BGDC (2')	<0.1	0.1
0 7 3a	BGDC (SURFACE)	<0.1	0.1
074a	BGDD (2')	<0.1	0.1

General Notes:

<: Less than the indicated limit of detection (LOD)

--: Information not available or not applicable

Analytical Results

for

DSC LTD.

Clayton Project No. 43861.00/13-97153.00

Soil

Sample Type: Analytical Method:

EPA 6010

Analyst:

· Date Sampled: Date Received: Date Analyzed: 11/06/96 11/08/96 11/13/96

		L	ead
Lab No.	Sample Identification	(mg/kg)	LOD (mg/kg)
001-	A1 (SURFACE)	884	./ 5 0
001a	A1 (2')	739	50
00 2a 003a	A2 (SURFACE)	7400	50
003a 004a	A3 (SURFACE)	<50	50
004a	A3 (1')	<50	50
005a	A4 (SURFACE)	620	50
000a 007a	B1 (SURFACE)	860	50
007a.	B1 (2')	<50	50
009a	B1 (2') DUPLICATE	<50	50
010a	B2 (SURFACE)	7200	50
011a	B2 (2')	7200	50
012a	B3 (SURFACE)	330	50
013a	B3 (2')	<50	50
014a	B4 (SUFACE)	880	50
015a	B5 (SURFACE)	<50	50
016a	B5 (2')	<50	50
017a	C1 (SURFACE)	120	50
018a	C1 (SURFACE) DUPLICATE	180	50
021a	C2 (SURFACE)	1300	50
022a	C2 (2')	130	50
023a	C3 (SURFACE)	220	50
024a -	F4 (2')	<50	50 ·
025a	C4 (SUFACE)	320	50
026a	C4 (2')	<50	50
027a	C5 (SURFACE)	430	50
028a	D1 (SURFACE)	1100	50
029a	D1 (2')	<50	5 0 _
030a	D2 (SUFACE)	1400	50
031a	D1 (2') DUPLICATE	<50	50
032a	D3 (2')	<50	50
033a	D4 (SURFACE)	560	50
034a	D4 (2')	<50	50 ·



Sample Type: Analytical Method:

Soil EPA 6010 Date Sampled: Date Received:

11/06/96 . 11/08/96

Analyst:

067a

068a

CW

BGDB (SURFACE) DUPLICATE

BGDB (2')

Date Analyzed:

11/13/96

20

20

		. L	ead
Lab No.	Sample Identification	(mg/kg)	LOD (mg/kg)
	· · · · · · · · · · · · · · · · · · ·		••
035a	D5 (2')	<50	50
036a	D6 (SURFACE)	1700	50
037a	D6 (2')	<50	50
038a	D6 (SURFACE) DUPLICATE	1800	50
041a	E1 (2')	<20	20
042a	E2 (SURFACE)	440	20
043a	E2 (2')	95	20
044a	E3 (2')	94	20
045a	E4 (SURFACE)	690	20
046a	E4 (2')	<20	20
047a	F2 (SURFACE)	780	20
048a	F2 (2')	210	20
049a	F2 (2') DUPLICATE	430	20
050a	F3 (SURFACE)	380	20 "
051a	F4 (SURFACE)	1100	20
052a	A2 (2')	<20	20
053a	A4 (2')	110	20
054a	B4 (2')	150	20
055a	C1 (2')	110	20
056a	C3 (2')	<20	20
057a	C5 (2')	<20	20
058a	D2 (1')	230	20
059a	D3 (SURFACE)	510	20
060a	D5 (SURFACE)	620	20
061a	E1 (SURFACE)	2900	20
062a	E3 (SURFACE)	630	20
063a	F3 (2')	<20	20
064a	BGDA (SURFACE)	450	20
065a	BGDA (2')	<20	20
066a	BGDB (SURFACE)	130	20
	DGDB (SUKFACE)	T20	20

55

260

Sample Type:

Soil

Date Sampled:

11/06/96

Analytical Method:

EPA 6010

Date Received:

11/08/96

Analyst:

CW

Date Analyzed:

11/13/96

		r	ead
Lab No.	Sample Identification	(mg/kg)	LOD (mg/kg)
071a	BGDC (SURFACE)	170	. 20
071a 072a	BGDC (2')	100	20
072a	BGDD (SURFACE)	240	20
074a	BGDD (2')	<20	. 20
075a	LAB BLANK	<1	/ 1

General Notes:

<: Less than the indicated limit of detection (LOD)

--: Information not available or not applicable

Sample Type: Analytical Method: Analyst:

Soil

EPA 9045

CR

Date Sampled: Date Received: 11/06/96 11/08/96

Date Analyzed:

11/13/96

		рн	
7.7	/CIDEACE)	Ω Ω	
			-
			•
	•		
			•
	•		
			1
B4	(SUFACE)	•	
B5	(SURFACE)		
. B5	(2')	12.3	
C1	(SURFACE)	8.9	•
. C1	(SURFACE) DUPLICATE	8.8	
		8.4	
		11.6	•
		. 9.2	
			•
	A1 A1 A2 A3 A3 A4 B1 B1 B2 B2 B3 B3 B4 B5 C1 C1 C2 C2 C3 F4 C4 C4 C5 D1 D1 D2 D1 D3 D4	A2 (SURFACE) A3 (SURFACE A3 (1') A4 (SURFACE) B1 (SURFACE) B1 (2') B1 (2') DUPLICATE B2 (SURFACE) B2 (2') B3 (SURFACE) B3 (2') B4 (SUFACE) B5 (SURFACE) B5 (2') C1 (SURFACE) C1 (SURFACE) C2 (SURFACE) C2 (2') C3 (SURFACE) F4 (2') C4 (SUFACE) C4 (2')	Sample Identification



Sample Type: Analytical Method:

Soil EPA 9045 Date Sampled: 11/06/96 Date Received: 11/08/96

11/13/96

Analyst:

CR

Date Analyzed:

		нд
Lab	Sample	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
No.	Identification	
035a	D5 (2')	12.3
036a	D6 (SURFACE)	8.9
037a	D6 (2')	12.3 ·
038a	D6 (SURFACE) DUPLICATE	8.8
041a	E1 (2')	12.4
042a	E2 (SURFACE)	9.2
043a	E2 (2')	12.0
044a	E3 (2')	12.4
045a	E4 (SURFACE)	9.0
046a	E4 (2')	12.1
047a	F2 (SURFACE)	9.4
048a	F2 (2')	11.2
049a	F2 (2') DUPLICATE	11.4
050a	F3 (SURFACE)	9.1
051a	F4 (SURFACE)	9.0
052a	· A2 (2')	11.9
053a ·	A4 (2')	12.2
054a	B4 (2')	11.7
055a	C1 (2')	12.3
056a	C3 (2')	12.4
057a	C5 (2')	12.4
058a	D2 (1')	11.0
059a	D3 (SURFACE)	10.1
060a	D5 (SURFACE)	8.6
061a	E1 (SURFACE)	8.5
062a	E3 (SURFACE)	9.6
063a	F3 (2')	11.5
064a	BGDA (SURFACE)	· 8.6
065a	BGDA (2')	11.4
066a	BGDB (SURFACE)	8.8
067a	BGDB (2')	11.5
06 8 a	BGDB (SURFACE) DUPLICATE	8.9

Analytical Results

for

DSC LTD.

Clayton Project No. 43861.00/13-97153.00

Sample Type: Analytical Method:

Soil

Date Sampled:

11/06/96

EPA 9045

Date Received:

11/08/96

Analyst:

CR

Date Analyzed:

11/13/96

		рН
Lab No.	Sample Identification	
071a 072a 073a 074a	BGDC (SURFACE) BGDC (2') BGDD (SURFACE) BGDD (2')	8.5 11.2 8.2 11.3

General Notes:

Less than the indicated limit of detection (LOD)

Information not available or not applicable



Sample Identification:

BGD1 (SURFACE)

Date Sampled:

11/06/96

Lab Number:

001a

Date Received:

11/15/96

Sample Type:

Soil/Sludge

Analyst:

DH

Moisture (%):

6

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparation Method and Date		Analytical Method and Date	
Barium		100	10	EPA 3050A	11/19/96	EPA 6010A	11/21/9
Cadmium		<0.5	0.5	EPA 3050A	11/19/.96	EPA 6020A	12/04/9
Chromium		250	25	EPA 3050A	11/19/96	EPA 6010A	11/21/9
Lead		120	10	EPA 3050A	11/19/96	EPA 6010A	11/21/9

Sample Identification:

BGD1 (2')

Date Sampled:

11/07/96

Lab Number:

002a

Date Received:

11/15/96

Sample Type:

Soil/Sludge

-Analyst:

Moisture (%):

12

Concentration LOD Preparation Analytical Analyte (mg/kg) (mg/kg) Method and Date Method and Date Barium 17 10 EPA 3050A 11/19/96 EPA 6010A 11/21/9 Cadmium <0.5 0.5 EPA 3050A 11/19/96 EPA 6020A 12/04/5 Chromium 530 25 EPA 3050A 11/19/96 EPA 6010A 11/21/9 13 10 EPA 3050A 11/19/96 EPA 6010A 11/21/9



Analytical Results

for

DSC LTD.

Clayton Project No. 44091.00/13-97153.00

Sample Identification:

Lab Number:

Sample Type: Analyst:

BGD2 (SURFACE)

003a

Soil/Sludge

DH

Date Sampled:

Date Received: 11/15/96

Moisture (%):

. 25

11/07/96

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Prepara Method an		Analyti Method an	
Barium		140	10	EPA 3050A	11/19/96	EPA 6010A	11/21/9
Cadmium		<0.5	0.5	EPA 3050A	11/19/96	EPA 6020A	12/04/9
Chromium		290	25	EPA 3050A	11/19/96	EPA 6010A	11/21/9
Lead		270	20	EPA 3050A	11/19/96	EPA 6010A	11/21/9

Sample Identification:

Lab Number:

Sample Type:

Analyst:

BGD2 (2')

004a

Soil/Sludge

DH

Date Sampled:

Date Received:

Moisture (%):

11/15/96

11/07/96

22

Concentration LOD Preparation Analytical Analyte (mg/kg) (mg/kg) Method and Date Method and Date Barium 34 10 EPA 3050A 11/19/96 EPA 6010A 11/21/9 Cadmium <0.5 0.5 EPA 3050A 11/19/96 EPA 6020A 12/04/9 Chromium 540 25 EPA 3050A 11/19/96 EPA 6010A 11/21/9 43 20 EPA 3050A 11/19/96 EPA 6010A

Analytical Results

for

DSC LTD.

'Clayton Project No. 44091.00/13-97153.00

Sample Identification:

LAB BLANK

Date Sampled: -

Lab Number:

005a

Date Received:

11/15/96

Sample Type:

Soil/Sludge

Moisture (%):

0

Analyst:

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparation Method and Date	Analytical Method and Date
Barium		< 1	1	EPA 3050A 11/19/96	EPA 6010A 11/21/9
Cadmium		<0.05	0.05	EPA 3050A 11/19/96	EPA 6020A 12/04/9
Chromium Lead		<2.5 <1	2.5 1	EPA 3050A 11/19/96 EPA 3050A 11/19/96	

General Notes

--: Information not available or not applicable. The results are reported on a dry weight basis.

Clayron ENVIRONAL TAL CONSULTANTS

Analytical Results for

DSC LTD.

Clayton Project No. 44091.00/13-97153.00

Sample Identification:

BGD1 (SURFACE)

Date Sampled:

11/06/96

Lab Number:

001

Date Received:

11/15/96

Sample Type: Analyst:

BB

Soil

Analyte	Concentration (mg/kg)	LOD (mg/kg)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.1	0.1	EPA 7196	11/27/96

Sample Identification: BGD1 (SURFACE)

Date Sampled: Date Received: 11/06/96 11/15/96

Lab Number:

001 Soil

Sample Type: Analyst:

MR

Analyte	Concentration	LOD	Analytical Method	Date Analyzed
рН	9.3		EPA 9045	11/22/96

Sample Identification: BGD1 (2')

Date Sampled:

11/07/96

Lab Number:

Analyst:

002

Date Received:

11/15/96

11/07/96

Sample Type:

Soil

BB

Analyte	Concentration (mg/kg)	LOD (mg/kg)	Analytical Method	Date Analyzed
Hexavalent chromium	m <0.1	0.1	EPA 7196	11/27/96

Sample Identification: BGD1 (2')

Lab Number:

002

Sample Type:

Soil

Analyst:

MR

Date Received: 11/15/96

Date Sampled:

Analyte	Concentration	LOD	Analytical Method	Date Analyzed
рн	12.3		EPA 9045	11/22/96



Analytical Results for

DSC LTD.

Clayton Project No. 44091.00/13-97153.00

Sample Identification:

BGD2 (SURFACE)

Date Sampled:

11/07/96

Lab Number: Sample Type: 003 Soil

Date Received:

11/15/96

Analyst:

BB

Analyte	Concentration (mg/kg)	LOD (mg/kg)	Analytical Method	Date Analyzed
Hexavalent chromium	n <0.1	0.1	EPA 7196	11/27/96

LOD

Sample Identification:

BGD2 (SURFACE)

Date Sampled:

Date Received:

11/07/96 11/15/96

Lab Number: Sample Type: 003 Soil

Concentration

Analyst:

Analyte

MR

Date Analyzed

pН

8.9

EPA 9045

Analytical

Method

11/22/96



Analytical Results for

DSC LTD.

Clayton Project No. 44091.00/13-97153.00

Sample Identification: BGD2 (2')

Lab Number:

004

Sample Type:

Soil

Analyst:

BB

Date Sampled:

11/07/96

Date Received:

11/15/96

Analyte	Concentration (mg/kg)	LOD (mg/kg)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.1	0.1	EPA 7196	11/27/96

Sample Identification:

BGD2 (2')

Lab Number:

004

Sample Type:

Soil

Analyst:

MR

Date Sampled:

11/07/96

Date Received:

11/15/96

Concentration LOD Analytical Date Analyte Method Analyzed

рΗ

12.3

EPA 9045

11/22/96

Clayton ENVIRONMENTAL CONSULTANTS

Analytical Results for

DSC LTD.

Clayton Project No. 44091.00/13-97153.00

Sample Identification:

LAB BLANK

Date Sampled:

Lab Number:

Analyst:

005

Sample Type:

Soil MR Date Received:

Concentration LOD Analytical Date Method Analyzed

pH 7.0 -- EPA 9045 11/22/96

General Notes:

Less than the indicated limit of detection (LOD)

--: Information not available or not applicable



Sample Type: Analytical Method:

Water

EPA 200.8

Analyst:

CW

11/06/96

Date Sampled: Date Received:

11/08/96

Date Analyzed:

11/14/96

		Ваз	rium
Lab No.	Sample Identification	(mg/L)	LOD (mg/L)
076a	EB-1	<0.2	0.2
077a	EB-2	<0.2	0.2
078a	LAB BLANK	<0.2	0.2



Sample Type: Analytical Method:

Water

EPA 200.8

Analyst:

CW

Date Sampled:

11/06/96

Date Received:

11/08/96

Date Analyzed: 11/14/96

		Cadn	nium
Lab No.	Sample Identification	(mg/L)	LOD (mg/L)
Sa.	EB-1	0.007	0.0005
77a	EB-2	0.006	0.0005
78a	LAB BLANK	0.006	0.0005



Analyst:

Water

Sample Type: Analytical Method:

CW

Date Sampled:

11/06/96

EPA 200.8

Date Received: 11/08/96

Date Analyzed:

11/14/96

Lab No.		Chromium		
	Sample Identification	(mg/L)	LOD (mg/L)	
076a	EB-1	<0.05	0.05	
077a	EB-2	<0.05	0.05	
078a	LAB BLANK	<0.05	0.05	



Water

Sample Type: Analytical Method: Analyst:

EPA 200.8

CW

Date Sampled:

11/06/96 11/08/96

Date Received: Date Analyzed:

11/14/96

		Lead		
Lab	Sample	(mg/L)	LOD	
No.	Identification		(mg/L)	
76a	EB-1	<0.003	. 0.003	
77a	EB-2	0.005	0.003	
078a	LAB BLANK	<0.003	. 0.003	



Water

Sample Type: Analytical Method:

EPA 150.1

Analyst:

Date Sampled:

11/06/96

Date Received:

11/08/96

Date Analyzed:

11/11/96

		рн
Lab No.	Sample Identification	
076a 077a	EB-1	1.8
077a	EB-2	1.8



Table 1 Analytical Results for

DSC LTD.

Clayton Project No. 46378.00/13-97153.00

2 of 1 Page

Sample Identification:

Lab Number:

Sample Type: Analyst:

A5 (2')

001a

Soil/Sludge

CW

Date Sampled:

Date Received:

Moisture (%):

02/05/97

.02/07/97

. 29

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Prepara Method an		Analyti Method an	
Cadmium		0.52	0.05	EPA 3050A	02/13/97	EPA 7131A	02/20/9
Chromium		630	2.5	EPA 3050A	02/13/97	EPA 6010A	02/19/9

Sample Identification:

Lab Number:

Sample Type:

Analyst:

B5 (4')

002a

Soil/Sludge

CW

Date Sampled:

Date Received:

Moisture (%):

02/05/99 02/07/9

9

LOD Preparation Analytical Concentration Analyte (mg/kg) (mg/kg) Method and Date Method and Date Cadmium <0.05 0.05 EPA 3050A 02/13/97 EPA 7131A 02/20/ Chromium 1600 2.5 EPA 3050A 02/13/97 EPA 6010A 02/19/



DSC LTD.

Clayton Project No. 46378.00/13-97153.00

3 of 1 Page

Sample Identification:

Lab Number:

Sample Type:

Analyst:

B5 (4') MS

003a

Soil/Sludge

CW

Date Sampled:

Date Received:

Moisture (%):

02/05/97

02/07/97

8

•	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparat Method and		Analytic Method and	
Cadmium Chromium		<0.05 1500	0.05 2.5		02/13/97 02/13/97	EPA 7131A EPA 6010A	02/20/9

Sample Identification:

Lab Number:

Sample Type:

Analyst:

B5 (4') MSD

004a

Soil/Sludge

Date Sampled: Date Received:

Moisture (%):

02/07/97 7

02/05/97

LOD Preparation Analytical · Concentration Analyte (mg/kg) (mg/kg) Method and Date Method and Date Cadmium 0.05 EPA 3050A 02/13/97 EPA 7131A 02/19/9 0.06 Chromium 2.5 EPA 3050A 02/13/97 EPA 6010A 02/19/9 1500



DSC LTD.

Clayton Project No. 46378.00/13-97153.00

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Sample Identification:

Lab Number:

Sample Type: Analyst:

C6 SURFACE

005a

Soil/Sludge CW

Date Sampled:

Date Received:

02/06/9 02/07/9

Moisture (%): 23

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Prepara Method and		Analyti Method an	
Cadmium		3.3	0.05	EPA 3050A	02/13/97	EPA 7131A	02/19/
Chromium		700	2.5	EPA 3050A	02/13/97	EPA 6010A	02/19/

Sample Identification:

Lab Number:

Sample Type:

Analyst:

C6 (2')

006a

Soil/Sludge

CW

Date Sampled:

Date Received:

02/06/9 02/07/9

Moisture (%):

9

Concentration LOD Preparation Analytical Analyte (mg/kg) (mg/kg) Method and Date Method and Date Cadmium 1.5 0.05 EPA 3050A 02/13/97 EPA 7131A 02/19/ Chromium 800 2.5 EPA 3050A 02/13/97 EPA 6010A 02/19/

Clayton ENVIRONMENTAL CONSULTANTS

Table 1 (continued) Analytical Results for

DSC LTD.

Clayton Project No. 46378.00/13-97153.00

Page 5 of 1

Sample Identification:

C5 (4')

Lab Number:

Analyst:

007a

Sample Type:

Soil/Sludge CW Date Sampled:

02/06/97

Date Received:

02/07/97

Moisture (%):

6

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Prepara Method an		Analyti Method and	
Cadmium		<10	10	EPA 3050A	02/13/97	EPA 7131A	02/19/9
Chromium		7400	27	EPA 3050A	02/13/97	EPA 6010A	02/19/9

Sample Identification:

A4 SOUTH (2')

Lab Number:

008a

Sample Type:

Soil/Sludge

Analyst:

CW

Date Sampled:

Date Received:

02/05/97 02/07/97

Moisture (%):

13

Concentration LOD Preparation Analytical Analyte Method and Date (mg/kg) (mg/kg) Method and Date Cadmium 0.05 2.4 EPA 3050A 02/13/97 EPA 7131A 02/19/9 Chromium 460 2.5 EPA 3050A 02/13/97 EPA 6010A 02/19/9



DSC LTD.

Clayton Project No. 46378.00/13-97153.00

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Sample Identification:

B6 (2')

Soil/Sludge

02/06/97

Lab Number:

009a

Date Sampled: Date Received: 02/07/97

Sample Type:

Analyst:

Moisture (%): 15

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparation Method and Date		Analytical Method and Date	
Chromium		740	2.5	EPA 3050A 0	2/13/97	EPA 6010A	02/19/9

Sample Identification:

A2 SOUTH (2')

Lab Number:

010a

Soil/Sludge

02/05/97

Date Sampled: Date Received:

02/07/97

Sample Type:

Moisture (%):

17

Analyst:

CW

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparat Method and		Analytic Method and	
Chromium		500	2.5	EPA 3050A	02/13/97	EPA 6010A	02/19/9



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DSC LTD.

Clayton Project No. 46378.00/13-97153.00

Sample Identification:

Lab Number:

Sample Type:

Analyst:

E2 (4')

011a

Soil/Sludge

CW

Date Sampled:

Date Received:

.02/06/9 02/07/9

Moisture (%): 11

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparat Method and		Analytic Method and	
Chromium		580	2.5	EPA 3050A	02/13/97	EPA 6010A	02/19/

Sample Identification:

Lab Number:

Sample Type:

Analyst:

B1 EAST SURFACE

012a

Soil/Sludge

CW

Date Sampled:

Date Received:

02/07/9

02/06/9

Moisture (%):

22

Concentration LOD Preparation Analytical Analyte (mg/kg) (mg/kg) Method and Date Method and Date 550 EPA 3050A 02/13/97 EPA 6010A 02/19/



DSC LTD.

Clayton Project No. 46378.00/13-97153.00

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Sample Identification:

Lab Number:

Analyst:

Sample Type:

G4 SURFACE

013a

Soil/Sludge CW

Date Sampled:

Date Received:

02/07/97

Moisture (%):

. 19

02/06/97

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparat Method and		Analytic Method and	
Lead		490	1	EPA 3050A	02/13/97	EPA 6010A	02/19/9

Sample Identification: A1 EAST SURFACE

Lab Number:

Sample Type:

Analyst:

014a

Soil/Sludge

CW

Date Sampled:

Date Received:

02/07/97

02/05/97

Moisture (%):

13

Concentration LOD Preparation Analytical Analyte (mg/kg) (mg/kg) Method and Date Method and Date Cadmium <0.05 0.05 EPA 3050A 02/13/97 EPA 6020 02/18/9 Lead 190 1 EPA 3050A 02/13/97 EPA 6010A 02/19/9



DSC LTD.

Clayton Project No. 46378.00/13-97153.00

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Sample Identification:

Lab Number:

Sample Type: Analyst:

A1 SOUTH SURFACE

015a

Soil/Sludge

CW

Date Sampled:

Date Received:

Moisture (%):

02/05/97 02/07/97

- 20

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Prepara Method an		Analyti Method an	
Cadmium		10	0.05	EPA 3050A	02/13/97	EPA 7131A	02/20/9
Lead		740	1	EPA 3050A	02/13/97	EPA 6010A	02/19/9

Sample Identification:

Lab Number:

Analyst:

Sample Type:

A2 SOUTH SURFACE 016a

Soil/Sludge

CW

Date Sampled:

Date Received:

Moisture (%):

02/05/97 02/07/97

16

-	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Prepara Method an		Analyti Method an	
Cadmium		<0.05	0.05	EPA 3050A	02/13/97	EPA 7131A	02/19/9
Lead		19	1	EPA 3050A	02/13/97	EPA 6010A	02/19/9



DSC LTD.

Clayton Project No. 46378.00/13-97153.00

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Sample Identification:

Lab Number:

Sample Type:

Analyst:

A5 SURFACE

017a

Soil/Sludge CW

Date Sampled:

Date Received:

. 02/05/97 02/07/97

Moisture (%):

22

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Prepara Method and		Analyti Method an	
Cadmium Lead		1.7 220	0.05	EPA 3050A EPA 3050A	02/13/97 02/13/97	EPA 7131A EPA 6010A	02/20/9 02/19/9

Sample Identification:

Lab Number:

Sample Type:

Analyst:

A4 SOUTH SURFACE

018a

Soil/Sludge

Date Sampled:

Date Received:

Moisture (%):

02/05/97

02/07/97

18

	Analyte	Concentration (mg/kg)	n LOD (mg/kg)	Preparation Method and Date		Analytical Method and Date	
Cadmium		4.3	0.05	EPA 3050A	02/13/97	EPA 7131A	02/20/9
Lead		270	1	EPA 3050A	02/13/97	EPA 6010A	02/18/9



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DSC LTD.

Clayton Project No. 46378.00/13-97153.00

Sample Identification:

Lab Number:

Sample Type:

Analyst:

B2 (4')

019a

Soil/Sludge

CW

Date Sampled:

Date Received:

Moisture (%):

02/05/9 02/07/97

7

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparat Method and		Analyti Method an	
Cadmium		0.06	0.05	EPA 3050A	02/13/97	EPA 7131A	02/20/9
Lead		5	1	EPA 3050A	02/13/97	EPA 6020	02/18/9

Sample Identification:

Lab Number:

Sample Type:

Analyst:

D7 SURFACE

020a

Soil/Sludge

Date Sampled:

Date Received:

Moisture (%):

02/06/97 02/07/97

17

Concentration LOD Preparation Analytical Analyte (mg/kg) (mg/kg) Method and Date Method and Date Cadmium 3.1 EPA 3050A 02/13/97 EPA 7131A 0.05 02/19/9 Lead 460 EPA 3050A 02/13/97 EPA 6010A 02/19/9 1



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DSC LTD.

Clayton Project No. 46378.00/13-97153.00

Sample Identification:

E1 EAST SURFACE

Lab Number:

021a

Sample Type:

Analyst:

Soil/Sludge

Date Sampled:

02/06/97

Date Received:

02/07/97

Moisture (%):

21

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparat: Method and		Analytic Method and	
Cadmium Lead		0.61 90	0.05 1		02/13/97 02/13/97	EPA 7131A EPA 6010A	02/19/9 02/19/9

Sample Identification:

Lab Number:

022a

Sample Type:

Soil/Sludge

A2 SOUTH SURFACE DUPLICATE

Analyst:

Date Sampled:

Date Received:

02/05/97 02/07/97

Moisture (%):

19

Concentration LOD Preparation Analytical Analyte (mg/kg) (mg/kg) Method and Date Method and Date Cadmium 2 0.05 EPA 3050A 02/13/97 EPA 7131A 02/19/9 Lead 270 EPA 3050A 02/13/97 EPA 6010A 02/19/9



DSC LTD.

Clayton Project No. 46378.00/13-97153.00

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Sample Identification:

Lab Number:

D2 (4') 023a

CW

Sample Type:

Soil/Sludge

Analyst:

Date Sampled:

.02/06/97

Date Received:

.02/07/97

Moisture (%): 10

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Prepara Method an		Analyti Method an	
Barium Cadmium		52 0.28	1 0.05	EPA 3050A EPA 3050A	02/13/97 02/13/97	EPA 6010A EPA 7131A	02/18/9
Lead		15	1	EPA 3050A	02/13/97	EPA 6010A	02/19/9

Sample Identification:

F1 (2')

Lab Number:

024a

Sample Type:

Soil/Sludge

Analyst:

CW

Date Sampled:

Date Received:

02/06/97 02/07/97

Moisture (%):

12

Concentration LOD Preparation Analytical Analyte (mg/kg) (mg/kg) Method and Date Method and Date Barium 140 1 EPA 3050A 02/13/97 EPA 6010A 02/18/9 Cadmium 1 0.05 EPA 3050A 02/13/97 EPA 7131A 02/19/9 Lead 160 1 EPA 3050A 02/13/97 EPA 6010A



DSC LTD.

Clayton Project No. 46378.00/13-97153.00

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Sample Identification:

Lab Number:

Sample Type:

Analyst:

G2 (2')

025a Soil/Sludge

Date Sampled:

-02/06/97

Date Received:

02/07/9

Moisture (%): 11

Analyte		Concentration (mg/kg)	LOD (mg/kg)	Preparation Method and Date		Analytical Method and Date	
Barium Cadmium Lead		86 0.95 270	1 0.05 1	EPA 3050A 02/	13/97 13/97 13/97	EPA 6010A EPA 7131A EPA 6010A	02/18/9 02/19/9 02/19/9

Sample Identification:

Lab Number:

Sample Type:

Analyst:

F1 SURFACE

026a

Soil/Sludge

CW

Date Sampled:

Date Received:

02/07/9 14

02/06/9"

Moisture (%):

Concentration LOD Preparation Analytical Analyte (mg/kg) (mg/kg) Method and Date Method and Date Barium 64 EPA 3050A 02/13/97 EPA 6010A 02/18/ 1 Lead 440 02/13/97 EPA 6010A



DSC LTD.

Clayton Project No. 46378.00/13-97153.00

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Sample Identification:

Lab Number:

Sample Type:

Analyst:

G2 SURFACE

027a

Soil/Sludge

Date Sampled:

Date Received:

02/07/97

02/06/97

Moisture (%):

22

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Prepara Method an		Analyti Method an	
Barium		55	1	EPA 3050A	02/13/97	EPA 6010A	02/18/9
Lead		640	1	EPA 3050A	02/13/97	EPA 6010A	02/19/9

Sample Identification:

Lab Number:

Sample Type:

Analyst:

G2 SURFACE DUPLICATE

028a

Soil/Sludge

CW ·

Date Sampled:

Date Received:

Moisture (%):

02/06/97

02/07/97

26

	Analyte	<pre>Concentration (mg/kg)</pre>	LOD (mg/kg)	Preparation Method and Date		Analytical Method and Date	
Barium		58		EPA 3050A	02/13/97	EPA 6010A	02/18/
Lead		990	1	EPA 3050A	02/13/97	EPA 6010A	02/19/



for

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DSC LTD.

Clayton Project No. 46378.00/13-97153.00

Sample Identification:

Lab Number:

Sample Type:

Analyst:

A1 EAST (2')

029a

Soil/Sludge

CW

Date Sampled:

Date Received: .

02/05/97 02/07/97

Moisture (%):

16

*** **********************************	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparation Method and Date		Analytical Method and Date	
Lead		99	1	EPA 3050A	02/13/97	EPA 6010A	02/19/9

Sample Identification:

Lab Number:

Sample Type:

Analyst:

A1 SOUTH (2')

030a

Soil/Sludge

CW

Date Sampled:

Date Received:

Moisture (%):

02/07/97

02/05/97

12

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparation Method and Date	Analytical Method and Date
Lead		270	1	EPA 3050A 02/13/97	EPA 6010A 02/19/9



DSC LTD.

Clayton Project No. 46378.00/13-97153.00

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Sample Identification:

D1 EAST SURFACE

Date Sampled: 02/06/97

Lab Number:

031a

Date Received: 02/07/97

Sample Type:

Soil/Sludge

17 Moisture (%):

Analyst:

CW

	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparation Method and Date		Analytical Method and Date	
Lead		520	1	EPA 3050A	02/13/97	EPA 6010A	02/19/9

Sample Identification:

LAB BLANK

Lab Number: Sample Type: 032a

Soil/Sludge

<2.5

<1

Date Sampled:

Date Received:

02/07/97

02/19/9

02/19/9

Moisture (%):

EPA 3050A 02/13/97 EPA 6010A

EPA 3050A 02/13/97 EPA 6010A

0

Analyst:

CW

•	Analyte	Concentration (mg/kg)	LOD (mg/kg)	Preparation Method and Date		Analytical Method and Date	
Barium Cadmium		<1 <0.05	1 0.05	EPA 3050A EPA 3050A	02/13/97 02/13/97	EPA 6010A EPA 7131A	02/19/9

2.5

1

General Notes

Chromium

Lead

--: Information not available or not applicable. The results are reported on a dry weight basis.

APPENDIX C CLAYTON HYDROGEOLOGICAL ASSESSMENT REPORT

Hydrogeological Investigation
for the Former
Approved Electric Arc Furnace Dust Storage Area
at the
Former McLouth Steel Products Corporation Facility
Trenton, Michigan

Submitted to DSC Ltd.
Trenton, Michigan

Clayton Project No. 13-97153.00

December 9, 1997







22345 Roethel Drive P.O. Box 8022 Novi, MI 48375 (248) 344-1770 Fax (248) 344-2654 Clayton ENVIRONMENTAL CONSULTANTS

Hydrogeological Investigation
for the Former
Approved Electric Arc Furnace Dust Storage Area
at the
Former McLouth Steel Products Corporation Facility
Trenton, Michigan

Submitted to DSC Ltd.
Trenton, Michigan

Clayton Project No. 13-97153.00 December 9, 1997



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1.0 INTRODUCTION

Clayton Environmental Consultants, Inc. is pleased to submit its report of a hydrogeologic investigation conducted at the former McLouth Steel Products Corporation Trenton Plant located at 1491 West Jefferson Avenue in Trenton, Michigan. Clayton conducted this investigation in accordance with the approved plan for closure of the Electric Arc Furnace Dust (EAFD) interim status hazardous waste storage pile.

The purpose of the investigation was to evaluate barium, cadmium, chromium, hexavalent chromium, and lead in groundwater at the former emission control dust storage area located at the site.

2.0 SITE BACKGROUND

The former McLouth Steel Products Corporation Trenton, Michigan plant is now owned by DSC Ltd. The plant site is bounded on the west and north by Jefferson Avenue, on the south by King Road, and on the east by the Detroit River. The former interim status EAFD storage area is located on the north end of the property, just north of the east extension of Sibley Road. Figure 1 presents a site location map.

3.0 SUMMARY OF SUBSURFACE INVESTIGATION ACTIVITIES

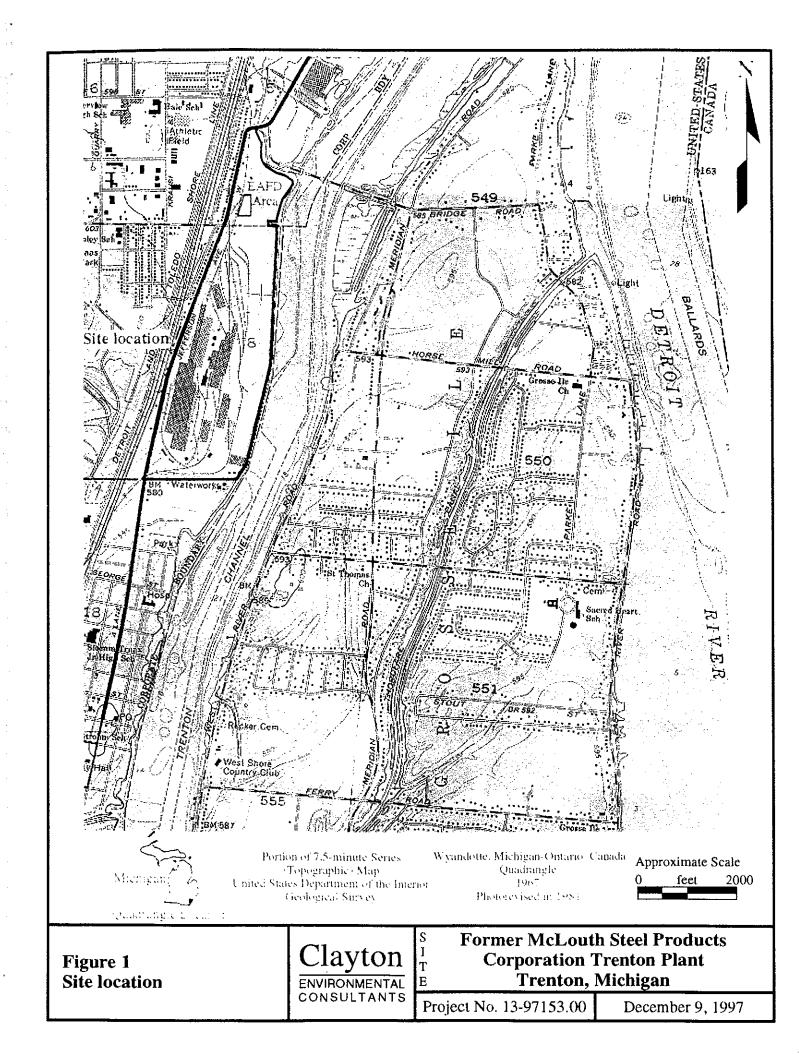
The following is a summary of activities performed as a part of Clayton's hydrogeological investigation:

- Installation of three additional monitoring wells and replacement of one existing monitoring well downgradient of the former EAFD storage area
- · Collection of groundwater samples from the five monitoring wells on a quarterly basis
- · Measurement of water levels in the five monitoring wells on a quarterly basis

3.1 MONITORING WELL INSTALLATION

On October 30, October 31, November 1, and November 20, 1996, Clayton installed Monitoring Wells MW-2, MW-3, MW-4, and MW-5 (Figure 2). Two monitoring wells existed from a previous hydrogeologic investigation conducted at the property (Monitoring Wells MW-1 and MW-3). Clayton was unable to utilize existing Monitoring Well MW-3 due to a bent casing and metal debris blockage within the monitoring well. A replacement Monitoring Well MW-3 was installed in approximately the same location. Following the drilling of Monitoring Well MW-2 on October 30, 1996, dry conditions were encountered. On November 20, 1996, Clayton permanently abandoned Monitoring Well MW-2 by (1) removing the well from the ground and (2) filling the hole to the surface with bentonite and cement grout. Clayton installed a replacement Monitoring Well MW-2 on November 20, 1996 approximately 20 feet southeast of the former Monitoring Well MW-2 in an accessible area near the access road.

Hollow-stem augers (4-1/4-inch inside diameter) were used to advance the boreholes. Soil samples were extracted from the borings using a 2-foot-long split-spoon at 5-foot deep intervals from ground surface to the final depths of the borings for soil conditions and types. The soil samples collected were not submitted for laboratory analysis.



Each monitoring well was constructed using a threaded, 2-inch-diameter, polyvinyl chloride (PVC) casing and a 5-foot-long section of 10-slot PVC well screen. The screens had a slot thickness of 0.01 inches. Glues were not used on the casing joints and screen connectors. The well screens were placed at a depth to straddle the top of the water table to allow for seasonal fluctuations in the water table. The monitoring wells were designed to allow (1) groundwater in the water-bearing soil surrounding the screen to seep into the well casing until the static water level (groundwater surface depth) in the well equaled the static water level in surrounding soil, (2) measurement of groundwater surface depth, and (3) collection of groundwater samples at the depth of the screens for laboratory analyses. Clayton developed each monitoring well by bailing at least three times the initial volume of groundwater from the well casing (equal to the cross-sectional area of the riser times the length of the water column in the riser). The monitoring wells were constructed as follows:

- 1. The annular void between the well screen and the borehole was filled with a noncementing, coarse-grained, silica sand filter pack (from the bottom of the boring to a vertical position of 1 foot above the well screen); this filter pack minimized the concentration of soil particulates in the groundwater sample.
- 2. A 2-foot-long column of bentonite pellets was placed above the sand to seal the annular void.
- 3. The remainder of the borehole was filled with a bentonite and cement grout. A water-resistant locking cap was placed on each well casing and an aboveground protective steel cover was installed over the top of the monitoring well.

Clayton examined soil samples from each boring as the drilling contractor (Rau Drilling) extracted soil from each boring; placed the samples in labeled, precleaned glass jars; and stored the sample jars in ice-cooled containers. Clayton prepared a geologic log for each boring based on soil inspection. Clayton visually inspected soil samples from each boring for indications of contamination and screened the samples with a photoionization detector (PID). Soil boring logs including the PID field screening results have been included as Appendix A.

3.2 EQUIPMENT DECONTAMINATION

The drilling contractors and Clayton decontaminated sampling equipment (e.g., split spoons, augers) before collecting soil samples. The sampling equipment was decontaminated in the following order:

- 1. Washing and scrubbing the equipment with a nonphosphate detergent solution
- 2. Rinsing the equipment with tap water
- 3. Rinsing the equipment with deionized water
- 4. Air-drying the equipment

3.3 GROUNDWATER SAMPLES

On November 8 and 20, 1996, February 5, 1997, May 23, 1997, and August 27, 1997, Clayton collected groundwater samples from each monitoring well (Monitoring Wells MW-1 through MW-5). Groundwater elevations were measured during each sampling

event. On December 9, 1996, Clayton performed an additional measurement of water levels in each of the five monitoring wells.

Clayton collected groundwater samples from the five monitoring wells after (1) measuring the water depth in each well and (2) purging at least three times the initial volume of groundwater in the well. Clayton then collected the sample using a dedicated disposable bailer after sufficient groundwater seeped into the well.

All groundwater samples were analyzed for barium, cadmium, chromium, lead, hexavalent chromium, and measured for pH. All groundwater samples collected for barium, cadmium, chromium, and lead were field filtered using a dedicated 0.45-micron filter into containers preserved with nitric acid. All groundwater samples collected for hexavalent chromium were placed directly into the appropriate container. All groundwater samples collected for pH were measured in the field.

Clayton collected Equipment Blank EB-3 on November 8, 1996, Equipment Blank EB-1 on February 5, 1997, and Equipment Blank EB-1 on August 27, 1997 after (1) rinsing the disposable bailers with deionized water and (2) placing the water in the appropriate containers. An equipment blank was not collected during the May 23, 1997 sampling event. Matrix spike and matrix spike duplicate samples were collected from Monitoring Well MW-3 and a duplicate sample was collected from Monitoring Well MW-4 on November 8, 1996.

3.4 SAMPLE COLLECTION AND PRESERVATION

Groundwater samples were collected in laboratory-grade containers, and preserved and stored following United States Environmental Protection Agency (USEPA) Publication SW-846, Testing Methods for Evaluating Solid Waste. Clayton transported the samples in ice-cooled containers to Clayton's analytical laboratory in Novi, Michigan.

For samples intended for barium, cadmium, chromium, hexavalent chromium, and lead analyses. Clayton used sample jars that the supplier (1) washed with detergent, (2) rinsed three times with deionized water, (3) rinsed with acid, (4) rinsed three times with organic-free water, (5) oven dried, (6) rinsed with solvent, and (7) oven dried.

3.5 SURVEYING

On December 9 and 10, 1996, a surveyor (JCK & Associates, Inc.) retained by Clayton surveyed the relative locations of four new and one existing monitoring wells and the top-of-casing elevations (refer to Figure 2). The elevations of the top of the monitoring well casings were measured relative to a benchmark located at King Road and Jefferson Avenue.

3.6 SITE HYDROGEOLOGY

Clayton typically encountered fill materials (e.g., metals debris, bricks, concrete, refuse) from ground surface to a depth of approximately 12 feet below ground surface except at Monitoring Well MW-4 (see below). Clayton also typically encountered a moist, native clayey sand from 12 feet below ground surface to the final depths of the borings. Monitoring Well MW-2 was advanced to a depth of 17 feet below ground surface, Monitoring Wells MW-3 and MW-5 were advanced to a depth of 18 feet below ground surface, and Monitoring Well MW-4 was advanced to a depth of 30 feet below ground surface. Monitoring Well MW-4 was advanced in an elevated area of debris created by activities conducted at the site.

The groundwater depths in each monitoring well were measured using an electric water-level indicator. The depth to groundwater measured in each well was from the surveyed mark on the top of the well casing to the groundwater surface in the well. The water depth was recorded to the nearest 0.01 feet. The elevation of the top of each well casing was measured by the surveyor. Groundwater surface elevations (piezometric head) were computed from the top of casing elevations and the measured water depths. Groundwater moves in accordance with the hydraulic gradient from points of high hydraulic head to points of low hydraulic head. The contour lines on the groundwater surface map connect points of equal head. The movement of groundwater is perpendicular to these equal head contour lines.

The piezometric heads in monitoring wells for each groundwater rneasurement date (November 20, 1996; December 9, 1996, February 5, 1997, May 23, 1997, and August 27, 1997) have been included in Table 1.

Using the elevations of the monitoring wells and depth to groundwater measurements in each monitoring well from December 9, 1996, Clayton triangulated the piezometric elevation differences between the EAFD monitoring wells and estimated the groundwater flow direction is toward the south-southeast. Groundwater surface elevations and interpolated flow direction for the December 9, 1996 elevations have been included on Figure 2.

4.0 LABORATORY ANALYSIS

Clayton analyzed the groundwater samples for barium, cadmium, chromium, lead, and hexavalent chromium using USEPA 6000- and 7000-series methods.

5.0 ANALYTICAL RESULTS

Tables 2 through 5 summarize groundwater analytical results for metals in samples from the November 8 and 20, 1996, February 5, 1997, May 23, 1997, and August 27, 1997 groundwater sampling events. Detailed analytical reports are included as Appendix B.

Table 1
Piezometric Head in Monitoring Wells

Monitoring Well	Elevation of Top of	Depth from Top of	Elevation of
111011111111111111111111111111111111111	Monitoring Well	Casing to	Groundwater
	Casing	Groundwater	Surface
	(feet)	Surface	(feet)
		(feet)	
Gro	undwater Measurement	Date: November 20, 1	996
MW-1	590.88	10.70	580.18
MW-2	593.19	18.33	574.86
MW-3	592.92	17.47	575.45
MW-4	603.02	27.86	575.16
MW-5	591.72	16.46	575.26
Gro	oundwater Measuremen		
MW-1	590.88	11.03	579.85
MW-2	593.19	17.07	576.12
MW-3	592.92	17.82	575.10 .
MW-4	603.02	28.20	574.82
MW-5	591.72	16.93	574.79
Gr	oundwater Measuremen	nt Date: February 5, 19	
MW-1	590.88	10.63	580.25
MW-2	593.19	16.58	576.61
MW-3	592.92	17.29	575.63
MW-4	603.02	27.88	575.14
MW-5	591.72	16.38	575.34
	Groundwater Measurem		
MW-1	590.88	10.86	580.02
MW-2	593.19	16.99	576.20
MW-3	592.92	16.88	576.04
MW-4	603.02	27.16	575.86
MW-5	591.72	15.78	575.94
	roundwater Measureme	<u> </u>	
MW-1	590.88	10.96	579.92
MW-2	593.19	17.02	576.17
MW-3	592.92	16.95	575.97
MW-4	603.02	27.22	575.80
MW-5	591.72	. 15.73	575.99

Table 2 Summary of Analytical Results for Metals in Groundwater Clayton Project No. 13-97153.00 Sampling Dates: November 8 and 20, 1996

	Sample Concentration (mg/L)					
Analyte	Barium	Cadmium	Chromium	Chromium (VI)	Lead	рН
Sample Identification						
MW-I	<0.2	0.015	0.1	<0.05*	0.013	11.27
MW-2	<0.2	<0.0005	0.08	<0.05*	<0.003	11.70
MW-3	0.55	0.013	0.12	<0.05*	0.012	12.52
MW-3 MS	0.61	0.016	0.12	NA	0.013	NA
MW-3 MSD	0.53	0.014	<0.05	NA .	0.02	NA
MW-4	0.54	0.017	<0.05	<0.05*	0.026	12.61
MW-4 Duplicate	0.46	0.016	<0.05	NA	0.022	NA
MW-5	<0.2	0.017	0.11	<0.05*	0.011	12.02
EB-3	<0.2	0.015	0.12	NA	0.011	11.40

mg/L = milligrams per liter or parts per million (ppm)

NA = not analyzed or applicable

* Limit of detection was raised due to matrix interference

Table 4
Summary of Analytical Results for Metals in Groundwater
Clayton Project No. 13-97153.00
Sampling Date: May 23, 1997

	Sample Concentration (mg/L)							
Analyte	Barium	Cadmiuin	Chromium	Chromium (VI)	Lead	pH		
Sample Identification								
MW-1	<0.2	0.0078	<0.05	<0.05	0.004	11.59		
MW-2	<0.2	0.011	<0.05	<0.05	0.021	12.32		
MW-3	0.5	0.0083	<0.05	<0.05	0.079	12.75		
MW-4	0.4	0.0068	<0.05	<0.05	0.073	12.73		
MW-5	<0.2	0.0074	<0.05	<0.05	0.085	12.69		
//			<u> </u>					

mg/L = milligrams per liter or parts per million (ppm)

Table 3
Summary of Analytical Results for Metals in Groundwater
Clayton Project No. 13-97153.00
Sampling Date: February 5, 1997

		Sample Concentration (mg/L)								
Analyte	Barium	Cadmium	Chromium	Chromium · (VI)	. Lead	pН				
Sample Identification										
MW-1	<0.2	<0.0005	<0.05	<0.005	<0.003	11.45				
MW-2	0.2	<0.0005	<0.05	<0.05*	< 0.003	12.30				
MW-3	0.6	<0.0005	<0.05	<0.05*	< 0.003	12.75				
MW-4	0.4	<0.0005	<0.05	<0.05*	<0.003	12.82				
MW-5	0.2	<0.0005	<0.05	<0.05*	< 0.003	12.65				
EB-1	<0.2	<0.0005	<0.05	<0.005	<0.003	10.73				
	<u> </u>									

mg/L = milligrams per liter or parts per million (ppm)

* Limit of detection was raised due to sample matrix

Table 5 Summary of Analytical Results for Metals in Groundwater Clayton Project No. 13-97153.00 Sampling Date: August 27, 1997

		Sample Concentration (mg/L)							
Analyte	Barium	Cadmium	Chromium	Chromium (VI)	Lead	pН			
Sample Identification					,				
MW-1	<0.2	<0.0005	<0.05	<0.05*	< 0.003	11.74			
MW-2	0.2	<0.0005	<0.05	<0.05*	0.023	12.42			
MW-3	0.5	<0.0005	<0.05	<0.005	0.007	13.17			
MW-4	0.4	<0.0005	<0.05	<0.05*	0.004	13.24			
MW-5	0.5	<0.0005	0.15	<0.05*	0.19	13.13			
EB-1	<0.2	<0.0005	<0.05	<0.05*	< 0.003	NA			

mg/L = milligrams per liter or parts per million (ppm)
NA = not analyzed

* Limit of detection was raised due to sample matrix

Hydrogeological Investigation
for the Former
Approved Electric Arc Furnace Dust Storage Area
at the
Former McLouth Steel Products Corporation
Trenton, Michigan

Submitted to DSC Ltd. Trenton, Michigan

Clayton Project No. 13-97153.00

December 9, 1997

Limitations

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This report submitted by:

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Project Hydrogeologist

Environmental Risk Management and Remediation

Detroit Regional Office

This report reviewed by:

Robert A. Ferree, CPG

Senior Geologist and Supervisor of Geosciences Environmental Risk Management and Remediation

Detroit Regional Office

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This report reviewed by:

Derek R. Wong, Ph.D. P.E.

Senior Hydrogeologist and Manager

Environmental Risk Management and Remediation

Detroit Regional Office



APPENDIX A
SOIL BORING LOGS

Boring Log

Clayton Boring MW-2

		-,					0.1	6-2	Comment	PID	ļ
	17 feet BGS	U	R	Soil	N	Soil Type	Color	Soil Moisture	Commen	ppm	
Final depth	17 (ext BUS										
					_			<u> </u>			71 17
Page	1 of 1	0									
Boring.	Former McLouth				l						100 10
location	Steel Plant										
	· ·	2							•		
		-					1				
Clina	DSC Lid	_		i							\ ፠ ⊗
CITE/II	DGC LIM.					1					‱ ⊗
		4	1			·					‱ ⊗
								ļ			⋙ ※
Project No.	13-97153.00.004		Ì						ł		፠ ፠
		ļ									፠ ፠
Site	Former McLouth	6		l	1				1		፠ ፠
	Steel Plant	\vdash]			ļ			‱ ⊗
											‱ ⊗
		8	-				1	İ			\
**		ľ				·	ŀ	;			888 88
Clayton	Gary Blinkiewicz		1	1							
geologist	,]		88€ 88
	Rau Drilling	10						1			88 8
	20 Nov 96	L							1		DESC 28
Final date	20 Nov 96	1	1						1	1	
	Hollow stem auget										
Auger OD	4.25 inches	12		ļ							◎=
Sampler			-						'		
Elevation			1		1						
Datum Ground surface	feet	14	1	ļ							<u> </u>
Стина зипасе	1661	1.7	80		1 18	CLAYEY SAND with pebbles	Black	Moist	No odor	0	
Monitoring Well	MW-2		1		62		1	Moist			◎==
TOC elevation	feet	ŀ			9	1		Moist			
Grout	3.0 feet BGS	16	1] 7	η		Moist			◎〓
interval	90 feet BGS				Ţ			<u> </u>			
Bentonite plus	2.0 feet thick				Ì			ļ	ļ		End of
Filter pack	11.0 feet BGS		1								Boring
interval	17.0 feet BGS	18		1			1				
Screen length	5.0 feet		┨	ł	1	·					1
Stot size Screen bottom	0.10 inches 17.0 feet BGS		1		1				i		1
Grout method	17.0 (BEL BCIS	20	1				İ		1		
Pack material	sand	- "			1				1	1	1
Grout material			1		1			-			1
Development	purge				1		ļ	1		ŀ	1
Well lock No		22						1			
		,	1		i			1			
Graundwater	Date 1							1	1	ŀ	
Static level	1		-	1				1		1	
Elevation	fect	24		1				[
Volume purged Conductivity	galions µmhos	├ ─	┨					1		1	
Temperature	μπλοs °F							1			
рН		26	1								
	Date 2										
Static level			1								1
Elevation	feet	IL.]					1			1
Volume purged	gallons	28]								1
Conductivity	штьнов	IL_	_					1			
Temperature											
pН	<u> </u>	1	4								1
Clayton		30	1						1		
*** *** *** *** *** *		\vdash	-			1		1		`	1
ENVIRONMENTAL				1							1
CONSULTANTS		L		_l	-		<u> </u>	1			

Clayton Boring MW-3 PID Color Soil Comment Soil Type Moisture ppm 18 feet BGS Final depth 0 of Page Boring Former McLouth location Steel Plant 2 Client DSC Ltd. 4 No odor Dark Dry 30 SAND fill with piceces of cement Project No. 13-97153.00.004 50 Brown Dry Dry 25 Former McLouth 6 Dry 25 Steel Plant 8 Clayton Nick McCullough geologist No odor 36 CLAYEY SILT fill with piceces of concrete and rock 50 Rau Drilling Driller Dry 18 1 Nov 96 Start date Dry 50 1 Nov 96 Final date Dry Method Hollow stem auger 12 Auger OD 4.25 inches Sampler Elevation Daium 14 fect Ground surface Moist No odor Black 10 12 SAND, medium- to coarse-grained MW-3 Monitoring Well Moist TOC elevation feet Moist 3.0 feet BOS 16 13 Grout Moist interval 90 feet BGS 20 feet thick Benionite plug 11.0 feet BGS Filter pack 18 18 0 feet BGS mierial Boring 50 feet Screen length 0.10 inches Slot size 180 feet BGS Screen hollom 20 Grout method Pack material Grout material Development purge 22 Well lock No (iroundwater Date 1 feet below TOC Static level 24 Elevation (cct gallons Volume purged Conductivity umhos ٥F Temperature 26 pН Date 2 feet below TOC Static level fect 28 Volume purged gallons µmhos Conductivity Temperature ٩° 30 Clayton ENVIRONMENTAL

CONSULTANTS

Boring Log

Clayton Boring MW-4 Comment PID Color Soil Soil Type Soll N Moisture ppm 30 feet BGS Final depth 0 of Page Boring Former McLouth Steel Plant location 2 Client DSC Ltd. 4 No odor SAND fill with pebbles, pieces of brick, metal debris, Dry Project No. 13-97153.00.004 50 Dry and refuse Dry Site Former McLouth 11 6 Dry-13 Steel Plant 8 Clayton Gary Blinkiewicz geologisi Dry No odor Black 46 CLAYEY SAND fill with pebbles, piceces of brick, 10 Daller Rau Drilling Dry 45 and metal debox 31 Oct 96 Start date Dry 50 1 Nov 96 Final date Dry Hollow stem auger Method 12 4.25 inches Auger OD Sampler Elevation Datum 14 Ground surface MW-1 Monitoring Well TOC elevation ícet 16 3.0 feet BGS Grout 21.0 feet BGS interval 2.0 feet thick Bentonite plug 23.0 feet BGS Filter pack 18 30.0 feet BGS internal 50 feet Screen ungth 0.10 inches Stel size 30.0 Jeet BGS Screen bottom Dry No odor Brown 20 CLAYEY SAND fill with pebbles, rock, and 20 100 Grout method Dry 18 proces of back Pack material Dry Grout material Dry Development 22 Well lock No. Date ! Ground-ater feet below TOC Static Irrel 24 Elecation feet Volume purged gallons No odor Black/ Dry CLAYEY SAND with pebbles 20 Conductivity μmhos Gray Dry ٩F Temperature Moist 26 pHMoist Date 2 feet below TOC Static level Elevation [cet Volume purged galions 28 Conductivity шnhos Temperature ρH 30 Clayton Boring | ENVIRONMENTAL CONSULTANTS

Boring Log

Clayton Boring MW-5 Soll PID Comment Color Soil Type ppm Moisture 18 feet BGS Final depth 0 Page o. Former McLouth Boring location Steel Plant 2 Client DSC Ltd. 4 Dry No odor Black Project No. 13-97153.00.004 40 Dry 25 Dry 6 26 Former McLouth Dry 30 Steel Plant 8 Clayton Gary Blinkiewicz geologist Dark Dry No odor 10 60 Dnller Rau Drilling Dry Brown 20 30 Oct 96 Start date Dry 18 30 Oct 96 Final date Dry Method Hollow stem auger 4.25 inches 12 Auger OD Sampler Elevation Datum fce: Ground surface Dry No odor Brown MW-4 40 Monitoring Well Dry TOC elevation fee: Moist 3.0 feet BGS 16 GrousMoist interval 9.0 feet BGS 2.0 feet thick Bentonite plug 110 feet BGS Filter pack 18 End of 18 0 feet BGS interval Boring 5.0 feer Screen length 0.10 inches Stot size 18.0 feet BGS Screen bottom 20 Grout method i'ack material Grout material Development baths 22 Well lock No. Groundwater Date : feet below TOC Static level 24 Einainn feet gallons Volume purged Conductivity цmhos ۰F Temperature pH26 Date 2 State level teet below TOC Elevation lect 28 Volume purged gailons Conductivity umhos Temperature ۰F 30 Clayton ENVIRONMENTAL CONSULTANTS



APPENDIX B ANALYTICAL RESULTS OF GROUNDWATER SAMPLES

Table 1 Analytical Results for

DSC LTD.

Clayton Project No. 43906.00/13-97153.00

Page 2 of

Sample Identification:

MW-1

Lab Number:

001a

Sample Type:

Water

Analyst:

CW

Date Sampled:

11/08/96

11/08/96

11/11/96

11/26/

11/26/

11/26/

11/26/

Date Received:

Date Sampled:

Date Received:

EPA 3020A 11/19/96 EPA 200.8

EPA 3020A 11/19/96 EPA 200.8

EPA 3020A 11/19/96 EPA 200.8

EPA 3020A 11/19/96

11/11/96

. Analyte		Concentration (mg/L)	LOD (mg/L)	Preparation Method and Date		Analytical Method and Date	
Barium Cadmium Chromium Lead		<0.2 0.015 0.1 0.013	0.20 0.0005 0.05 0.003	EPA 3020A 1	11/19/96 11/19/96 11/19/96 11/19/96	EPA 200.8 EPA 200.8 EPA 200.8 EPA 200.8	11/26/9 11/26/9 11/26/9 11/26/9

LOD

(mg/L)

0.20

0.05

0.003

0.0005

Sample Identification:

Analyte

MW-3

Lab Number:

002a

Sample Type:

Water

Concentration

(mg/L)

0.55

0.013

0.12

0.012

Analyst:

Barium

Lead

Cadmium

Chromium

CW

Preparation	Analytical
Method and Date	Method and Date

EPA 200.8

Table 1 (continued) Analytical Results for

Page

3 of

DSC LTD. Clayton Project No. 43906.00/13-97153.00

Sample Identification:

MW-4

Lab Number:

003a

Sample Type: Analyst:

Water CW

Date Sampled:

11/08/96

Date Received:

Date Sampled:

EPA 3020A 11/19/96 EPA 200.8 11/26/

EPA 3020A 11/19/96 EPA 200.8 11/26/

11/11/96

	Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method an		Analytical Method and Date		
Barium		0.5 4	0.20	EPA 3020A	11/19/96	EPA 200.8	11/26/9	
Cadmium		0.017	0.0005	EPA 3020A	11/19/96	EPA 200.8	11/26/9	
Chromium		<0.05	0.05	EPA 3020A	11/19/96	EPA 200.8	11/26/9	
Lead		0.026	0.003	EPA 3020A	11/19/96	EPA 200.8	11/26/9	

Sample Identification:

MW - 5

Lab Number:

004a

Sample Type:

Water

CW

Analyst:

Cadmium

Chromium

Date Received:

11/08/96

11/11/96

Analytical Preparation LOD Concentration Method and Date Method and Date (mg/L) (mg/L) Analyte EPA 3020A 11/19/96 EPA 200.8 11/26/ (0.2 0.20 Barium 0.0005 EPA 3020A 11/19/96 EPA 200.8 11/26/

0.05

0.003

0.017

0.11

0.011

Table 1 (continued) Analytical Results for

DSC LTD.

Clayton Project No. 43906.00/13-97153.00

4 of Page

Sample Identification:

EB-3

11/08/96 Date Sampled: 11/11/96

Lab Number: Sample Type:

005a Water Date Received:

Date Sampled:

Date Received:

11/08/96

11/11/96

Analyst:

CW

Analyte		Concentration (mg/L)	LOD (mg/L)	Preparation Method and Date		Analytical Method and Date		
Barium		<0.2	0.20	EPA 3020A	11/19/96 11/19/96	EPA 200.8 EPA 200.8	11/26/9 11/26/9	
Cadmium. Chromium		0.015 0.12	0.0005 0.05	EPA 3020A EPA 3020A	11/19/96	EPA 200.8	11/26/9	
Load		0.011	0.003	EPA 3020A	11/19/96	EPA 200.8	11/26/9	

Sample Identification:

MW-4 DUPLICATE

Lab Number:

006a

Sample Type:

Water

Analyst:

CW

Analytical Preparation Concentration LOD Method and Date Method and Date (mg/L) (mg/L) Analyte EPA 3020A 11/19/96 EPA 200.8 11/26/9 0.46 0.20 Barium 0.0005 EPA 3020A 11/19/96 EPA 200.8 11/26/9 0.016 Cadmium EPA 3020A 11/19/96 EPA 200.8 11/26/9 0.05 <0.05 Chromium EPA 200.8 11/26/ EPA 3020A 11/19/96 0.003 0.022

Clayton

Table 1 (continued) Analytical Results for

DSC LTD.

Clayton Project No. 43906.00/13-97153.00

5 of Page

Sample Identification:

Lab Number:

Sample Type: Analyst:

MW-3 MS 007a

Water

CW

Date Sampled:

11/08/96

Date Received:

11/11/96

	Analyte	Concentration (mg/L)	LOD (mg/L)	Preparation Method and Date	Analytical Method and Date		
Barium		0.61	0.20	EPA 3020A 11/19/96	EPA 200.8 11/26/9		
Cadmium		0.016	0.0005	EPA 3020A 11/19/96	EPA 200.8 11/26/9		
Chromium		0.12	0.05	EPA 3020A 11/19/96	EPA 200.8 11/26/9		
Lead		0.013	0.003	EPA 3020A 11/19/96	EPA 200.8 11/26/9		

Sample Identification:

Lab Number:

Sample Type:

Analyst:

MW-3 MSD 008a

Water

CW

Date Sampled: Date Received: 11/08/9t

11/11/9:

Analytical Preparation Concentration LOD Method and Date Method and Date (mg/L) (mg/L) Analyte EPA 200.8 11/26/ 0.20 EPA 3020A 11/19/96 0.53 Barium 11/26/ EPA 200.8 0.0005 EPA 3020A 11/19/96 0.014 Cadmium EPA 200.8 11/26/ EPA 3020A 11/19/96 0.05 <0.05 Chromium EPA 200.8 11/26/ 11/19/96 EPA 3020A 0.003 0.02 Lead

Table 1 (continued) Analytical Results for

DSC LTD.

Clayton Project No. 43906.00/13-97153.00

Page 6 of 6

Sample Identification: LAB BLANK

Date Sampled:

Lab Number: Sample Type:

009a Water Date Received:

11/11/96

Analyst:

CW

Analyte	Concentration (mg/L)	LOD (mg/L)	Preparation Method and Date		Analytical Method and Date		
Barium	·	<0.2	0.20	EPA 3020A	11/19/96	EPA 200.8	11/26/9
Cadmium		<0.0005	0.0005	EPA 3020A	11/19/96	EPA 200.8	11/26/9
Chromium		<0.05	0.05	EPA 3020A	11/19/96	EPA 200.8	11/26/9
Lead		<0.003	0.003	EPA 3020A	11/19/96	EPA 200.8	11/26/9

General Notes

^{--:} Information not available or not applicable.

Clayton

Analytical Results for DSC LTD.

Clayton Project No. 44250.00/13-97153.00

Sample Identification:

MW-1

Lab Number:

001

Sample Type:

Water

Analyst:

CR

Date Sampled:

11/20/96

Date Received:

11/21/96

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.05	0.05	EPA 7196	11/21/96

Sample Identification:

MW - 2

Lab Number:

002

Sample Type:

Water

Analyst: -

CR

Date Sampled: Date Received: 11/20/96

11/21/96

Date Analytical LOD Concentration Analyzed Method (mg/L)(mg/L)Analyte 11/21/96 EPA 7196 0.05 <0.05 Hexavalent chromium



Analytical Results for DSC LTD. Clayton Project No. 44250.00/13-97153.00

Sample Identification:

MW-2

Lab Number:

002b

Sample Type:

Water

Analyst:

.CM

Date Sampled:

11/20/96

Date Received:

11/21/96

	Analyte	Concentration Analyte (mg/L)		LOD (mg/L)	Preparation Method and Date		Analytical Method and Date		
Barium	<0.2	0.2	EPA 3020A	11/26/96	EPA	6020A	12/04/9		
Cadmium		<0.0005	0.0005	EPA 3020A	11/26/96	EPA	6020A	12/04/9	
Chromium Lead		0.08 <0.003	0.05 0.003	EPA 3020A EPA 3020A	11/26/96 11/26/96		6020A 6020A	12/04/9 12/04/9	

Clayton

Analytical Results for DSC LTD. Clayton Project No. 44250.00/13-97153.00

Sample Identification: MW-3

Date Sampled:

11/20/96

Lab Number:

003

Sample Type:

Water

Date Received:

11/21/96

Analyst:

CR

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed

EPA 7196 11/21/96 0.05 Hexavalent chromium <0.05

Sample Identification: MW-4

Date Sampled: Date Received: 11/21/96

11/20/96

Lab Number: Sample Type:

Analyst:

004

Water

CR

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromit	um <0.05	0.05	EPA 7196	11/21/96

Analytical Results for DSC LTD. Clayton Project No. 44250.00/13-97153.00

Sample Identification: MW-5

Date Sampled:

11/20/96

Lab Number:

005

Sample Type:

Water

Date Received:

11/21/96

Analyst:

CR

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromium	n <0.05	0.05	EPA 7196	11/21/96

General Notes:

<: Less than the indicated limit of detection (LOD)

--: Information not available or not applicable

Limit of detection was raised due to matrix interference.



Analytical Results for

DSC LTD.

Clayton Project No. 46319.00/13-97153.00

Sample Identification:

Lab Number:

MW-1 001a

Sample Type: :

Water

Analyst:

CW

Date Sampled:

02/05/97

02/05/91

02/06/97

Date Sampled:

Date Received:

Date Received: . 02/06/97

	Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method an		Analyti Method ar	
Barium		<0.2	0.2	EPA 3020A	02/17/97	EPA 6020	02/19/5
Cadmium		<0.0005	0.0005	EPA 3020A	02/17/97	EPA 6020	02/19/5
Chromium		<0.05	0.05	EPA 3020A	02/17/97	EPA 6020	02/19/5
Lead		<0.003	0.003	EPA 3020A	02/17/97	EPA 6020	02/19/5

Sample Identification:

MW - 2

Lab Number:

002a

Sample Type:

Water

Analyst:

CW

Analytical Preparation Concentration LOD Method and Date Method and Date (mg/L) (mg/L) Analyte EPA 3020A 02/17/97 EPA 6020 02/19/ 0.2 0.2 Barium 0.0005 EPA 3020A 02/17/97 EPA 6020 02/19/ <0.0005 Cadmium 0.05 EPA 3020A 02/17/97 EPA 6020 02/19/ <0.05 Chromium EPA 3020A 02/17/97 EPA 6020 <0.003 0.003



Analytical Results for DSC LTD.

Clayton Project No. 46319.00/13-97153.00

Sample Identification:

MW-3

Lab Number:

003a

Sample Type:

Water

Analyst:

Date Sampled:

02/05/97

Date Received:

02/06/97

02/05/9

02/06/9

Date Sampled:

Date Received:

	Analyte	Concentration (mg/L)	LOD (mg/L)	Preparation Method and Dat	.e	Analyti Method ar	
Barium Cadmium Chromium Lead		0.6 <0.0005 <0.05 <0.003	0.2 0.0005 0.05 0.003	EPA 3020A 02/1 EPA 3020A 02/1	.7/97 .7/97 .7/97 .7/97 .7/97	EPA 6020 EPA 6020 EPA 6020 EPA 6020	02/19/ 02/19/ 02/19/ 02/19/

Sample Identification:

MW - 4

Lab Number:

004a

Sample Type:

Water

CW

Analyst:

	Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method an		Analyt: Method a	
Barium		0.4	0.2	EPA 3020A	02/17/97	EPA 6020	02/19
Cadmium		<0.0005	0.0005	EPA 3020A	02/17/97	EPA 6020	02/19
Chromium		<0.05	0.05	EPA 3020A	02/17/97	EPA 6020	02/19
Lead		<0.003	0.003	EPA 3020A	02/17/97	EPA 6020	02/19



Analytical Results for DSC LTD.

Clayton Project No. 46319.00/13-97153.00

Sample Identification:

MW-5

Lab Number:

005a

Sample Type:

Water

Analyst:

· CW

Date Sampled:

02/05/97

Date Received:

02/06/97

.•	Analyte	Concentration (mg/L)	LOD (mg/L)	Preparat Method and		Analyti Method ar	
Barium Cadmium Chromium Lead	<0.05	0.2 <0.0005 <0.05 <0.003	0.2 0.0005 0.05 0.003	EPA 3020A EPA 3020A EPA 3020A EPA 3020A	 02/17/97 02/17/97 02/17/97 02/17/97	EPA 6020 EPA 6020 EPA 6020 EPA 6020	02/19/9 02/19/9 02/19/9 02/19/9

Sample Identification:

EB-1

Lab Number:

006a

Sample Type:

Water

Analyst:

Date Sampled: Date Received: 02/05/97

02/06/9

CW

Analytical Concentration LOD Preparation Method and Date Method and Date (mg/L) (mg/L) Analyte <0.2 0.2 EPA 3020A 02/17/97 EPA 6020 02/19/ Barium EPA 3020A 02/17/97 EPA 6020 02/19/ Cadmium <0.0005 0.0005 EPA 3020A 02/17/97 EPA 6020 02/19/ 0.05 <0.05 Chromium 02/19/ 0.003 EPA 3020A 02/17/97 EPA 6020 Lead <0.003



Analytical Results for DSC LTD. Clayton Project No. 46319.00/13-97153.00

Sample Identification:

LAB BLANK

Date Sampled:

02/05/97

Lab Number: .

007a

Date Received:

02/05/97

Sample Type:

Water

Analyst:

CW

	Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method an		Analyt Method a	
Barium Cadmium Chromium		<0.2 <0.0005 <0.05	0.2 0.0005 0.05	EPA 3020A EPA 3020A EPA 3020A	02/17/97 02/17/97 02/17/97	EPA 6020 EPA 6020 EPA 6020	02/19/9 02/19/9 02/19/9
Lead		<0.003	0.003	EPA 3020A	02/17/97	EPA 6020	02/19/9

Analytical Results for DSC LTD. Clayton Project No. 46319.00/13-97153.00

Sample Identification: MW-1

02/05/97

Lab Number:

Sample Type:

Water

Date Sampled: Date Received:

02/06/97

Analyst:

CR

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.005	0.005	EPA 7196	02/06/97

Sample Identification: MW-2

Lab Number:

002 Water

Sample Type:

Date Sampled:

02/05/97

Date Received:

02/06/97

Analyst:

CR

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.05	0.05 (a)	EPA 7196	02/06/97

Analytical Results for DSC LTD.

Clayton Project No. 46319.00/13-97153.00

Sample Identification:

MW-3

Lab Number:

003

Sample Type:

Water

Analyst:

CR

Date Sampled:

02/05/97

Date Received: 02/06/97

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.05	0.05 (a)	EPA 7196	02/06/97

Sample Identification:

MW - 4

Lab Number:

004

Sample Type: Analyst:

Water

CR

Date Sampled:

02/05/97

Date Received:

02/06/97

Analytical Date LOD Concentration Method Analyzed (mg/L) (mg/L)Analyte

Hexavalent chromium

- 0.05 (a) <0.05

EPA 7196

02/06/97



Analytical Results for

DSC LTD.

Clayton Project No. 46319.00/13-97153.00

Sample Identification:

MW-5

02/05/97

Lab Number:

005

Sample Type: Analyst:

CR

water

Date	Sampled:	02/05/97
Date	Received:	02/06/97

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.05	0.05 (a)	EPA 7196	02/06/97

Sample Identification:

EB-1

Lab Number:

006 Water

Sample Type: Analyst:

CR

Date Sampled:

02/05/97

Date Received:

02/06/97

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.005	0.005	EPA 7196	02/06/97

(a) Limit of detection was raised due to sample matrix. General Notes:

Less than the indicated limit of detection (LOD)

--: Information of available or not applicable



Analytical Results

for

DSC LTD.

Clayton Project No. 50210.00/13-97153.00

Sample Identification:

MW-1

Lab Number:

001a Water

Sample Type: Analyst:

CW

Date Sampled:

05/23/97

05/23/97

05/23/97

05/23/9~

Date Sampled:

Date Received:

Date Received:

Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method an		Analyti Method ar	
Metals Barium Cadmium Chromium Lead	<0.2	0.2	EPA 6020	06/06/97	EPA 6020	06/09/9
	0.0078	0.0005	EPA 6020	06/06/97	EPA 6020	06/09/9
	<0.05	0.05	EPA 6020	06/06/97	EPA 6020	06/09/9
	0.004	0.003	EPA 6020	06/06/97	EPA 6020	06/09/9

Sample Identification:

MW-2

Lab Number:

002a

Sample Type:

Water

Analyst:

CW

Analyte	Concentration (mg/L)	LOD (mg/L)	Preparation Method and Date	Analytical Method and Date
Metals			5000 05/05/07	EPA 6020 06/09/
Barium	(0.2	0.2	EPA 6020 06/06/97	
Cadmium	0.011	0.0005	EPA 6020 · 06/06/97	EPA 6020 06/09/
Chromium	<0.05	0.05	EPA 6020 06/06/97	EPA 6020 06/09/
Lead	0.021	0.003	EPA 6020 06/06/97	EPA 6020 06/09/



Analytical Results for DSC LTD.

Clayton Project No. 50210.00/13-97153.00

Sample Identification:

MW - 3

Lab Number:

003a

Sample Type:

Water

Analyst:

CW

Date Sampled:

Date Sampled:

Date Received:

05/23/9~

05/23/9~

05/23/97 05/23/9"

Date Received:

Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method ar		Analyt Method a	
Metals						
Barium	0.5	0.2	EPA 6020	06/06/97	EPA 6020	06/09/9
Cadmium	0.0083	0.0005	EPA 6020	06/06/97	EPA 6020	06/09/9
Chromium	<0.05	0.05	EPA 6020	06/06/97	EPA 6020	06/09/9
Lead	0.079	0.003	EPA 6020	06/06/97	EPA 6020	06/09/9

Sample Identification:

MW - 4

Lab Number:

004a

Sample Type:

Water

Analyst:

CW

Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method ar		Analyti Method an	
Metals						
Barium	0.4	0.2	EPA 6020	06/06/97	EPA 6020	06/09/9
Cadmium	0,0068	0.0005	EPA 6020	06/06/97	EPA 6020	06/09/9
Chromium	<0.05	0.05	EPA 6020	06/06/97	EPA 6020	06/09/
Lead	0.073	0.003	EPA 6020	06/06/97	EPA 6020	06/09/



Analytical Results for DSC LTD.

Clayton Project No. 50210.00/13-97153.00

Sample Identification:

MW-5

05/23/97

Lab Number:

005a

Sample Type:

Water

Analyst:

CW

Date Sampled: Date Received:

05/23/97

•	Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method as		Analyti Method ar	
Metals							
Barium		<0.2	0.2	EPA 6020	06/06/97	EPA 6020	06/09/9
Cadmium		0.0074	0.0005	EPA 6020	06/06/97	EPA 6020	06/09 /9
Chromiun	n	<0.05	0.05	EPA 6020	06/06/97	EPA 6020	06/09/9
Lead		0.085	0.003	EPA 6020	06/06/97	EPA 6020	06/09/9

Sample Identification: LAB BLANK

Date Sampled: Date Received:

05/23/97

Lab Number:

006a

Sample Type:

Water

Analyst:

CW

Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method a		Analyti Method ar	
Metals				- " -		
Barium	<0.2	0.2	EPA 6020	06/06/97	EPA 6020	06/09/9
Cadmium	<0.0005	0.0005	EPA 6020	06/06/97	EPA 6020	06/09/9
Chromium	<0.05	0.05	EPA 6020	06/06/97	EPA 6020	06/09/9
Lead	<0.003	0.003	EPA 6020	06/06/97	EPA 6020	06/09/9

General Notes

--: Information not available or not applicable.

Analytical Results for DSC, LTD. Clayton Project No. 50210.00/13-97153.00

Sample Type:

Water

Analytical Method:

EPA 7196

Analyst:

CR

Date Sampled:

05/23/97

Date Received: Date Prepared:

05/23/97 05/23/97

Date Analyzed:

05/23/97

	·	Hexavalen	t chromium
Lab No.	Sample Identification	(mg/L)	LOD (mg/L)
•	MV 1	<0.05	.∕ 0.05
01b	MW-1 MW-2	<0.05	0.05
02b	MW - 3	<0.05	0.05
03b	_	<0.05	0.05
004b 005b	MW - 4 MW - 5	<0.05	0.05

General Notes:

Less than the indicated limit of detection (LOD)

--: Information not available or not applicable



Analytical Results for

DSC LTD.

Clayton Project No. 53532.00/13-97153.00

Sample Identification:

MW - 1

Lab Number:

001a

Sample Type:

Water

Analyst:

CW

Date Sampled:

.08/27/97

Date Received:

08/27/97

Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method an		Analyt: Method ar	
Dissolved Metals Barium Cadmium Chromium Lead	<0.2	0.2	EPA 3020A	09/05/97	EPA 6020	09/08/9
	<0.0005	0.0005	EPA 3020A	09/05/97	EPA 6020	09/08/9
	<0.05	0.05	EPA 3020A	09/05/97	EPA 6020	09/08/9
	<0.003	0.003	EPA 3020A	09/05/97	EPA 6020	09/08/9

Sample Identification:

MW-2

Lab Number:

002a

Sample Type:

Water

Analyst:

CW

Date Sampled: Date Received: 08/27/97

08/27/97

	Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method an	Analyti Method an	
Dissolved	Watala.					



Analytical Results for DSC LTD.

Clayton Project No. 53532.00/13-97153.00

Sample Identification:

MW-3

Lab Number:

003a

Sample Type:

Water

Analyst:

CW

Date Sampled:

08/27/97

Date Received: . 08/27/97

Analyte	Concentration (mg/L)	LOD (mg/L)	Prepara Method an		Analyti Method an	
Dissolved Metals Barium Cadmium Chromium Lead	0.5 <0.0005 <0.05 0.007	0.2 0.0005 0.05 0.003	EPA 3020A EPA 3020A EPA 3020A EPA 3020A	.9/05/97 09/05/97 09/05/97 09/05/97	EPA 6020 EPA 6020 EPA 6020 EPA 6020	09/08/9 09/08/9 09/08/9

Sample Identification:

Lab Number:

MW - 4 004a

Sample Type:

Water

CW

Analyst:

Date Sampled:

08/27/97

Date Received:

08/27/97

Analyte			Prepara Method and		Analytical Method and Date	
Dissolved Metals						
Barium	0.4	0.2	EPA 3020A	09/05/97	EPA 6020	09/08/
Cadmium	<0.0005	0.0005	EPA 3020A	09/05/97	EPA 5020	09/08/
Chromium	<0.05	0.05	EPA 3020A.	09/05/97	EPA 6020	09/08/
Load	0 004	0 003	EPA 3020A	09/05/97	EPA 6020	09/08/



Analytical Results for DSC LTD.

Clayton Project No. 53532.00/13-97153.00

Sample Identification:

MW-5

Date Sampled:

08/27/97

Lab Number:

005a

Date Received:

08/27/97

08/27/97

08/27/97

Sample Type:

Water

Analyst:

Analyte	Concentration (mg/L)	LOD (mg/L)	Preparation Method and Date		Analytical Method and Date	
Dissolved Metals Barium Cadmium Chromium Lead	0.5	0.2	EPA 3020A	09/05/97	EPA 6020	09/08/9
	<0.0005	0.0005	EPA 3020A	09/05/97	EPA 6020	09/08/9
	0.15	0.05	EPA 3020A	09/05/97	EPA 6020	09/08/9
	0.19	0.003	EPA 3020A	09/05/97	EPA 6020	09/08/9

Sample Identification: EB-1

Lab Number:

006a

Water

Sample Type:

Analyst:

Date Sampled:

Date Received:

Analyte	Concentration LOD Preparation Analyte (mg/L) (mg/L) Method and Date			Analytical Method and Date		
Dissolved Metals						
Dissolved Metals Barium	<0.2	0.2	EPA 3020A	09/05/97	EPA 6020	09/08/
	<0.2 <0.0005	0.2 0.0005	EPA 3020A EPA 3020A	09/05/97 09/05/97	EPA 6020 EPA 6020	09/08/
Barium	·			09/05/97		- '



08/27/97

Analytical Results for DSC LTD. Clayton Project No. 53532.00/13-97153.00

Sample Identification: LAB BLANK

Date Sampled: Date Received:

Lab Number:

007a

Sample Type:

Water

Analyst:

· CW

Analyte	Concentration (mg/L)	LOD (mg/L)	Preparation Method and Date		Analytical Method and Date	
				;		
Metals	<0.2	0.2	EPA 3020A	09/05/97	EPA 60	20 09/08/9
Barium Cadmium	(0.0005	0.0005	EPA 3020A	09/05/97	EPA 60	
Chromium	<0.05	0.05	EPA 3020A	09/05/97	EPA 60	20 09/08/9
Lead	<0.003	0.003	EPA 3020A	09/05/97	EPA 60	20 09/08/9
		_				

General Notes

--: Information not available or not applicable.

Analytical Results for DSC LTD.

DSC LTD. Clayton Project No. 53532.00/13-97153.00

Sample Identification:

MW-1

Lab Number:

001

Sample Type:

Water

Analyst:

SC

Date Sampled:

08/27/97

Date Received:

08/27/97

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date . Analyzed .	
Hexavalent chromium	<0.05 (a)	0.05	EPA 7196	08/28/97	

Sample Identification:

MW - 2

Lab Number:

002

Sample Type:

Water

Analyst:

sc

Date Sampled: Date Received: 08/27/97

08/27/97

Concentration LOD Analytical Date (mg/L) (mg/L) Method Analyzed

Hexavalent chromium <0.05 (a) 0.05 EPA 7196 08/28/97

Clayton

Analytical Results for

DSC LTD.

Clayton Project No. 53532.00/13-97153.00

Sample Identification: MW-3

08/27/97

Lab Number:

003

Date Sampled: Date Received:

Sample Type: Analyst:

Water

SC

08/27/97

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.005	0.005	EPA 7196	08/28/97

Sample Identification: MW-4

Lab Number:

004

Sample Type:

Water

Analyst:

Date Sampled: Date Received:

08/27/97 08/27/97

ŞC

Analyte	Concentration (mg/L)	LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.05 (a)	0.05	EPA 7196	08/28/97

Clayton ENVIRONMENTAL CONSULTANTS

Analytical Results for

DSC LTD.

Clayton Project No. 53532.00/13-97153.00

Sample Identification:

MW-5

Date Sampled:

08/27/97

Lab Number:

005

Date Received:

08/27/97

Sample Type:

Water

Analyst:

Analyte

SC

Analytical Method (mg/L)

Date Analyzed

Hexavalent chromium

<0.05 (a)

Concentration

 (mg/I_i)

0.05 -

LOD

EPA 7196

08/28/97

Sample Identification:

Lab Number:

Sample Type:

Analyst:

EB-1 006

Water

SC

Date Sampled: Date Received: 08/27/97

08/27/97

Date Analytical LOD Concentration Method Analyzed (mg/L)(mg/L) · · · Analyte 08/28/97 0.05 EPA 7196 Hexavalent chromium < 0.05 (a)

Analytical Results for

DSC LTD.

Clayton Project No. 53532.00/13-97153.00

Sample Identification: LAB BLANK

Date Sampled:

Lab Number:

008 Water

Sample Type: Analyst:

SC

Date Received:

Analyte	Concentration (mg/L)		LOD (mg/L)	Analytical Method	Date Analyzed
Hexavalent chromium	<0.005	J	0.005	EPA 7196	08/28/97

⁽a) Limit of detection raised due to sample matrix. General Notes:

<: Less than the indicated limit of detection (LOD)

^{--:} Information not available or not applicable

APPENDIX D FINAL WASTE REMOVAL MANIFESTS

In case of an emergency or spill immediately call the National Response Center (800) 424-8802 and the PA DER (717) 787-4343

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

AND CHEMOTHERAPEUTIC WASTE.

Form approved.

Bureau of Waste Management
P. O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM ER-WM-51 REV. 1/91

OMB No. 2050-0039 Expires 9-30-91

3. Generator's Name and Mailing Address HCLOUTH STREL - ATTH D. WINDELER 1650 W. JEFFERSON AVENUE TRENTON. MICHIGAN 48183 4. Generator's Phone (313) 285-1200 5. Transporter 1 Company Name AUTUMN INDUSTRIES, INC. PH D 9 8 6 9 7 4 7 8 0 7. Transporter 2 Company Name 7. Transporter 3 Company Name		rator's US EPA ID No. 4 2 3 3 0 4	F L Document No.	2. Page 1	is not requi	in the shaded areas red by Federal law red by State law.
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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM AND CHEMOTHERAPEUTIC WASTE.

Form approved.

WM-51 REV. 1/91	Harrisburg, P. OFFICIAL PENNSYLVA 1. Generator's US EPA ID 1	NIA MANIFEST	FORM Manifest ocument No.	2. Page 1		OMB No. Expires s- in the shaded are	30-91 000
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EMERGENCY RESPONSE GO							
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P.O. HUMBER - HSX50	- -						
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20 Secility Owner or Operator: Certific	cation of receipt of hazardous mat	erials covered by thi	s manifest exc	pt as noted	l in Item 19.		
Printed Typed Name	N 1+	Signature	Z nb			1	C

In case of an envergency or spill immediately call the National Response Center (800) 424-8802 and the PA DER (717) 787-4343

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management P. O. Box 6550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved.
OMB No. 2050-0039

1	UNIFORM HAZARDOUS 1. Generator's US EPA WASTE MANIFEST 1. Generator's US EPA WASTE MANIFEST 1. Generator's US EPA WASTE MANIFEST	ID Nó:	Manifest cument No.	2. Page	الله not requiri	n the shaded areas in the shaded areas	2 79 22 -
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	7. Transporter 2 Company Name	8. US EPA ID Number		5			1
	9. Designated Facility Name and Site Address	10. US EPA ID Number					
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	 GENERATOR'S CERTIFICATION: I hereby declare that the conte classified, packed, marked, and labeled and are in all respects in proper condition 	nts of this consignment are n for transport by highway a	fully and accu ecording to app	rately desc licable inte	cribed above by prope rnational and national	r shipping name and a government regulations	are s.
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ER-WM-51 REV. 1/91

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Sureau of Waste Management
P. O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved, OMB No. 2050-0039 Expires 9-30-91

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3. Generator's Name and Mailing Address MCLOUTH STREL - ATTM: D. WINDELER			PAU	4900	560			
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ER-WM-51 REV. 1/91

In case of an emeroency or snill immediately call the National Respondenter 6200 424 2000 and the Depresed 787

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Bureau of Waste Management
P. O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

Form approved. OMB No. 2050-0039 Expires 9-30-91

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or spill immediately call the National Response Center (800) 424-8802

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved.

	Bureau of Waste Management	-	_	
	P. O. Box 8550		-	•
do then	Harrisburg, PA 17105-8550			

OMB No. 2050-0039 ER-WM-51 REV. 1/91 OFFICIAL PENNSYLVANIA MANIFEST FORM Expires 9-30-91 UNIFORM HAZARDOUS 1. Generator's US EPA ID No. Manifest Document No. Information in the shaded areas 2. Page 1 is not required by Federal law WASTE MANIFEST 0174.2330 L 9110 but is required by State law. A State Manites Document Number with 1 3. Generator's Name and Mailing Address MCLOUTH STREL - ATTM: D. WINDELER 1650 W. JEFFERSON AVENUE TRENTOW. MICHIGAN 的物 中 B. State Gen. ID described in the control of the cont 4. Generator's Phone (313 285-1200 5. Transporter 1 Company Name C. State Trans. ID 6. US EPA ID Number AUTUMN INDUSTRIES, INC. O H D 9 8 6 9 7 4 7 8 WEILAN IN 7. Transporter 2 Company Name 8. US EPA ID Number DistriBooter's Phone (214) 372-5-03 E. State Trans. ID PA-II 9. Designated Facility Name and Site Address 10. US EPA ID Number F. Transporter's Phone. (HORSEHEAD RESOURCE DEVELOPMENT CO. east plant, delaware avenue G. State Facility's ID H. Facility's Phone (114) PALMERTON, PA 18071 P A D O O 2 3 9 5 8 8 876 12. Containers 11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) Unit Total Waste No. Quantity No. Type RQ HASARDOUS WASTE SOLID N.O.S. ORM-5 9189 3.46 RLECTRIC ARC FURNACE SLUDGE KO61 abst b. G mest. 用有物料 J. Additional Descriptions for Materials Listed Above.

Lab Pack Physical State K. Handling Codes for Wastes Listed Above Lab Pack Physical State c d. 15. Special Handling Instructions and Additional Information EMERGENCY RESPONSE GUIDE NO.31 TRUCK # 704 PM6002 SCALE TICKET P.O. HUMBER HSX5094 16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. Printed/Typed Name Signature YEAR Printed/Typed Name Signature DAY 00 Printed/Typed Name gnature MONTH DAY O. 19. Discrepancy Indication Space /er 126 20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Bureau of Waste Management
P. O. Box 8550
Harrisburg, PA 17105-8550
IAL PENNSYLVANIA MANIFEST FORM

AND CHEMOTHERAPEUTIC WASTE.

Form approved,
OMB No. 2050-0039
Expires 9-30-91

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or spill immediately call the National Response Center (800) 424-8802 and the PA DER (717) 787-4343

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS

AND CHEMOTHERAPEUTIC WASTE. *Bureau of Waste Management P. O. Box 8550 Form approved. Harrisburg, PA 17105-8550 OMB No. 2050-0039 ER-WM-51 REV. 1/91 OFFICIAL PENNSYLVANIA MANIFEST FORM Expires 9-30-91 **UNIFORM HAZARDOUS** 1. Generator's US EPA ID No. Manifest Document No. Information in the shaded areas 2. Page 1 is not required by Federal law WASTE MANIFEST M I B G 1 7 4 2 3 3 0 4 ₽! but is required by State law. A. State Manifest Deculing of Number, medical of the 3. Generator's Name and Malling Address CLOUTH STEEL - ATTN: D. WINDELER 650 W. JEFFERSON AVENUE TRENTON. NICHIGAN B: State Gen. ID Stantin House 4. Generator's Phone 313) 285-1200 5. Transporter 1 Company Name 6. US EPA ID Number State Trans. ID LUTUMN INDUSTRIES, INC. BD986974780 TON MA 7. Transporter 2 Company Name D. Transporter e Prione () 8. US EPA ID Number A afait E. State Trans. ID 蒙計畫 PA-9. Designated Facility Name and Site Address A 1856 10. US EPA ID Number ORSENEAD RESOURCE DEVELOPMENT CO. F. Transporter's Phone (east plant, delaware avenue G. State Facility's ID PALMERTON, PA 18071 H. Facility's Phone 115 826-2111 # A D O O 2 3 9 5 8 8 7 12. Containers 13, 14. Unit 11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) Totai Quantity No. Type Wt/ Vo RO HAZARDOUS WASTE SOLID N.O.S. ORM-E 9189 ELECTRIC ARC FURNACE SLUDGE KO61 0 1 ŋ T 061 1 100 9. 15.10 B ď. J. Additional Descriptions for Materials Listed Above Lab Pack Physical State K. Handling Codes for Wastes Listed Above Lab Pack **Physical State** สดีใจมีสำเนิดและtagt กระบากการ กระเก 15. Special Handling Instructions and Additional Information RESPONSE GUIDE NO.31 160006 TICKET # NUMBER **RSX5094** 16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. Printed/Typed Name Signature MONTH YEAR ransporter 1 Acknowledgement of Receipt of Material Printed/Typed Name Signature YEAR MONTH

Printed/Typed Name Signature MONTH YEAR 19. Discrepancy Indication Space Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except 36 noted in Item 19 Printed/Typed,Name Signature EPA Form 8700-22 (Rev. 9/68) Previous editions are obsolete

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Sureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550

Form approved.

R-WM-51 REV. 1/91	OFFICIAL PENNSYLVANIA MA				OMB No. 2050-0 Expires 9-30-91
UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. D 0 1 7 4 2 3 3 0 4	Manifest Document No.	2. Page 1 of	is not requir	in the shaded areas ad by Federal law ed by State law.
3. Generator's Name and Malling Address NCLOUTH STREL - ATTE: D. 1650 W. JEFFERSON AVENUS 4. Generator's Phone (313) 208.	WINDELER	183	B. State Ge	4900	t Number
5. Transporter 1 Company Name AUTUM INDUSTRIES TRC 7. Transporter 2 Company Name	6. US EPA H C H D 9 8 6 9 6 8. US EPA H	74780	PA:	CARRI GARAGE	The state of the s
9. Designated Facility Name and Site Address HORSEHEAD RESOURCE DEVELO EAST PLANT, DELAWARE AVEN	PARKY CO.	D Number	E. State Tre	ne, ID at life in the life in	Ties new Am
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In case of an emergency or soill immediately call the National Response Center 400) 424-8902 and the PA DED 417) 723-4343

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Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550

AND CHEMOTHERAPEUTIC WASTE.

Form approved, OMB No. 2050-0039

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b. Special Handling Instructions and Additional Information EMERGENCY RESPONSE GUIDE BO. 31 TRUCK \$ 39707 SCALE TICKET \$ 60000 P.O. NUMBER - HSISO94 16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment at classified, packed, marked, and labeled and are in all respects in proper condition for transport by highway If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxic practicable and that I have selected the practicable method of treatment, storage, or disposal currently away and the environment: OB. If I am a small quantity generator. I have made a good faith effort to microrize	re fully and according to app	urately desolicable inte	cribed above by	d.	ing name and a
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Form approved. OMB No. 2050-0039

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In case of an emergency or snill immediately call the National Bespenden Center (2009) 424-2009 and the DEC (27) 787-2019

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management

Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE,

Form approved. OMB No. 2050-0039 Expires 9-30-91

	Manifest current No.	2. Page	is not requi	in the shaded ar red by Federal la red by State law.	028 W
3. Generator's Name and Mailing Address MCLOGTH STREE - LTTM: D. WINDELER 1650 V. JEFFERSON LYRIUE TREWTON. HICHIGAE 48183 4. Generator's Phone (313 285-1200					
5. Transporter 1 Company Name 6. US EPA ID Number		G W.n.c	rich ereke es	4	1457
TRAD INDUSTRIAL SERVICES, INC. N I D G 7 2 7 9 G 7 Transporter 2 Company Name 8. US EPA ID Number	10	* **:/.*			i kay za
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Designated Facility Name and Site Address 10. US EPA ID Number HORSENEAD RESOURCE DEVELOPMENT CO. EAST PLANT, DELAWARE AVENUE		G Hair G Hair	distriction Outside the trans Usellovaler	<u> </u>	
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5. Special Handling Instructions and Additional Information	torphyddiol.	b. 70, 74.	Jil te ≯es G. ⊤ d.	A Land of the	es als
TRUCK # - 19 NACE					
GOLD STORY					
P.O. HUMBER - NEX 5094					
6. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are	hills 1				
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are classified, packed, marked, and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and are in all respects in proper condition for transport by highway and labeled and l	e iully and acciding to ap	urately desc plicable inte	criped above by prop rnational and nationa	er shipping name i government regula	and are stions.
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Printed/Typed Name Signature	* 18 **********************************	-		MONTH DAY	YEAR
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20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this m Printed/Typen Name Signature	anifest excep	t as noted	in item 19.		
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orm 8700-22 (Rav. 5/88) Previous editions are obsolete	-(V %,			7/47/	كك

In case of an energency or spill immediately call the National Responds Center 2000 42-2012 and PA E 17) 7

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Form approved. OMB No. 2050-0039

R-WM-51 REV. 1/91	OFFICIAL PENNSYLVANIA MA	NIFEST FORM			OMB No. 2050- Expires 9-30-91
UNIFORM HAZARDOUS WASTE MANIFEST # 1 3	1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1	Information in the	shaded areas
3. Generator's Name and Mailing Address		7 年 四月中央	A LINE CAP	but is required by	Sjete law.
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4. Generator's Phone 313)285-1	Trenton, Hichigan 48181	1			
5. Transporter 1 Company Name	6, US EPA ID	Number			
AUTUMN THOUSERES	INC 10409869	74780			
7. Transporter 2 Company Name	8. US EPA IO	Number	Daniel de		
9. Designated Facility Name and Site Addre	38 10. US EPA (D. Mumbor			
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AST PLANT, DELAWARE AVENU	-	٧_	G. Stale Fac		
ALMERTON, PA 18071	FAD002395			Piron	
11. US DOT Description (Including Proper S	hipping Name, Hazard Class, and ID Numb	er) 12. Conta	Type	13, 14, Total Unit Quantity Wt/Ve	V.
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TALE PICKEY + PGOOLS					
O. NUMBER - HSX5094		•			
6. GENERATOR'S CERTIFICATION	I hereby declare that the contents of this social	Company are fully			
 GENERATOR'S CERTIFICATION: classified, packed, marked, and labeled and are 	in all respects in proper condition for transport by	highway according to ap	plicable internation	adove by proper shippi nal and national governm	ng name and ar sent regulations.
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20. Facility Owner and and and	w 200 -000 /V	. 57	~/ //		
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in case of an emergency or split immediately call the National Response Center (800) 424-8802 and the PA DER (717) 787-4343

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EPA Form 8700-22 (Rev. 9/88) Previous editions are absolete

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

EPARTMENT OF ENVIRONMENTAL RESOUR Bureau of Waste Management P. O. Box 8550

Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved, OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS 1. Generator's US EPA WASTE MANIFEST 1. Generator's US EPA 1. T 4. 2. 3. 3.		Manifest cument No.	2. Page of	is not requ but is requ	in the shaded areas ired by Federal law ired by State Jaw.	
3. Generator's Name and Malling Address MCLGOTH STEEL - ATTN: D. WINDELER						
1650 W. JEFFERSON AVENUE TRENTON. HICHIG	IAM 48183					
4. Generator's Phone (313) 285-1200 5. Transporter 1 Company Name	6. US EPA ID Number		5	Andrews Const.		.)
7. Transporter 2 Company Name	9 8 6 9 7 4 8. US EPA ID Number	780				4
9. Designated Facility Name and Site Address	10. US EPA ID Number	<u>-</u>				7
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11. US DOT Description (Including Proper Shipping Name, Hazerd Class	, and ID Number)	12. Contai		. 13. Total Quantity	14. Unit Wt/Vol	No.
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J. Additional Descriptions for Materials Listed Above Lab Pack Physical State Lab Pack	Physical State	file 'n sak	K. Handl	ng Codes for Wa	stee Listed Above **	
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BHERGESCY RESPONSE GUIDS NO.31						
TRUCK # 4020 SCALE TICKER # P60012						
P.O. NUMBER - HSX5094						
16 GENERATOR'S CERTIFICATION.						
 GENERATOR'S CERTIFICATION: I hereby declare that the control classified, packed, marked, and labeled and are in all respects in proper conditions. 	on for transport by highway	e rully and acci	urately desc plicable inter	ribed above by pro national and nation	per shipping name and al government regulation:	are s.
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20. Facility Owner or Operator: Certification of receipt of hazardous ma	sterials covered by this m	anifest except	as noted	in Item 19.	MANY, PAR	
NEX OCEI	T Reg	Kal			MONTH DAY OF	[7]

In case of an emergency or spill immediately call the National Response Center (800) 424-8802 and the PA DER (717) 787-4343

TRANSPORTER FACT

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GENERATOR

Bureau of Waste Management P. O. Box 8550
Harrisburg, PA 17105-8550
AL PENNSYI VANIA MANIFERT

Form approved.
OMB No. 2050-0039

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Generator's Phone (313) 285-1200					
Transporter 1 Company Name 6. US EPA ID Number	er	A state of the		A Company of the	1000
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Transporter 2 Company Name 8. US EPA ID Number	91			CANTO CONTRACTOR	
Designated Facility Name and Site Address 10. US EPA ID Numi					2019
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	12. Conta	iners	13.	14.	100
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available to me and that I can afford. Printed/Typed Name Signature	····		* .	MONTH DA	
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ER-WM-51 REV. 1/91

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS 1. Generator's U WASTE MANIFEST # 1 D 0 1 7 4 2 1 3. Generator's Name and Mailing Address		Manifest Document No. 9118	2. Page 1 of	ls not requi	in the shade red by Federa red by State I	il law
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4. Generator's Phone \$15) 265-1200	HIGAN 48183	•				
5. Transporter 1 Company Name	6. US EPA ID Numb	er				1
7. Transporter 2 Company Name	8. US EPA ID Numb	4780				
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9. Designated Facility Name and Site Address	10. US EPA ID Num	ber				
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TALE TICKET & PG0014						
O. HUMBER - H8X5094						
16. GENERATOR'S CERTIFICATION						
 GENERATOR'S CERTIFICATION: I hereby declare that the classified, packed, marked, and labeled and are in all respects in proper 	e contents of this consignment condition for transport by highwa	are fully and acci y according to app	urately described plicable internation	d above by propi onal and national	er shipping nam government reg	e and a
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Bureau of Waste Management P. O. Box 8550 Harrisburg PA 17105-8550

Form approved,

UNIFORM HAZARDOUS		NIA MANIFEST FO					xpires 9-30-91
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9. Designated Facility Name and Site Address BORSEREAD RESOURCE DEVELO		US EPA ID Number		1. V. F.			
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15. Special Handling Instructions and Addition REPORTS GUIDE TRUCK 31202 SCALE TICKET 176,0010 16. GENERATOR'S CERTIFICATION: classified, packed, marked, and labeled and are lift in an a large quantity generator, I certify the practicable and that I have selected the practicand the environment; OR, if I am a small guide and the onvironment; OR, if I am a small guide and the onvironment; OR, if I am a small guide and the onvironment; OR, if I am a small guide and the onvironment; OR, if I am a small guide and the onvironment; OR, if I am a small guide and the onvironment; OR, if I am a small guide and the onvironment; OR, if I am a small guide and the onvironment; OR, if I am a small guide and the onvironment of the onvironment of the onvironment of the onvironment	onal information 31 I hereby declare that the contents e in all respects in proper condition for	of this consignment are transport by highway ac	fully and according to ap	b. we in the state of the state	ribed above by pronational and nation	oper shippin al governme	g name and a nt regulations.
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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Bureau of Waste Management
P. O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WABTE.

Form approved. OMB No. 2050-0039 Expires 9-30-91

3. Generator's Name and Mailing Address MCLOUTH STEEL - ATTM: D. WINDEL 1630 W. JEPPERSON AVENUE TRANS	7 4 2 3 3 0 4 ; ¢		aof i	Information in is not require but is require	d by Federal d by State ia	law w
4. Generator's Phone (313) 285-1200 5. Transporter 1 Company Name Autum Thousant S Tho	6. US EPA ID Number 6. US EPA ID Number 8. US EPA ID Number	780				
9. Designated Facility Name and Site Address HORSEHEAD RESOURCE DEVELOPMENT (BAST PLANT, DELAWARE AVERUE PALMERTON, PA 18071	10. US EPA ID Numbe	er .	(r) V 20) Horaelity al	Alicate Microsoft		Company of the con-
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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039 Expires 9-30-91

	UNIFORM HAZARDOUS 1. Generator's US EPA ID No. WASTE MANIFEST 1. Generator's US EPA ID No.		Annifest sument No. 9122	2. Page 1	is not require	n the shaded a ed by Federal is ed by State law.	IW
	3. Generator's Name and Mailing Address			AZ SI SI VILI	A TOTAL		12 467 14
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Ľ	20. Facility Owner or Operator: Certification of receipt of hazardous materials co	overed by this ma	anifest excent	as noted in I	em 19.		
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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17:105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

AND CHEMOTHERAPEUTIC WASTE.

Form approved.
OMB No. 2050-0038
Expires 9-30-91

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Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

Form approved. OMB No. 2050-0039

	rator's US EPA ID No. 7 4 2 3 3 0 4 C 1	Menifest sument No.	2. Page 1 Inform 1of Is not	ation in the shader required by Pedera	i areas
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4. Generator's Phone (313) 285-1200	POW. MICHIGAM 48183	# 8		(d. 18 180) Belgis (s. 19) Dan Skriver (s. 19)	MARTIN NO.
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16. GENERATOR'S CERTIFICATION: I hereby decl classified, packed, marked, and labeled and are in all respects	are that the contents of this consignment are	e fully and accura	ately described above I	by proper shipping na	me and are
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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Bureau of Waste Management
P. O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE. A AVAYBUDING INTELLIBITE

> Form approved. OMB No. 2050-0039

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16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my weste generation and select the best waste management method that is Printed/Typed Name

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20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name Signature

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Bureau of Waste Management P. O. Box 8550

AND CHEMOTHERAPEUTIC WASTE.

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES AND CHEMOTHERAPEUTIC WASTE. P. O. Box 8550 P. O. Box 8550 Marylaburg PA 17105-8550 OMB No.

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VANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039

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pecial Handling Instructions and Additional Information **EMERGERITY RESPONSE GUIDE NO.31 **TRUCK 3/0 **GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully, and accurately described above by proper shipping name and an classified, packed, marked, and labeled and are in all respects in proper condition for transport by highway according to splicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity does not not internate the volume and practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health available to me and that I can alroy. **Printed/Typed Name** Signature Signature Signature MONTH DAY YEA	pecial Handling Instructions and Additional Information WIREGERCY RESPONSE GUIDE 80.31 TRUCK 3/0 SCALE TICKET PCO 20 P.O. NUMBER - HSISO94 GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping came and a classified, pecked, marked, and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I cartify that I have a program in place to reduce the volume and oxicity of waste generated to the degree I have determined to be economical and that I have described the practicable method of international and proper conditions and that it have described the practicable method of international and proper practicable and that I have asset to human heal available to me and that I can and first of international and and the environment. OR, if I am a small quantity generator, I have made a good taith effort to minimize my waste period marked to human heal available to me and that I can and first of the present and future threat to human heal available to me and that I can add that I can a small quantity generator. I have made a good taith effort to minimize my waste period. In minimize my waste period on the scale the best visuate mentioned method that printed/Typed Name Signature MONTH DAY YEA Transporter & Ashnewledgeheart of Receipt of Malentais Printed/Typed Name Signature MONTH DAY YEA Discrepants Indication Space MONTH DAY YEA Discrepants Indication Space Ashnewledgeheart of Receipt of Malentais Figure of the printed/Typed Name Signature MONTH DAY YEA Signature MONTH DAY YEA Signature MONTH DAY YEA Signature MONTH DAY YEA Signature MONTH DAY YEA Signature MONTH DAY YEA Signature MONTH DAY YEA Signature MONTH DAY YEA Signature MONTH DAY YEA Signature MONTH DAY YEA		hysical State	#M# 16 36 5	K. Handlin	g Codes for Wa	stes Listed Above	Writing.
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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039

Bureau of Waste Management
P. O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

JNIFORM HAZARDOUS		AL PENNSYLVANIA M						xpires 9-30-	_
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Generator's Phone (313)	285-1200							ggrydyge)	vo.
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PA Form 8700-22 (Rev. 9/88) Previous editions are obsolete

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPELITIC WASTE

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AUTUMN INDUSTRIES I	6. US EPA ID Number	780		
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6. GENERATOR'S CERTIFICATION: 1 hereby classified, packed, marked, and labeted and are in all results.	declare that the contents of this consignment are	fully and accurate	ely described above by	proper shipping name and are
If I am a large quantity generator, I certify that I have a practicable and that I have selected the practicable meth and the environment; OR, if I am a small quantity gener available to me and that I can afford	program in place to reduce the volume and toxicit od of treatment, storage, or disposal currently avails	y of waste generat	ed to the degree I have	determined to be economically
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ER-WM-51 FEV. 1/91

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039 Expires 9-30-91

Ì	UNIFORM HAZARDOUS 1. Generator's US EPA II WASTE MANIFEST 1. D 0 1 7 4 2 2		Manifest Document No.	2. Page 1	Information in is not required but is required	by Federal laid	H
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	4. Generator's Phone (313) 285~1200 5. Transporter 1 Company Name	6. US EPA ID Numb	NOT			L	
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	9. Designated Facility Name and Site Address	10. US EPA ID Num	ber				
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	20. Facility Owner or Operator: Certification of receipt of hazardous materials.	erials covered by thi	s manifest excep	t as noted in I			
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ER-WM-51 REV. 1/91

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management P. O. Box 8550

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

Form approved. OMB, No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS 1. Generator's US EPA ID No. WASTE MANIFEST IN IN IN IN IN IN IN IN IN IN IN IN IN I	Menifest Document No.	2. Page 1 of	but is requir	in the shaded areas red by Federal law red by State law.
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4. Generator's Phone (\$1\$) 285-1216 5. Transporter 1 Company Name 6. US EPA ID N	umber	e e e e e e e e e e e e e e e e e e e		ay grand covin
7. Transporter 2 Company Name 8. US EPA ID N	74780 lumber			
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Fact Plant, Delemere Avenue Palmerton, PA 18071 P A D 0 0 2 3	95887	G. Slate Fr	e Phone (Sen is	Continued Comed Continued Comed Continued Comed
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	No.	ners Type	13. Total Quantity	14. Unit Waste No.
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16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignred classifled, packed, marked, and labeled and are in all respects in proper condition for transport by his	ment are fully and acci ighway according to app	rately describ- dicable internet	ed above by prope tional and national	er shipping name and are government regulations.
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	P. O. Box 8550	//			Form approx	
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SCALE TICKET \$	4.5 / 2/ 3020
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16. GENERATOR'S CERTIFICATION: I her	reby declare that the contents of this consignment are fully and accurately described above by proper shipping name and ar

classified, packed, marked, and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator. I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. Signature Printed/Typed Name DAY MONTH YEAR

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receipt of hazardous materials covered by this manifest except as noted in Item 19.

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039 Expires 9-30-91

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ER	-WM-51 REV. 1/91

P. O. Box 8550

Harrisburg, PA 17105-8550

OFFICIAL PENNSYLVANIA MANIFEST FORM

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ER-WM-51 REV. 1/91

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FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

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WASTE MANIFEST E I D 0 1 7 4 2	. 3 . 3 . 0 . 4 i	C 1 9 1 2 (of g	IS NOT F	equired by	Federal law
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ER-WM-51 REV. 1/91

DEPARTMENT OF ENVIRONMENTAL RESOURCES PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

AND CHEMOTHERAPEUTIC WASTE.

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved.

Bureau of Waste Management
P. O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

WM-51 REV. 1/91	OFFICIAL PENNSYLVANIA MAN	SSO SEEST FORM			OMB No. 2050-00
UNIFORM HAZARDOUS	1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1	Information in	Expires 9-30-91 the shaded areas
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Bureau of Waste Management
P. O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

Form approved. OMB No. 2050-0039 Expires 9-30-91

AND CHEMOTHERAPEUTIC WASTE.

UNIFORM HAZARDOUS	1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1	information	in the shaded a	reas
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AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Bureau of Waste Management, P. O. Box 8550
Harrisburg, PA 17105-8550 Form approved.

WASTE MANIFEST MTDO 17423304 Document No. 3. Generator's Name and Mailing Address MCLOTH STEEL ATTH: D. WINDOLER 4. Generator's Phone () 5. Transporter 1 Company Waste 227-1200 6. US EPA ID Number C. SLATING MANIFEST DEPARTMENT OF STREET DEVELOPMENT OF STREET D	R-WM-51 REV. 1/91	OFFICIAL PENNSYLVANIA MANIFE	ST FORM		•	Expires 9-30-91
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ER-WM-51 REV. 1/91

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES **Bureau of Waste Management**

AND CHEMOTHERAPEUTIC WASTE.

P. O. Box 8550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

Form approved. OMB No. 2050-0039 Expires 9-30-91

WASTE MANIFEST	1. Generator's US EPA ID No. エシのリラムと33の人	Manifest Document No.	2. Page 1	Information in the shade is not required by Federa , but is required by State i	i law 🤣
3. Generator's Name and Mailing Address MCLOUTH 至7EE! — ATTN	1; D. WINDEIER		A SAGE	数14次20mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm 100mm	1
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11. US DOT Description (Including Proper	Shipping Name, Hazard Class, and ID Numbe		ners	13. 14. 開發	Waste No.
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in case of an emergency or soul unmediately call the National Hesponse Center (800) 424-8802 and the PA DEH (117) 787-4343

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Bureau of Waste Management
P. O. Box 8550
Harrisburg, PA 17105-8550
OFFICIAL PENNSYLVANIA MANIFEST FORM

Form approved.
OMB No. 2050-0039
Expires 9-30-91

EA-WM-51 REV. 1/91	OFFICIAL PENNSYLVANIA MANI	FEST FORM			Expires 9-30-91
	1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1	is not require but is require	n the shaded areas d by Federal law d by State law,
3. Generator's Name and Mailing Address MCLOSTH STEEL - ATTA 1650 W. JEFFERSON AV	1: D. WINDELER	48183	HAU		The state of the
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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved.

4	UNIFORM HAZARDOUS 1. Generator's US EPA ID No. Manifest	•	Expires 9-30-91
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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management* P. O. Box 8550 Harrisburg, PA 17105/8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS 1. Generator's WASTE MANIFEST ID 0 1 7 4 2	US EPA ID No.	Manifest Document No.	2. Page 1 of	information in the shaded area is not required by Federal law but is required by State law.	18 .
3. Generator's Name and Mailing Address	; = 1 =				
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650 W. JEFFERSON AVENUE. TRANSCH. H	ichigan 48181	†	B Stale Ce		
4. Generator's Phone (\$13) 285-1260			CU CONTRACT		4 4.7
5. Transporter 1 Company Name	6. US EPA ID	Number	C State Tr		tod
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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management P. O. Box 8550 Harrisburg, PA 17105-8550 OFFICIAL PENNSYLVANIA MANIFEST FORM

FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039

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VM-51 REV. 1/91	OFFICIAL PENNSYLVANIA M				Expire	
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FOR SHIPMENT OF HAZARDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039 Expires 9-30-91

2000		PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RE Bureau of Waste Management
		P. O. Box 8550
do Alex	ν	Harrisburg, PA 17105-8550
R-WM-51 REV. 1/91	•	OFFICIAL PENNSYLVANIA MANIFEST FORM

UNIFORM HAZARDOUS WASTE MANIFEST 1. Generator's US EPA ID 0 1 7 4 2 3 3	No. 0 4 C 20	TISE	2. Page 1 1 of	information in is not required but is required	by Federal In.	
3. Generator's Name and Mailing Address			A PARK	A THE STATE OF THE		1541
1650 W. JEFFERSON AVENUE TRENTON, MICHIG	AN 48183		B. Bra Gesi			Again ar
4. Generator's Phone ()	. US EPA ID Number		C. State Tra			
AUTUMA THOUSTERS 10HD9	86974 US EPA ID Number	780				A SMS
9. Designated Facility Name and Site Address HORSEREAD RESOURCE DEVELOPMENT CO. RAST PLANT, DELAWARE AVENUE	0. US EPA ID Number	,		de de la la companya de la companya de la companya de la companya de la companya de la companya de la companya		\$ 20-211
PALHERTON, PA 18071 PADO	0 2 3 9 5 8 8	7		pyse in Phone in the second		Man M
11. US DOT Description (Including Proper Shipping Name, Hazard Class, at	· · · · · · · · · · · · · · · · · · ·	12. Contair No.	ners Type	13. Total Quantity	14. Unit Wi/Voi	il
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16. GENERATOR'S CERTIFICATION: I hereby declare that the content classified, packed, marked, and labeled and are in all respects in proper condition						
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Printed/Typed Name	Signalure			мо	NTH DAY	YEAR
19. Discrepancy Indication Space	•					
20. Facility Owner or Operator: Certification of receipt of hazardous maler	rials covered by this ma	nifest except	as noted in it	em 19.	ONTH DAY	YEAR
Form 8700-22 (Rev. 9/88) Previous editions are obsolete	1		<u> </u>		<u> </u>	

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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Bureau of Waste Management
P. O. Box 8550

Harrisburg, PA 17105-8550

OFFICIAL PENNSYLVANIA MANIFEST FORM AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039

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UNIFORM HAZARDOUS 1. Generator's US EPA ID WASTE MANIFEST X D 0 1 7 4 2 3 3	Doc	Manifest cument No.	2. Page	is not requ	uired by #	haded areas ederál law
3. Generator's Name and Mailing Address	 	<u>। स्वक्रां</u>		but is requ		IELE IEW.
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4. Generator's Phone (313) 285-1200						Market 1
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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES Bureau of Waste Management

P. O. Box 8550 Harrisburg, PA 17105-8550

FOR SHIPMENT OF HAZAHDOUS, INFECTIOUS AND CHEMOTHERAPEUTIC WASTE.

Form approved. OMB No. 2050-0039

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J	EMETGENCY RESPONSE GOIDE NO. 31 24 TRICK ## DIR-3 P.O. ## HSY SOFA 16. GENERATOR'S CERTIFICATION: I hereby declare that the contect classified, packed, marked, and labeled and are in all respects in proper conditions in a large quantity generator. I certify that I have a program in place to repracticable and that I have selected the practicable method of treatment, storage and the environment; OR, If I am a small quantity generator. I have made a go available to me and that I can afford. Printed/Typed Name 17. Transporter I Acknowledgement of Receipt of Materials Printed/Typed Name 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typad Name	ents of this consignment are on for transport by highway reduce the volume and toxic pe, or disposal currently availed faith effort to minimize the signature	e fully and acc	urately descriplicable intern	degree I have deterthe present and future the best waste man	er shipping name and a government regulations mined to be economicate threat to human heal an agement method that MONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMM	AR AR
J	EMETGENCY RESPONSE GOIDE NO. 31 THICK HE SCALE TICKET HE DIR-3 P.O. ## HSX 5004 16. GENERATOR'S CERTIFICATION: I hereby declare that the contect classified, packed, marked, and labeled and are in all respects in proper condition. If I am a large quantity generator. I certify that I have a program in place to repracticable and that I have selected the practicable method of treatment, storage and the environment; OR, II I am a small quantity generator. I have made a go available to me and that I can afford. Printed/Typed Name 17. Transporter I Acknowledgement of Receipt of Materials Printed/Typed Name 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name 18. Discrepancy Indication Space Which was a standard to the content of the	ents of this consignment are in for transport by highway is educe the volume and toxic pe. or disposal currently availed faith effort to minimize the signature Signature Signature Signature	e fully and according to applicate to me whitney waste general according to applicate to me whitney waste general according to applicate to the whitney waste general according to applicate to the property of the property o	urately descriplicable intern	degree I have deterthe present and futuation the best waste many	er shipping name and a government regulations mined to be economicate threat to human heal an agement method that MONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMM	AR
J	EMETGENCY RESPONSE GOIDE NO. 31 THICK HE SCALE TICKET HE DIR-3 P.O. ## HSX 5004 16. GENERATOR'S CERTIFICATION: I hereby declare that the contect classified, packed, marked, and labeled and are in all respects in proper condition. If I am a large quantity generator. I certify that I have a program in place to repracticable and that I have selected the practicable method of treatment, storage and the environment; OR, II I am a small quantity generator. I have made a go available to me and that I can afford. Printed/Typed Name 17. Transporter I Acknowledgement of Receipt of Materials Printed/Typed Name 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name 18. Discrepancy Indication Space Which was a standard to the content of the	ents of this consignment are in for transport by highway is educe the volume and toxic pe. or disposal currently availed faith effort to minimize the signature Signature Signature Signature	e fully and according to applicate to me whitney waste general according to applicate to me whitney waste general according to applicate to the whitney waste general according to applicate to the property of the property o	urately descriplicable intern	degree I have deterthe present and futtot the best waste many the control of the	er shipping name and a government regulations mined to be economically threat to human heal anagement method that MONTH DAY YEAMONTH DAY YEAMONTH DAY YEAMONTH DAY YEAMONTH DAY YEAMONTH DAY YEAMONTH DAY YEAMONTH DAY YEAM	AR
٠	EMETGENCY RESPONSE GOIDE NO. 31 THIS CALE TICKET HE DIR-3 P.O. ## HSY 5094 16. GENERATOR'S CERTIFICATION: I hereby declare that the contect classified, packed, marked, and labeled and are in all respects in proper condition. If I am a large quantity generator, I certify that I have a program in place to repracticable and that I have selected the practicable method of treatment, storage and the environment; OR, II I am a small quantity generator, I have made a go available to me and that I can afford. Printed/Typed Name 17. Transporter I Acknowledgement of Receipt of Materials Printed/Typed Name 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typad Name 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typad Name 19. Discrepancy Indication Space 10. Discrepancy Indication Space 11. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typad Name	ants of this consignment are in for transport by highway is educe the volume and toxic pe. or disposal currently availed faith effort to minimize the signature Signature Signature Signature Lerials covered by this means the signature of the sinterest of the signature of the signature of the signature of the	e fully and according to applicate to me whitney waste general according to applicate to me whitney waste general according to applicate to the whitney waste general according to applicate to the property of the property o	urately descriplicable intern	degree I have deterthe present and futtot the best waste many the control of the	er shipping name and a government regulations mined to be economicate threat to human heal an agement method that MONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMMONTH DAY YEMM	AR
	EMETGENCY RESPONSE GOIDE NO. 31 THIS CALE TICKET HE DIR-3 P.O. ## HSY 5094 16. GENERATOR'S CERTIFICATION: I hereby declare that the contect classified, packed, marked, and labeled and are in all respects in proper condition. If I am a large quantity generator, I certify that I have a program in place to repracticable and that I have selected the practicable method of treatment, storage and the environment; OR, II I am a small quantity generator, I have made a go available to me and that I can afford. Printed/Typed Name 17. Transporter I Acknowledgement of Receipt of Materials Printed/Typed Name 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typad Name 18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typad Name 19. Discrepancy Indication Space 10. Discrepancy Indication Space 11. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typad Name	ants of this consignment are in for transport by highway is educe the volume and toxic pe. or disposal currently availed faith effort to minimize the signature Signature Signature Signature Lerials covered by this means the signature of the sinterest of the signature of the signature of the signature of the	e fully and according to applicate to me whitney waste general according to applicate to me whitney waste general according to applicate to the whitney waste general according to applicate to the property of the property o	urately descriplicable intern	degree I have deterthe present and futtot the best waste many the control of the	er shipping name and a government regulations mined to be economically threat to human heal anagement method that MONTH DAY YEAMONTH DAY YEAMONTH DAY YEAMONTH DAY YEAMONTH DAY YEAMONTH DAY YEAMONTH DAY YEAMONTH DAY YEAM	AR



LABORATORY ANALYSIS REPORTS - TECHNA BACKGROUND ASSESSMENT



Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Drive, Suite 222 East Lansing, MI 48823 Phone (517) 332-0167 Fax (517) 332-6333

August 12, 1997

Attention: Mr. James Harless

Techna Corporation 44808 Helm Street Plymouth, MI 48170-6026

Analytical Laboratory Report

FECL #(s): AA49652-AA49660

Project: 000738-09A-001

Samples collected by: UNKNOWN Date/Time Submitted: 07/30/97 08:00

PO #: Verbal

FECL #: AA49652

Tag: TBG-A

Date/Time Collected: 07/28/97 08:22

Matrix: Soil

Container(s): 2-Glass

Preservation: Refrigeration/None

FECL#: AA49653

Tag: TBG-B (0-1)

Date/Time Collected: 07/28/97 08:35

Matrix: Soil

Container(s): 2-Glass

Preservation: Refrigeration/None

FECL #: AA49654

Tag: TBG-B (2-3)

Date/Time Collected: 07/28/97 08:40

Matrix: Soil

Container(s): 2-Glass

Preservation: Refrigeration/None



FECL #: AA49655

Tag: TBG-C

Date/Time Collected: 07/28/97 08:55

Matrix: Soil

Container(s): 2-Glass

Preservation: Refrigeration/None

FECL #: AA49656

Tag: TBG-D (1-2)

Date/Time Collected: 07/28/97 09:07

Matrix: Soil

Container(s): 2-Glass

Preservation: Refrigeration/None

FECL #: AA49657

Tag: TBG-D (3-4)

Date/Time Collected: 07/28/97 09:17

Matrix: Soil

Container(s): 2-Glass

Preservation: Refrigeration/None

FECL #: AA49658

Tag: TTest Pile A

Date/Time Collected: 07/28/97 07:06

Matrix: Soil

Container(s): 2-Glass

Preservation: Refrigeration/None

FECL #: AA49659

Tag: TTest Pile B

Date/Time Collected: 07/28/97 07:10

Matrix: Soil

Container(s): 2-Glass

Preservation: Refrigeration/None

FECL #: AA49660

Tag: TBG-H

Date/Time Collected: 07/28/97 07:18

Matrix: Soil

Container(s): 2-Glass

Preservation: Refrigeration/None

2 of 8

AA49652



FECL #: AA49652

Tag: TBG-A

Date/Time Collected: 07/28/97 08:22

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	94.4	%	1	160.3	I M	08/08/97
Metals Cadmium Chromium Lead	0.8 2 561 41.3	mg/kg mg/kg mg/kg	0.05 1.0 1.0	6020 6020 6020	PR PR PR	08/06/97 08/06/97 08/06/97

FECL #: AA49653

Tag: TBG-B (0-1)
Date/Time Collected: 07/28/97 08:35

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	91.7	%	1	160.3	ΙM	08/08/97
Metals Cadmium Chromium Lead	1.83 200 191	mg/kg mg/kg mg/kg	0.05 1.0 1.0	6020 6020 6020	PR PR PR	08/06/97 08/06/97 08/06/97

FECL #: AA49654

Tag: TBG-B (2-3)
Date/Time Collected: 07/28/97 08:40

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	93.3	%	1	160.3	I M	08/08/97



FECL #: AA49654 (Continued)

Tag: TBG-B (2-3)
Date/Time Collected: 07/28/97 08:40

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Metals Cadmium Chromium Lead	1.38	mg/kg	0.05	6020	PR	08/06/97
	197	mg/kg	1.0	6020	PR	08/06/97
	96.6	mg/kg	1.0	6020	PR	08/06/97

FECL #: AA49655

Tag: TBG-C

Date/Time Collected: 07/28/97 08:55

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	90.0	%	1	160.3	ΙM	08/08/97
Metals Cadmium Chromium Lead	5.00 429 406	mg/kg mg/kg mg/kg	0.05 1.0 1.0	6020 6020 6020	PR PR PR	08/06/97 08/06/97 08/06/97

FECL#: AA49656

Tag: TBG-D (1-2)
Date/Time Collected: 07/28/97 09:07

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	91.2	%	1	160,3	I M	08/08/97
Metals Cadmium Chromium Lead	1.42 488 273	mg/kg mg/kg mg/kg	0.05 1.0 1.0	6020 6020 6020	PR PR PR	08/06/97 08/06/97 08/06/97



FECL#: AA49657

Tag: TBG-D (3-4)
Date/Time Collected: 07/28/97 09:17

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	87.3	%	1	160.3	ΙM	08/08/97
Metals Cadmium Chromium Lead	1.58 39.1 73.1	mg/kg mg/kg mg/kg	0.05 1.0 1.0	6020 6020 6020	PR PR PR	08/06/97 08/06/97 08/06/97

FECL#: AA49658 Tag: TTest Pile A

Date/Time Collected: 07/28/97 07:06

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics						****
Total Solids	97.8	%	1	160.3	I M	08/08/97
Metals						
Arsenic	6.93	mg/kg	0.50	6020	PR	08/09/97
Barium	69.7	mg/kg	1.0	6020	PR	08/09/97
Cadmium	0.30	mg/kg	0.05	6020	PR	08/09/97
Chromium	31.9	mg/kg	1.0	6020	PR	08/09/97
Copper	63.0	mg/kg	1.0	6020	PR	08/09/97
Lead	24.5	mg/kg	1.0	6020	PR	08/09/97
Mercury	Not detected	mg/kg	0.10	7471	ËΒ	08/11/97
Selenium	Not detected	mg/kg	0.50	6020	PR	08/09/97
Silver	0.33	mg/kg	0.20	6020	PR	08/09/97
Zinc	90.7	mg/kg	1.0	6020	PR	08/09/97
Arsenic	0.011	mg/L	0.001	200.8	P R	08/09/97
Barium	1.45	mg/L	0.001	200.8	P R	08/09/97
Cadmium	Not detected	mg/L	0.0002	200.8	P R	08/09/97
Chromium	0.01	mg/L	0.0002	200.8	P R	08/09/97
Copper	0.06	mg/L	0.01	200.8	P R	08/09/97
• •			0,01	200.0	1 10	GGIGGIZI



FECL #: AA49658 (Continued)
Tag: TTest Pile A
Date/Time Collected: 07/28/97 07:06

Matrix: Soil

	Analysis	Results	Units	MRL	Method	Analyst	Date Run
	Metals (Continued) Lead Mercury Selenium Silver Zinc	Not detected Not detected Not detected Not detected 0.76	mg/L mg/L mg/L mg/L mg/L	0.003 0.0002 0.005 0.0005 0.01	200.8 245.1 200.8 200.8 200.8	PR EB PR PR PR	08/09/97 08/11/97 08/09/97 08/09/97 08/09/97
3	TCLP Extraction % Solids Sample used g Final Volume ml Final Extract pH	100 100 2,000 6.61			1311 1311 1311 1311	I M I M I M I M	08/06/97 08/06/97 08/06/97 08/06/97

FECL #: AA49659 Tag: TTest Pile B

Date/Time Collected: 07/28/97 07:10

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids Metals	96.6	%	1	160.3	IM	08/08/97
Arsenic Barium Cadmium Chromium Copper Lead Mercury Mercury Selenium Silver	5.38 37.7 0.58 189 43.5 62.5 Not detected Not detected Not detected 0.83	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/L mg/kg mg/kg	0.50 1.0 0.05 1.0 1.0 1.0 0.10 0.0002 0.50 0.20	6020 6020 6020 6020 6020 6020 7471 245.1 6020 6020	PR PR PR PR PR EB PR	08/09/97 08/09/97 08/09/97 08/09/97 08/09/97 08/11/97 08/11/97 08/09/97



FECL #: AA49659 (Continued)
Tag: TTest Pile B

Date/Time Collected: 07/28/97 07:10

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Metals (Continued) Zinc	877	mg/kg	1.0	6020	PR	08/09/97
Arsenic Barium Cadmium Chromium Copper Lead Selenium Silver Zinc	0.008 1.24 Not detected 0.02 Not detected Not detected Not detected Not detected Not detected 4.82	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.001 0.01 0.0002 0.01 0.01 0.003 0.005 0.0005	200.8 200.8 200.8 200.8 200.8 200.8 200.8 200.8 200.8	PR PR PR PR PR PR PR	08/09/97 08/09/97 08/09/97 08/09/97 08/09/97 08/09/97 08/09/97 08/09/97
TCLP Extraction % Solids Sample used g Final Volume ml Final Extract pH	100 100 2,000 6.30			1311 1311 1311 1311	I M I M I M I M	08/06/97 08/06/97 08/06/97 08/06/97

FECL #: AA49660

Tag: TBG-H Date/Time Collected: 07/28/97 07:18

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	93.1	%	I	160.3	ΙM	08/08/97
<i>Metals</i> Cadmium Chromium Lead	Not detected 906 2.2	mg/kg mg/kg mg/kg	0.05 1.0 1.0	6020 6020 6020	PR PR PR	08/06/97 08/06/97 08/06/97



Note: Methods may be modified for improved performance.

Results reported on a dry weight basis, where applicable.

Results relate only to items tested.

Report shall not be reproduced except in full, without the written approval of FECL.

Violetta F. Murshak

Violetta F. Murshall

Laboratory Director

TECnix# 4480	TECTINA CORFORATION 44808 Helm Street Plymouth, MI 48170-6026	N. 26		,	The state of the s	Te (31)	Telephone Numbers: (313) 454-1133 (FAX)	
CHAIN	CHAIN OF CUSTODY						Parameters	
Send report to: THING CORP 001	P Lab: FELL	_	Due Date:		5781	576.	ezzuci d	
Sample ID Date Time	Grab(G)/ Composite(C)	# Containers	Matrix*	Preservative**	I IW	1 J W 1 W 1 d S	1 ZW 77L	
VBG-A 7/28/97 8:22	Ŀ	7	S	9	,			49/55
(1-0)		7			メ			74.63
2-3)	0				メ			49764
	10	7			K			70000
4016 (2-170-58)		•			ソ			1/9651
186-D (3-4) 9:17	ı				×			1967
V TEST PILE-A 17:06	11 July 11 11 11 11 11 11 11 11 11 11 11 11 11				H H	# CPA	7	A B
01:6 4 8-577d1531 V	*	+	*	A	ス	Top and	2).	20/00
THE TO BE A TOWN			NA.	#		$\left \cdot \right $		T
81.8 4-14 N 3.18/14 3.18	, S	٦	~	7	X			9960
102	Date: 3/18/93	Time: 9 ', 30		3				
Relinquished by	Walffield	Time: 1.30	Received by	rether	Sur	1	Pare 128/17	Time: 18,00
Relinquished by	Date 7/24/97	Time: 1650	Received by:	Is and	Munh		Date: 7/29/97	Time: 1650
Relinquished by:	Date:	Time:	Received by:				Date:	· ~~
Relinquished by:	Date:	Тіте:	Received by:		V		Date:	Time: .₹
Relinquished by:	Date:	Time:	Received by L	Lab:		-	Date: 7-30 97	Time:
	Date:	Time: ".	Received by:				Date:	Time:
Remarks: ALT 451, PART 201 LZD	97774 SPLP	9/90; and P	AX KES	5270	<u>.</u>		*	
. Used: 2 • C.	•						:	
		1						
*Matrix: S=Solid L=Liquid	₩	W = Water	GW=Gro	GW=Groundwater	SL == Sludge	A B	WW - Wastewater	0=Other

(5) Zinc Acetate SL=Sludge

GW = Groundwater (4) 1:1 HCI

(3) HNO₃ to pH <2

L=Liquid (2) 10N NaOH to pH ≥ 12

(1) H₂SO₄ to pH < 2

**Preservatives: *Matrix:

WW = Wastewater (6) See Remarks

0=Other

		The state of the s	LCnNA 44808 Plymouth,	TECRINA CORPORALION 44808 Helm Street Plymouth, MI 48170-6026	, , ,					Telepnone Numbers: (313) 454-1100 (313) 454-1233 (FAX)	Numbers: 4-1100 233 (FAX)	
			CHAIN C	CHAIN OF CUSTODY						Param	eters	
	Send report to: MARLEST (Send report to: MARLEST)	Project: 00 7-38-09A 001	460-	Lab: FELL		Due Date:	300	STATE O 43° Sunzi		12 W C I		
	Sample ID	Date	Time	Grab(G)/ Composite(C)	# Containers	Matrix*	Preservative**	/ IW	JUS Sbrk	zw.		
لبيبا	FBG-A	428/47	8:22	ታ	2	\$	9	メ				
<u></u> _	(1-0)		8:35		7		-	メ				
<u></u>	1BG-B (2-3)		oh:8		1			メ				
	7-08x		55.8		7			ょ				
	484-D(1-2)		七016				-	ょ				
	B 6-D (3-4)		七脑					ょ	'n			
7	TEST PILE-A		90:6					አ	(集)	7 8005		
7	17EST PZUE-B	*	01:6	-	→	*	اح	X	S carga	Son S	100	اظ: ر
8	WELP BANK	-	of in	#### -	2 2/4	, 84	146	COTTON Y	31	7	/	
	1 7	#128/4D	3.18	5	7	V	7	メ				
\$	Collected by:	JA .		Date: 3/16/19	Time: 9:30							
<u></u>	Relinquished by:	The same of the sa		Date 1814	ZTime: $\%$; ∞	Received by	Techn	Show	h	Date	128/12	Time: 18,00
	Relinquished by	Sim	3	Date:7/24/97	Time: 1650	Received by:	Isa./t	Muny		Date:	7/21/97	Time: 1650
	Relinquished by:			Date:	Time:	Received by				Date:		Time:
	Relinquished by:			Date:	Time:	Received by				Date:		Time:
<u></u>	Relinquished by:			Date:	Time:	Received by Lab:	Lab:			Date:		Time:
	Relinquished by Lab:			Date:	me:	Received by				Date;		Time:
	Remarks: ALT 451, PARTZOI LEMETIC; 99, NOTE: PLEASE RUN SPLP S	PARTZOI PLEASE	RUN	5/46:513 5/46:513	19c; and 1	SAX KE	52705					
	(6) Indicate Preservative Used: 2°C	2.0										

COCIe

O ≖Other

WW = Wastewater (6) See Remarks

SL = Sludge (5) Zinc Acetate

GW=Groundwater (4) 1:1 HCl

(3) HNO, to pH <2

W=Water

L = Liquid(2) 10N NaOH to pH ≥ 12

*Matrix: S=Solid

**Preservatives: (1) H₃SO₄ to pH<2



Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Drive, Suite 222 East Lansing, MI 48823 Phone (517) 332-0167 Fax (517) 332-6333

August 06, 1997

Attention: Mr. James Harless

Techna Corporation 44808 Helm Street Plymouth, MI 48170-6026

Analytical Laboratory Report

FECL #(s): AA49566-AA49575

Project: 00738-09A-003

Samples collected by: UNKNOWN Date/Time Submitted: 07/29/97 08:00

PO#: Verbal

FECL #: AA49566

Tag: TTrip Blank

Date/Time Collected: 07/24/97 17:15

Matrix: Liquid

Container(s): 2-40 mL VOA Preservation: Refrigeration/HCl

FECL #: AA49567

Tag: TB11-A

Date/Time Collected: 07/25/97 17:45

Matrix: Soil

Container(s): 2-4 oz Glass

Preservation: Refrigeration/None

FECL #: AA49568

Tag: TB11-B

Date/Time Collected: 07/25/97 07:50

Matrix: Soil

Container(s): 2-4 oz Glass

Preservation: Refrigeration/None



FECL #: AA49569

Tag: TB11-C

Date/Time Collected: 07/25/97 08:00

Matrix: Soil

Container(s): 2-4 oz Glass

Preservation: Refrigeration/None

FECL #: AA49570

Tag: TB11-D

Date/Time Collected: 07/25/97 08:10

Matrix: Soil

Container(s): 2-4 oz Glass

Preservation: Refrigeration/None

FECL #: AA49571

Tag: TDup

Date/Time Collected: 07/25/97

Matrix: Soil

Container(s): 2-4 oz Glass

Preservation: Refrigeration/None

FECL #: AA49572

Tag: TBG-G

Date/Time Collected: 07/25/97 15:18

Matrix: Soil

Container(s): 2-4 oz Glass

Preservation: Refrigeration/None

FECL #: AA49573

Tag: TBG-F

Date/Time Collected: 07/25/97 15:30

Matrix: Soil

Container(s): 2-4 oz Glass

Preservation: Refrigeration/None

FECL #: AA49574

Tag: TBG-E (1-2)

Date/Time Collected: 07/25/97 16:15

Matrix: Soil

Container(s): 2-4 oz Glass

Preservation: Refrigeration/None

1 ECHIN 448 Plymou	1ECHNA CORPORATION 44808 Helm Street Plymouth, MI 48170-6026	926	٠	÷	·	T (3)	Telephone Numbers: (313) 454-1233 (FAX)	
CHAIN	N OF CUSTODY	Ϋ́					()	
Send report to:							Parameters	
JAMES HARLESSOF38-09/	- Lab: FECL	۲.	Due Date: Aug 4	Bar	r	waz wa		
Sample ID Date Time	Grab(G)/ Composite(C)	# Containers	Matrix* Prese	Preservative**	44S	WOVH LWOU TEAD		
TRIP BIANKURAMAY 19:15	5	7	14 4 4	206	ŀ	7		
	- 2			,	7			
* TB11- B 1 1 9:50	0		-) _	+			
*TB11-C V 8:00	0				+-			
* 7B11-D V 3:10					┪—			
\	4	4	\$,	+			
189-9	22		-		╫	7		
>						रे 7		
TBG-E(1-2)V 16:15	5	A				١,		
7BG-E(3-4) 4 16:25	4		1			۲ ۲		· ·
Collected by:	Date: 3/2 c/6	PTime. 8.10	•			マ		
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Boltzmitter	Date: TAI	/Pme:/4:00	Received by:	pokun	Turn	Ĭ	Date: 3/ 2∫/7	Time: 19:00
Actinguished by:	7/28	4-7 ime: 5 : 380	Received by:	Sach	Miresh		Date: 7/00/0	.∦ દ
Ketinquished by:	Date:	Time:	Received by:				Date:	Time
Reinquished by:	Date:	Time:	Received by:				Doge	
Relinquished by:	Date:	Time:	Received by Lab.				Date;	I me:
Relinquished by Lab:	Date	1					Date:	Time:
Remarks: ALT 451 LIMITE PH		J. C. Y.	Received by:	4	7.47		Date:	Time:
	NO.	190° F	•		1		,	9
(6) Indicate Preservative Used: $4^{\circ}C + \mu C_1$	SU TREP B	BLAWE	, ,		*	10 . 5/07 26	AND 811-15 11. 15. 15. 15. 15. 15. 15. 15. 15. 1	La Constant
**Preservatives: (1) H.SO to oH < 2 00 100 100 100 100 100 100 100 100 10		W=Water			SL = Sludge		WW = Wastewater	
		(3) HNO, to pH <2			(5) Zinc Acetate	: 9)	(6) See Remarks	O = Other

SL=Sludge (5) Zinc Acetate

WW = Wastewater (6) See Remarks



FECL #: AA49575

Tag: TBG-E (3-4)
Date/Time Collected: 07/25/97 16:25

Matrix: Soil

Container(s): 1-4 oz Glass Preservation: Refrigeration/None

3 of 19



FECL#: AA49566

Tag: TTrip Blank
Date/Time Collected: 07/24/97 17:15

Matrix: Liquid

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Organics						
Volatile Organics			0.001	0060	T. (77) A	05/01/05
Benzene	Not detected	mg/L	0.001	8260	VFM	07/31/97
Bromodichloromethane	Not detected	mg/L	0.001	8260	VFM	07/31/97
Bromoform	Not detected	mg/L	0.001	8260	VFM	07/31/97
Bromomethane	Not detected	mg/L	0.001	8260	VFM	07/31/97
Carbon tetrachloride	Not detected	mg/L	0.001	8260	VFM	07/31/97
Chlorobenzene	Not detected	mg/L	0.001	8260	VFM	07/31/97
Chloroethane	Not detected	mg/L	0,001	8260	VFM	07/31/97
2-Chloroethylvinyl ether	Not detected	mg/L	0.001	8260	VFM	07/31/97
Chloroform	Not detected	mg/L	0.001	8260	VFM	07/31/97
Chloromethane	Not detected	mg/L	0.001	8260	VFM	07/31/97
Dibromochloromethane	Not detected	mg/L	0.001	8260	VFM	07/31/97
1,2-Dichlorobenzene	Not detected	mg/L	0.001	8260	VFM	07/31/97
1,3-Dichlorobenzene	Not detected	mg/L	0.001	8260	VFM	07/31/97
1,4-Dichlorobenzene	Not detected	mg/L	0.001	8260	VFM	07/31/97
1,1-Dichloroethane	Not detected	mg/L	0.001	8260	VFM	07/31/97
1,2-Dichloroethane	Not detected	mg/L	0.001	8260	VFM	07/31/97-
1,1-Dichloroethene	Not detected	mg/L	0.001	8260	VFM	07/31/97
cis-1,2-Dichloroethene	Not detected	mg/L	0.001	8260	VFM	07/31/97
trans-1,2-Dichloroethene	Not detected	mg/L	0.001	8260	VFM	07/31/97
1,2-Dichloropropane	Not detected	mg/L	0.001	8260	VFM	07/31/97
cis-1,3-Dichloropropene	Not detected	mg/L	0.001	8260	VFM	07/31/97
trans-1,3-Dichloropropene	Not detected	mg/L	0.001	8260	VFM	07/31/97
Ethylbenzene	Not detected	mg/L	0.001	8260	VFM	07/31/97
Methylene Chloride	Not detected	mg/L	0.001	8260	VFM	07/31/97
Styrene	Not detected	mg/L	0.001	8260	VFM	07/31/97
1,1,2,2-Tetrachloroethane	Not detected	mg/L	0.001	8260	VFM	07/31/97
Tetrachloroethene	Not detected	mg/L	0.001	8260	VFM	07/31/97
Toluene	Not detected	mg/L	0.001	8260	VFM	07/31/97
1,1,1-Trichloroethane	Not detected	mg/L	0.001	8260	VFM	07/31/97
1,1,2-Trichloroethane	Not detected	mg/L	0.001	8260	VFM	07/31/97
Trichloroethene	Not detected	mg/L	0.001	8260	VFM	07/31/97
Trichlorofluoromethane	Not detected	mg/L	0.001	8260	VFM	07/31/97
Vinyl Chloride	Not detected	mg/L	0.001	8260	VFM	07/31/97
p,m-Xylene	Not detected	mg/L	0,001	8260	VFM	07/31/97
o-Xylene	Not detected	mg/L	0.001	8260	VFM	07/31/97



FECL #: AA49566 (Continued)
Tag: TTrip Blank
Date/Time Collected: 07/24/97 17:15

Matrix: Liquid

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Organics (Continued)						
Volatile Organics (Continued)						
Acetone	Not detected	mg/L	0.05	8260	VFM	07/31/97
2-Butanone	Not detected	mg/L	0.05	8260	VFM	07/31/97
Carbon disulfide	Not detected	mg/L	0.05	8260	VFM	07/31/97
2-Hexanone	Not detected	mg/L	0.05	8260	VFM	07/31/97
4-Methyl-2-pentanone	Not detected	mg/L	0.05	8260	VFM	07/31/97
•		_				

FECL#: AA49567

Tag: TB11-A
Date/Time Collected: 07/25/97 17:45

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics						
Total Solids	89.1	%	1	160.3	JН	08/01/97
Organics						
PNA Extraction	Completed				JKB	07/31/97
GC/MS for Volatile Organics						
Benzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromochloromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromodichloromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromoform	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromomethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
n-Butylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
sec-Butylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
tert-Butylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Carbon tetrachloride	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Chlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Chloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Chloroform	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Chloromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97



FECL #: AA49567 (Continued)

Tag: TB11-A

Date/Time Collected: 07/25/97 17:45

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Organics (Continued)				•		
GC/MS for Volatile Organics (Continued)					
2-Chlorotoluene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
4-Chlorotoluene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Dibromochloromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2-Dibromo-3-chloropropane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2-Dibromoethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Dibromomethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2-Dichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,3-Dichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,4-Dichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Dichlorodifluoromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1-Dichloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2-Dichloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1-Dichloroethene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
cis-1,2-Dichloroethene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
trans-1,2-Dichloroethene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2-Dichloropropane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,3-Dichloropropane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
2,2-Dichloropropane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1-Dichloropropene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Ethylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Hexachlorobutadiene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Isopropylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
p-Isopropyltoluene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Methylene chloride	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Naphthalene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
n-Propylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Styrene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1, 1, 1, 2-Tetrachloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1,2,2-Tetrachloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Tetrachloroethene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Toluene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,3-Trichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,4-Trichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1,1-Trichloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1,2-Trichloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97



FECL #: AA49567 (Continued)

Tag: TB11-A
Date/Time Collected: 07/25/97 17:45
Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Organics (Continued)						
GC/MS for Volatile Organ						
Trichloroethene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Trichlorofluoromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,3-Trichloropropane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,4-Trimethylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,3,5-Trimethylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Vinyl chloride	Not detected	mg/kg	0.01	8260	VFM	07/31/97
o-Xylene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
p,m-Xylene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
cis-1,3-Dichloropropene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Polynuclear Aromatics						
Acenaphthene	Not detected	mg/kg	0.33	8270	Љ	08/01/97
Acenaphthylene	Not detected	mg/kg	0.33	8270	ЈВ	08/01/97
Anthracene	Not detected	mg/kg	0.33	8270	Љ	08/01/97
Benzo(a)anthracene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(a)pyrene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(b)fluoranthene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(k)fluoranthene	Not detected	mg/kg	0.33	8270	ЈВ	08/01/97
Benzo(ghi)perylene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Chrysene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Dibenzo(ah)anthracene	Not detected	mg/kg	0,33	8270	JВ	08/01/97
Fluoranthene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Fluorene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Indeno(1,2,3-cd)pyrene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Naphthalene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Phenanthrene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Pyrene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
2-Methylnaphthalene	Not detected	mg/kg	0.33	8270	JВ	08/01/97



FECL#: AA49568 Tag: TB11-B

Date/Time Collected: 07/25/97 07:50

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics				*		
Total Solids	81.9	%	1	160.3	JН	08/01/97
Organics						
PNA Extraction	Completed				ЈКВ	07/31/97
	*					
GC/MS for Volatile Organics	3. T 4 1 4 4 1	/1	* 0.1	00.00	Table 6	00/00/07
Benzene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Bromobenzene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Bromochloromethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Bromodichloromethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Bromoform	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Bromomethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
n-Butylbenzene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
sec-Butylbenzene	0.6	mg/kg	* 0.1	8260	VFM	08/02/97
tert-Butylbenzene	0.2	mg/kg	* 0.1	8260	VFM	08/02/97
Carbon tetrachloride	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Chlorobenzene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Chloroethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Chloroform	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Chloromethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
2-Chlorotoluene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
4-Chlorotoluene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Dibromochloromethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,2-Dibromo-3-chloropropane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,2-Dibromoethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Dibromomethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,2-Dichlorobenzene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,3-Dichlorobenzene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,4-Dichlorobenzene	Not detected	mg/kg	* 0.1	8 2 60	VFM	08/02/97
Dichlorodifluoromethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,1-Dichloroethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,2-Dichloroethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,1-Dichloroethene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
cis-1,2-Dichloroethene	Not detected	mg/kg	* 0.1	8260 8260	VFM	08/02/97
trans-1,2-Dichloroethene	Not detected	mg/kg	* 0.1	8260 8260	VFM	08/02/97
1,2-Dichloropropane	Not detected	mg/kg	* 0.1	8260 8260	VFM	08/02/97
* Higher detection limits due to r					A L IAI	UU/UZ/7/
Bilet detection milits ade to t		and, or men t	Dou concontratio	/110,		



FECL #: AA49568 (Continued)
Tag: TB11-B
Date/Time Collected: 07/25/97 07:50

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Organics (Continued)						
GC/MS for Volatile Organic	s (Continued)					
1,3-Dichloropropane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
2,2-Dichloropropane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,1-Dichloropropene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Ethylbenzene	0.3	mg/kg	* 0.1	8260	VFM	08/02/97
Hexachlorobutadiene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Isopropylbenzene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
p-Isopropyltoluene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Methylene chloride	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Naphthalene	0.1	mg/kg	* 0.1	8260	VFM	08/02/97
n-Propylbenzene	1.3	mg/kg	* 0,1	8260	VFM	08/02/97
Styrene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,1,1,2-Tetrachloroethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,1,2,2-Tetrachloroethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Tetrachloroethene	0.2	mg/kg	* 0.1	8260	VFM	08/02/97
Toluene	0.2	mg/kg	* 0.1	8260	VFM	08/02/97
1,2,3-Trichlorobenzene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,2,4-Trichlorobenzene	Not detected	mg/kg	* 0.1	8 2 60	VFM	08/02/97
1,1,1-Trichloroethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,1,2-Trichloroethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Trichloroethene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Trichlorofluoromethane	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
1,2,3-Trichloropropane	Not detected	mg/kg	* 0.1	8 2 60	VFM	08/02/97
1,2,4-Trimethylbenzene	1.7	mg/kg	* 0.1	8260	VFM	08/02/97
1,3,5-Trimethylbenzene	1.3	mg/kg	* 0.1	8260	VFM	08/02/97
Vinyl chloride	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
o-Xylene	0.4	mg/kg	* 0.1	8260	VFM	08/02/97
p,m-Xylene	1.0	mg/kg	* 0.1	8260	VFM	08/02/97
cis-1,3-Dichloropropene	Not detected	mg/kg	* 0.1	8260	VFM	08/02/97
Polynuclear Aromatics		- -				
Acenaphthene	Matdatastad		0.00	0.550		
Acenaphthylene	Not detected	mg/kg	0.33	8270	Љ	08/01/97
Anthracene	Not detected	mg/kg	0.33	8270	$\overline{\mathrm{JB}}$	08/01/97
	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(a)anthracene	0.59	mg/kg	0.33	8270	JB	08/01/97
Benzo(a)pyrene	0.47	mg/kg	0,33	8270	JВ	08/01/97
* Higher detection limits due to	matrix interference	and/or high tar	get concentration	ons.		



FECL #: AA49568 (Continued)

Tag: TB11-B Date/Time Collected: 07/25/97 07:50

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Organics (Continued)						
Polynuclear Aromatics (Con	ntinued)					
Benzo(b)fluoranthene	0.42	mg/kg	0.33	8270	Љ	08/01/97
Benzo(k)fluoranthene	0.42	mg/kg	0.33	8270	JВ	08/01/97
Benzo(ghi)perylene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Chrysene	0.92	mg/kg	0.33	8270	JВ	08/01/97
Dibenzo(ah)anthracene	Not detected	mg/kg	0.33	8270	ЛВ	08/01/97
Fluoranthene	0.83	mg/kg	0.33	8270	JВ	08/01/97
Fluorene	0.55	mg/kg	0.33	8270	JВ	08/01/97
Indeno(1,2,3-cd)pyrene	Not detected	mg/kg	0.33	8270	ЈВ	08/01/97
Naphthalene	0.99	mg/kg	0.33	8270	JВ	08/01/97
Phenanthrene	1.67	mg/kg	0.33	8270	JВ	08/01/97
Pyrene	1.56	mg/kg	0.33	8270	JВ	08/01/97
2-Methylnaphthalene	2.92	mg/kg	0.33	8270	JВ	08/01/97

FECL#: AA49569 Tag: TB11-C

Date/Time Collected: 07/25/97 08:00

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	68.3	% '0	1	160,3	JН	08/01/97
Organics PNA Extraction	Completed				JKB	07/31/97
GC/MS for Volatile Organics Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane n-Butylbenzene	Not detected Not detected Not detected Not detected Not detected Not detected Not detected	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.01 0.01 0.01 0.01 0.01 0.01	8260 8260 8260 8260 8260 8260 8260	VFM VFM VFM VFM VFM VFM VFM	08/02/97 08/02/97 08/02/97 08/02/97 08/02/97 08/02/97 08/02/97



FECL #: AA49569 (Continued)

Tag: TB11-C Date/Time Collected: 07/25/97 08:00

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run		
Organics (Continued)								
GC/MS for Volatile Organics (Continued)								
sec-Butylbenzene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
tert-Butylbenzene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Carbon tetrachloride	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Chlorobenzene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Chloroethane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Chloroform	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Chloromethane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
2-Chlorotoluene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
4-Chlorotoluene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Dibromochloromethane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,2-Dibromo-3-chloropropane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,2-Dibromoethane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Dibromomethane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,2-Dichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,3-Dichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,4-Dichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Dichlorodifluoromethane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,1-Dichloroethane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,2-Dichloroethane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,1-Dichloroethene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
cis-1,2-Dichloroethene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
trans-1,2-Dichloroethene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,2-Dichloropropane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,3-Dichloropropane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
2,2-Dichloropropane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,1-Dichloropropene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Ethylbenzene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Hexachlorobutadiene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Isopropylbenzene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
p-Isopropyltoluene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Methylene chloride	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
Naphthalene	0,03	mg/kg	0.01	8260	VFM	08/02/97		
n-Propylbenzene	0.02	mg/kg	0.01	8260	VFM	08/02/97		
Styrene	Not detected	mg/kg	0.01	8260	VFM	08/02/97		
1,1,1,2-Tetrachloroethane	Not detected	mg/kg	0.01	8260	VFM	08/02/97		

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FECL #: AA49569 (Continued)

Tag: TB11-C

Date/Time Collected: 07/25/97 08:00

Tetrachloroethene Not detected mg/kg 0.01 8260 Toluene 0.04 mg/kg 0.01 8260 1,2,3-Trichlorobenzene Not detected mg/kg 0.01 8260 1,2,4-Trichlorobenzene Not detected mg/kg 0.01 8260 1,1,1-Trichloroethane Not detected mg/kg 0.01 8260 1,1,2-Trichloroethane Not detected mg/kg 0.01 8260 Trichloroethene Not detected mg/kg 0.01 8260 Trichlorofluoromethane Not detected mg/kg 0.01 8260 1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg <	nalyst	Date Run
GC/MS for Volatile Organics (Continued) 1,1,2,2-Tetrachloroethane Not detected mg/kg 0.01 8260 Tetrachloroethene Not detected mg/kg 0.01 8260 Toluene 0.04 mg/kg 0.01 8260 1,2,3-Trichlorobenzene Not detected mg/kg 0.01 8260 1,2,4-Trichlorobenzene Not detected mg/kg 0.01 8260 1,1,1-Trichloroethane Not detected mg/kg 0.01 8260 1,1,2-Trichloroethane Not detected mg/kg 0.01 8260 Trichloroethane Not detected mg/kg 0.01 8260 Trichlorofluoromethane Not detected mg/kg 0.01 8260 1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 <t< td=""><td></td><td></td></t<>		
Tetrachloroethene Not detected mg/kg 0.01 8260 Toluene 0.04 mg/kg 0.01 8260 1,2,3-Trichlorobenzene Not detected mg/kg 0.01 8260 1,2,4-Trichlorobenzene Not detected mg/kg 0.01 8260 1,1,1-Trichloroethane Not detected mg/kg 0.01 8260 1,1,2-Trichloroethane Not detected mg/kg 0.01 8260 Trichloroethene Not detected mg/kg 0.01 8260 Trichlorofluoromethane Not detected mg/kg 0.01 8260 1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg <		
Tetrachloroethene Not detected mg/kg 0.01 8260 Toluene 0.04 mg/kg 0.01 8260 1,2,3-Trichlorobenzene Not detected mg/kg 0.01 8260 1,2,4-Trichlorobenzene Not detected mg/kg 0.01 8260 1,1,1-Trichloroethane Not detected mg/kg 0.01 8260 1,1,2-Trichloroethane Not detected mg/kg 0.01 8260 Trichloroethene Not detected mg/kg 0.01 8260 Trichlorofluoromethane Not detected mg/kg 0.01 8260 1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg <	VFM	08/02/97
1,2,3-Trichlorobenzene Not detected mg/kg 0.01 8260 1,2,4-Trichlorobenzene Not detected mg/kg 0.01 8260 1,1,1-Trichloroethane Not detected mg/kg 0.01 8260 1,1,2-Trichloroethane Not detected mg/kg 0.01 8260 Trichloroethene Not detected mg/kg 0.01 8260 Trichlorofluoromethane Not detected mg/kg 0.01 8260 1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
1,2,3-Trichlorobenzene Not detected mg/kg 0.01 8260 1,2,4-Trichlorobenzene Not detected mg/kg 0.01 8260 1,1,1-Trichloroethane Not detected mg/kg 0.01 8260 1,1,2-Trichloroethane Not detected mg/kg 0.01 8260 Trichloroethene Not detected mg/kg 0.01 8260 Trichlorofluoromethane Not detected mg/kg 0.01 8260 1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
1,1,1-Trichloroethane Not detected mg/kg 0.01 8260 1,1,2-Trichloroethane Not detected mg/kg 0.01 8260 Trichloroethene Not detected mg/kg 0.01 8260 Trichlorofluoromethane Not detected mg/kg 0.01 8260 1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
1,1,2-Trichloroethane Not detected mg/kg 0.01 8260 Trichloroethene Not detected mg/kg 0.01 8260 Trichlorofluoromethane Not detected mg/kg 0.01 8260 1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
Trichloroethene Not detected mg/kg 0.01 8260 Trichlorofluoromethane Not detected mg/kg 0.01 8260 1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
Trichlorofluoromethane Not detected mg/kg 0.01 8260 1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
1,2,3-Trichloropropane Not detected mg/kg 0.01 8260 1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
1,2,4-Trimethylbenzene 0.06 mg/kg 0.01 8260 1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
1,3,5-Trimethylbenzene Not detected mg/kg 0.01 8260 Vinyl chloride Not detected mg/kg 0.01 8260 o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
o-Xylene 0.01 mg/kg 0.01 8260 p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
p,m-Xylene 0.03 mg/kg 0.01 8260	VFM	08/02/97
cis-1.3-Dichloropropene Not detected malka 0.01 8260	VFM	08/02/97
cis-1,3-Dichiotopropene 140t detected hig/kg 0.01 8200	VFM	08/02/97
Polynuclear Aromatics		
Acenaphthene 0.71 mg/kg 0.33 8270	JВ	08/01/97
Acenaphthylene Not detected mg/kg 0.33 8270	Љ	08/01/97
Anthracene 0.34 mg/kg 0.33 8270	Љ	08/01/97
Benzo(a)anthracene 0.53 mg/kg 0.33 8270	Љ	08/01/97
Benzo(a)pyrene Not detected mg/kg 0.33 8270	JВ	08/01/97
Benzo(b)fluoranthene 0.39 mg/kg 0.33 8270	Љ	08/01/97
Benzo(k)fluoranthene 0.39 mg/kg 0.33 8270	Љ	08/01/97
Benzo(ghi)perylene Not detected mg/kg 0.33 8270	Љ	08/01/97
Chrysene 0.83 mg/kg 0.33 8270	Љ	08/01/97
Dibenzo(ah)anthracene Not detected mg/kg 0.33 8270	ЛВ	08/01/97
Fluoranthene 2.11 mg/kg 0.33 8270	Љ	08/01/97
Fluorene 0.84 mg/kg 0.33 8270	Љ	08/01/97
Indeno(1,2,3-cd)pyrene Not detected mg/kg 0.33 8270	Љ	08/01/97
Naphthalene 1.68 mg/kg 0.33 8270	ĴВ	08/01/97
Phenanthrene 3.07 mg/kg 0.33 8270	JB	08/01/97
Pyrene 1.99 mg/kg 0.33 8270	JВ	08/01/97
2-Methylnaphthalene 1.80 mg/kg 0.33 8270	JВ	08/01/97



FECL#: AA49570

Tag: TB11-D Date/Time Collected: 07/25/97 08:10

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics						
Total Solids	80.5	%	1	160,3	ЛН	08/01/97
Organics						
PNA Extraction	Completed				ЈКВ	07/31/97
GC/MS for Volatile Organics						
Benzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromochloromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromodichloromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromoform	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromomethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
n-Butylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
sec-Butylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
tert-Butylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Carbon tetrachloride	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Chlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Chloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Chloroform	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Chloromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
2-Chlorotoluene	Not detected	mg/kg	0.01	8260	VFM	
4-Chlorotoluene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Dibromochloromethane	Not detected	mg/kg	0.01	8260 8260	VFM	07/31/97
1,2-Dibromo-3-chloropropane	Not detected	mg/kg	0.01	8260 8260	VFM	07/31/97
1,2-Dibromoethane	Not detected	mg/kg	0.01	8260 8260	VFM	07/31/97
Dibromomethane	Not detected	mg/kg	0.01	8260 8260		07/31/97
1,2-Dichlorobenzene	Not detected	mg/kg	0.01	8260 8260	VFM	07/31/97
1,3-Dichlorobenzene	Not detected	mg/kg	0.01	8260 8260	VFM	07/31/97
1,4-Dichlorobenzene	Not detected	mg/kg	0.01	8260 8260	VFM	07/31/97
Dichlorodifluoromethane	Not detected	mg/kg	0.01	8260 8260	VFM	07/31/97
1,1-Dichloroethane	Not detected	mg/kg	0.01	8260 8260	VFM	07/31/97
1,2-Dichloroethane	Not detected	mg/kg	0.01		VFM	07/31/97
1,1-Dichloroethene	Not detected	mg/kg		8260	VFM	07/31/97
cis-1,2-Dichloroethene	Not detected	mg/kg mg/kg	0.01	8260	VFM	07/31/97
trans-1,2-Dichloroethene	Not detected	mg/kg mg/kg	0.01	8260		07/31/97
1,2-Dichloropropane	Not detected	~ ~	0.01	8260	VFM	07/31/97
, I P	1 101 doloolod	mg/kg	0.01	8260	VFM	07/31/97



FECL#: AA49570 (Continued)
Tag: TB11-D
Date/Time Collected: 07/25/97 08:10

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Organics (Continued)						
GC/MS for Volatile Organics						
1,3-Dichloropropane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
2,2-Dichloropropane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1-Dichloropropene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Ethylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Hexachlorobutadiene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Isopropylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
p-Isopropyltoluene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Methylene chloride	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Naphthalene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
n-Propylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Styrene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1,1,2-Tetrachloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1,2,2-Tetrachloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Tetrachloroethene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Toluene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,3-Trichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,4-Trichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1,1-Trichloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1,2-Trichloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Trichloroethene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Trichlorofluoromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,3-Trichloropropane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,4-Trimethylbenzene	0.01	mg/kg	0.01	8260	VFM	07/31/97
1,3,5-Trimethylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Vinyl chloride	Not detected	mg/kg	0.01	8260	VFM	07/31/97
o-Xylene	0,03	mg/kg	0.01	8260	VFM	07/31/97
p,m-Xylene	0.04	mg/kg	0.01	8260	VFM	07/31/97
cis-1,3-Dichloropropene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Polynuclear Aromatics						
Acenaphthene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Acenaphthylene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Anthracene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(a)anthracene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(a)pyrene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Doine	1401 detected	1115/1Kg	0.55	0270	31.7	00/01/7/



FECL #: AA49570 (Continued)

Tag: TB11-D

Date/Time Collected: 07/25/97 08:10

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Organics (Continued)						
Polynuclear Aromatics (Con	ntinued)					
Benzo(b)fluoranthene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(k)fluoranthene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(ghi)perylene	Not detected	mg/kg	0.33	8270	${ m JB}$	08/01/97
Chrysene	Not detected	mg/kg	0.33	8270	${ m JB}$	08/01/97
Dibenzo(ah)anthracene	Not detected	mg/kg	0.33	8270	${ m JB}$	08/01/97
Fluoranthene	Not detected	mg/kg	0.33	8270	${ m JB}$	08/01/97
Fluorene	Not detected	mg/kg	0.33	8270	Љ	08/01/97
Indeno(1,2,3-cd)pyrene	Not detected	mg/kg	0.33	8270	ЛВ	08/01/97
Naphthalene	Not detected	mg/kg	0.33	8270	ЛВ	08/01/97
Phenanthrene	Not detected	mg/kg	0.33	8270	ЛВ	08/01/97
Pyrene	Not detected	mg/kg	0.33	8270	ЛВ	08/01/97
2-Methylnaphthalene	Not detected	mg/kg	0.33	8270	JВ	08/01/97

FECL#: AA49571

Tag: TDup

Date/Time Collected: 07/25/97

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics						
Total Solids	89.6	%	1	160.3	JН	08/01/97
Organics						
PNA Extraction	Completed				JKB	07/31/97
GC/MS for Volatile Organics	S					
Benzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromochloromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromodichloromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromoform	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Bromomethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
n-Butylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97



FECL #: AA49571 (Continued)

Tag: TDup

Date/Time Collected: 07/25/97

Analysis Results Uni	s MRL Meth	od Analyst Date Run
Organics (Continued)		
GC/MS for Volatile Organics (Continued)		
sec-Butylbenzene Not detected mg/	kg 0.01 8260	VFM 07/31/97
tert-Butylbenzene Not detected mg/	kg 0.01 8260	VFM 07/31/97
Carbon tetrachloride Not detected mg/		
Chlorobenzene Not detected mg/	kg 0.01 8260	VFM 07/31/97
Chloroethane Not detected mg/	kg 0.01 8260	VFM 07/31/97
Chloroform Not detected mg/	g 0.01 8260	VFM 07/31/97
Chloromethane Not detected mg/	kg 0.01 8260	VFM 07/31/97
2-Chlorotoluene Not detected mg/	g 0.01 8260	
4-Chlorotoluene Not detected mg/	g 0.01 8260	
Dibromochloromethane Not detected mg/	g 0.01 8260	
1,2-Dibromo-3-chloropropane Not detected mg/	g 0.01 8260	
1,2-Dibromoethane Not detected mg/		VFM 07/31/97
Dibromomethane Not detected mg/		VFM 07/31/97
1,2-Dichlorobenzene Not detected mg/		VFM 07/31/97
1,3-Dichlorobenzene Not detected mg/		VFM 07/31/97
1,4-Dichlorobenzene Not detected mg/		VFM 07/31/97
Dichlorodifluoromethane Not detected mg/		VFM 07/31/97
1,1-Dichloroethane Not detected mg/		VFM 07/31/97
1,2-Dichloroethane Not detected mg/		VFM 07/31/97
1,1-Dichloroethene Not detected mg/		VFM 07/31/97
cis-1,2-Dichloroethene Not detected mg/		VFM 07/31/97
trans-1,2-Dichloroethene Not detected mg/		VFM 07/31/97
1,2-Dichloropropane Not detected mg/		VFM 07/31/97
1,3-Dichloropropane Not detected mg/		VFM 07/31/97
2,2-Dichloropropane Not detected mg/l		VFM 07/31/97
1,1-Dichloropropene Not detected mg/l		VFM 07/31/97
Ethylbenzene Not detected mg/l		VFM 07/31/97
Hexachlorobutadiene Not detected mg/l		VFM 07/31/97
Isopropylbenzene Not detected mg/l		VFM 07/31/97
p-Isopropyltoluene Not detected mg/l		VFM 07/31/97
Methylene chloride Not detected mg/l		VFM 07/31/97
Naphthalene Not detected mg/l		VFM 07/31/97
n-Propylbenzene Not detected mg/l		VFM 07/31/97 VFM 07/31/97
Styrene Not detected mg/l		VFM 07/31/97
1,1,1,2-Tetrachloroethane Not detected mg/k		



FECL #: AA49571 (Continued)

Tag: TDup Date/Time Collected: 07/25/97

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Organics (Continued)						
GC/MS for Volatile Organic	s (Continued)					
1,1,2,2-Tetrachloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Tetrachloroethene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Toluene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,3-Trichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,4-Trichlorobenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1,1-Trichloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,1,2-Trichloroethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Trichloroethene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Trichlorofluoromethane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,3-Trichloropropane	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,2,4-Trimethylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
1,3,5-Trimethylbenzene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Vinyl chloride	Not detected	mg/kg	0.01	8260	VFM	07/31/97
o-Xylene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
p,m-Xylene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
cis-1,3-Dichloropropene	Not detected	mg/kg	0.01	8260	VFM	07/31/97
Polynuclear Aromatics						
Acenaphthene	Not detected	mg/kg	0.33	8270	Љ	08/01/97
Acenaphthylene	Not detected	mg/kg	0.33	8270	Љ	08/01/97
Anthracene	Not detected	mg/kg	0.33	8270	Љ	08/01/97
Benzo(a)anthracene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(a)pyrene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(b)fluoranthene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(k)fluoranthene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Benzo(ghi)perylene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Chrysene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Dibenzo(ah)anthracene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Fluoranthene	Not detected	mg/kg	0.33	8270 8270	ЛВ	08/01/97
Fluorene	Not detected	mg/kg	0.33	8270	JB	08/01/97
ndeno(1,2,3-cd)pyrene	Not detected	mg/kg	0.33	8270	JВ	08/01/97
Naphthalene	Not detected	mg/kg	0.33	8270 8270	ЛВ	08/01/97
Phenanthrene	Not detected	mg/kg	0.33	8270 8270	лв ЛВ	08/01/97
Pyrene	Not detected Not detected	mg/kg	0,33	8270 8270	лв ЛВ	08/01/97
2-Methylnaphthalene	Not detected	mg/kg	0.33	8270 8270	лв ЛВ	08/01/97



FECL #: AA49572

Tag: TBG-G

Date/Time Collected: 07/25/97 15:18

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	95.2	%	1	160.3	JН	08/01/97
Metals Cadmium Chromium Lead	2.38 145 185	mg/kg mg/kg mg/kg	0.05 1.0 1.0	6020 6020 6020	PR PR PR	08/06/97 08/06/97 08/06/9 7

FECL#: AA49573

Tag: TBG-F

Date/Time Collected: 07/25/97 15:30

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	90.0	%	· 1	160.3	JН	08/01/97
Metals Cadmium Chromium Lead	2.05 302 399	mg/kg mg/kg mg/kg	0.05 1.0 1.0	6020 6020 6020	PR PR PR	08/06/97 08/06/97 08/06/97

FECL #: AA49574

Tag: TBG-E (1-2)
Date/Time Collected: 07/25/97 16:15

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	85.0	%	1	160.3	JH	08/01/97



FECL #: AA49574 (Continued)

Tag: TBG-E (1-2)

Date/Time Collected: 07/25/97 16:15

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Metals Cadmium Chromium Lead	7.19	mg/kg	0.05	6020	PR	08/06/97
	3,770	mg/kg	1.0	6020	PR	08/06/97
	612	mg/kg	1.0	6020	PR	08/06/97

FECL#: AA49575 **Tag: TBG-E** (3-4)

Date/Time Collected: 07/25/97 16:25

Matrix: Soil

Analysis	Results	Units	MRL	Method	Analyst	Date Run
Inorganics Total Solids	94.3	%	1	160.3	ЛН	08/01/97
Metals Cadmium Chromium Lead	9.18 208 1,110	mg/kg mg/kg mg/kg	0.05 1.0 1.0	6020 6020 6020	PR PR PR	08/06/97 08/06/97 08/06/97

Note: Methods may be modified for improved performance.

Results reported on a dry weight basis, where applicable.

Results relate only to items tested.

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Violetta F. Murshak

Laboratory Director

Violetta F. Murshall

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(3) HNO₃ to pH <2

W = Water

L=Liquid (2) 10N NaOH to pH ≥ 12

S = Solid(1) H_2SO_4 to pH < 2

**Preservatives: *Matrix:

GW = Groundwater (4) 1:1 HCl

SL=Sludge (5) Zinc Acetate

WW = Wastewater (6) See Remarks

COCform.tem

0=Other

APPENDIX F SUPPLEMENTAL GUIDANCE TO RAGS: CALCULATING THE CONCENTRATION TERM

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PB92-963373

United States Environmental Protection Agency Office of Solid Waste and Emergency Response Washington, D.C. 20460 Publication 9285.7-081 May 1992

SEPA

Supplemental Guidance to RAGS: Calculating the Concentration Term

Office of Emergency and Remedial Response Hazardous Site Evaluation Division, OS-230 intermittent Bulletin Volume 1 Number 1

The overarching mandate of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is to protect human health and the environment from current and potential threats posed by uncontrolled releases of hazardous substances. To help meet this mandate, the U.S. Environmental Protection Agency's (EPA's) Office of Emergency and Remedial Response has developed a human health risk assessment process as part of its remedial response program. This process is described in Risk Assessment Guidance for Superfund: Volume I — Human Health Evaluation Manual (RAGS/HHEM). Part A of RAGS/HHEM addresses the baseline risk assessment, and describes a general approach for estimating exposure to individuals from hazardous substance releases at Superfund sites.

This bulletin explains the concentration term in the exposure/intake equation to remedial project managers (RPMs), risk assessors, statisticians, and other personnel. This bulletin presents the general intake equation as presented in RAGS/HHEM Part A, discusses basic concepts concerning the concentration term, describes generally how to calculate the concentration term, presents examples to illustrate several important points, and, lastly, identifies where to get additional help.

THE CONCENTRATION TERM

How is the concentration term used?

RAGS/HHEM Part A presents the Superfund risk assessment process in four "steps": (1) data collection and evaluation; (2) exposure assessment; (3) toxicity assessment; and (4) risk characterization. The concentration term is calculated for use in the exposure assessment step. Highlight I presents the general equation Superfund uses for calculating exposure, and illustrates that the concentration term (C) is one of several parameters needed to estimate contaminant intake for an individual.

For Superfund assessments, the concentration term (C) in the intake equation is an estimate of the arithmetic average concentration for a contaminant based on a set of site sampling results. Because of the uncertainty associated with estimating the true average concentration at a site, the 95 percent upper confidence limit (UCL) of the arithmetic mean should be used for this variable. The 95 percent UCL provides reasonable confidence that the true site average will not be underestimated.

Why use an average value for the concentration term?

An estimate of average concentration is used because:

Supplemental Guidance to RAGS is a bulletin series on risk assessment of Superfund sites. These bulletins serve as supplements to Risk Assessment Guidance for Superfund: Volume I — Human Health Evaluation Montail. The information presented is intended as guidance to EPA and other government employees. It does not constitute ratemating by the Agency, and may not be relied on to create a substantive or procedural right enforceable by any other person. The Government may take action that is at variance with these bulletins.

Highlight 1 GENERAL EQUATION FOR ESTIMATING EXPOSURE TO A SITE CONTAMINANT

$$I = C \times \frac{CR \times EFD}{BW} \times \frac{1}{AT}$$

where:

intake (i.e., the quantitative measure of exposure in RAGS/HHEM)

C = contaminant concentration

CR = contact (intake) rate

EFD = exposure frequency and duration

BW = body weight
AT = averaging time

- (1) carcinogenic and chronic noncarcinogenic toxicity criteria¹ are based on lifetime average exposures; and
- (2) average concentration is most representative of the concentration that would be contacted at a site over time.

For example, if you assume that an exposed individual moves randomly across an exposure area, then the spatially averaged soil concentration can be used to estimate the true average concentration contacted over time. In this example, the average concentration contacted over time would equal the spatially averaged concentration over the exposure area. While an individual may not actually exhibit a truly random pattern of movement across an exposure area, the assumption of equal time spent in different parts of the area is a simple but reasonable approach.

When should an average concentration be used?

The two types of exposure estimates now being required for Superfund risk assessments, a reasonable maximum exposure (RME) and an average, should both use an average concentration. To be protective, the overall estimate of intake (see Highlight 1) used as a basis for action at

Superfund sites should be an estimate in the high end of the intake/dose distribution. One high-end option is the RME used in the Superfund program. The RMR which is defined as the highest exposure that could reasonably be expected to occur for a given exposure pathway at a site, is suitabled no account the amount uncertainty in the end amending and amending and Experime satisficial (e.g., exposure frequency, For comparative purposes, averaging time). Agency guidance (U.S. EPA, Guidance on Risk Characterization for Risk Managers and Risk Assessors, February 26, 1992) states that an average estimate of exposure also should be presented in risk assessments. For decision-making purposes in the Superfund program, however, RME is used to estimate risk.2

Why use an estimate of the arithmetic mean rather than the geometric mean?

The choice of the arithmetic mean concentration as the appropriate measure for estimating exposure derives from the need to estimate an individual's long-term average exposure. Most Agency health criteria are based on the long-term average daily dose, which is simply the sum of all daily doses divided by the total number of days in the averaging period. This is the definition of an arithmetic mean. The

When acute toxicity is of most concern, a longterm average concentration generally should not be used for risk assessment purposes, as the focus should be to estimate short-term, peak concentrations.

² For additional information on RME, see RAGS/HHEM Part A and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 55 Federal Register 8710, March 8, 1990.

arithmetic mean is appropriate regardless of the pattern of daily exposures over time or the type of statistical distribution that might best describe the sampling data. The geometric mean of a set of sampling results, however, bears no logical connection to the cumulative intake that would result from long-term contact with site contaminants, and it may differ appreciably from and be much lower than - the arithmetic mean. Although the geometric mean is a convenient parameter for describing central tendencies of lognormal distributions, it is not an appropriate basis for estimating the concentration term used in Superfund exposure assessments. The following simple example may help clarify the difference between the arithmetic and geometric mean when used for an exposure assessment:

> Assume the daily exposure for a trespasser subject to random exposure at a site is 1.0, 0.01, 1.0, 0.01, 1.0, 0.01, 1.0, and 0.01 units/day over an 8-day period. Given these values, the cumulative exposure is simply their summation, or 4.04 units. Dividing this by 8 days of exposure results in an arithmetic mean of 0.505 units/day. This is the value we would want to use in a risk assessment for this individual, not the geometric mean of 0.1 units/day. Viewed another way, multiplication of the geometric mean by the number of days equals 0.8 units, considerably lower than the known cumulative exposure of 4.04 units.

UCL AS AN ESTIMATE OF THE AVERAGE CONCENTRATION

What is a 95 percent UCL?

The 95 percent UCL of a mean is defined as a value that, when calculated repeatedly for randomly drawn subsets of site data, equals or exceeds the true mean 95 percent of the time. Although the 95 percent UCL of the mean provides a conservative estimate of the average (or mean) concentration, it should not be confused with a 95th percentile of site concentration data (as shown in Highlight 2).

Why use the UCL as the average concentration?

Statistical confidence limits are the classical tool for addressing uncertainties of a distribution average. The 95 percent UCL of the arithmetic

mean concentration is used as the average concentration because it is not possible to know the true mean. The 95 percent UCL therefore accounts for uncertainties due to limited sampling data at Superfund sites. As sampling data become less limited at a site, uncertainties decrease, the UCL moves closer to the true mean, and exposure evaluations using either the mean or the UCL produce similar results. This concept is illustrated in Highlight 2.

Should a value other than the 95 percent UCL be used for the concentration?

A value other than the 95 percent UCL can be used provided the risk assessor can document that high coverage of the true population mean occurs (i.e., the value equals or exceeds the true population mean with high probability). For exposure areas with limited amounts of data or extreme variability in measured or modeled data, the UCL can be greater than the highest measured or modeled concentration. In these cases, if additional data cannot practicably be obtained, the highest measured or modeled value could be used as the concentration term. Note, however, that the true mean still may be higher than this maximum value (i.e., the 95 percent UCL indicates a higher mean is possible), especially if the most contaminated portion of the site has not been sampled.

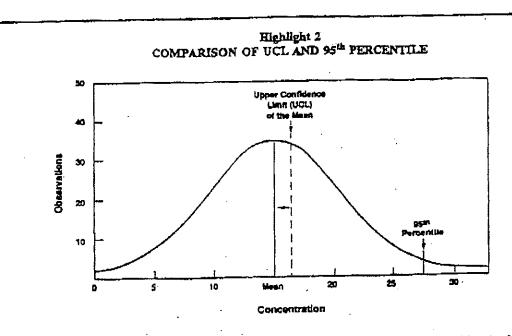
CALCULATING THE UCL

How many samples are necessary to calculate the 95 percent UCL?

Sampling data from Superfund sites have shown that data sets with fewer than 10 samples per exposure area provide poor estimates of the mean concentration (i.e., there is a large difference between the sample mean and the 95 percent UCL), while data sets with 10 to 20 samples per exposure area provide somewhat better estimates of the mean, and data sets with 20 to 30 samples provide fairly consistent estimates of the mean (i.e., the 95 percent UCL is close to the sample mean). Remember that, in general, the UCL approaches the true mean as more samples are included in the calculation.

Should the data be transformed?

EPA's experience shows that most large or complete environmental contaminant data sets



As sample size increases, the UCL of the mean moves closer to the true mean, while the 95th percentile of the distribution remains at the upper end of the distribution.

from soil sampling are lognormally distributed rather than normally distributed (see Highlights 3 and 4 for illustrations of lognormal and normal distributions). In most cases, it is reasonable to assume that Superfund soil sampling data are lognormally distributed. Because transformation is a necessary step in calculating the UCL of the arithmetic mean for a lognormal distribution, the data should be transformed by using the natural logarithm function (i.e., calculate in(x), where x is the value from the data set). However, in cases where there is a question about the distribution of the data set, a statistical test should be used to identify the best distributional assumption for the data set. The W-test (Gilbert 1987) is one statistical method that can be used to determine if a data set is consistent with a normal or lognormal distribution. In all cases, it is valuable to plot the data to better understand the contaminant distribution at the site.

How do you calculate the UCL for a lognormal distribution?

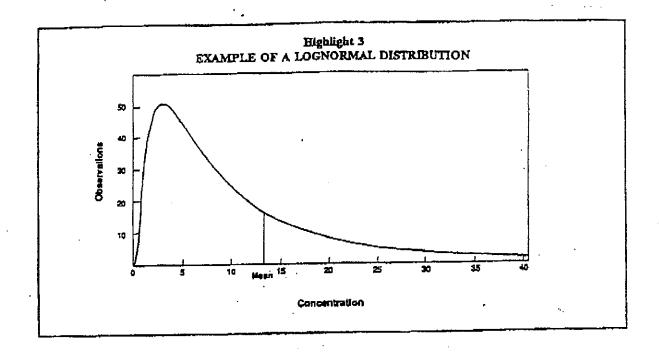
To calculate the 95 percent UCL of the arithmetic mean for a lognormally distributed data

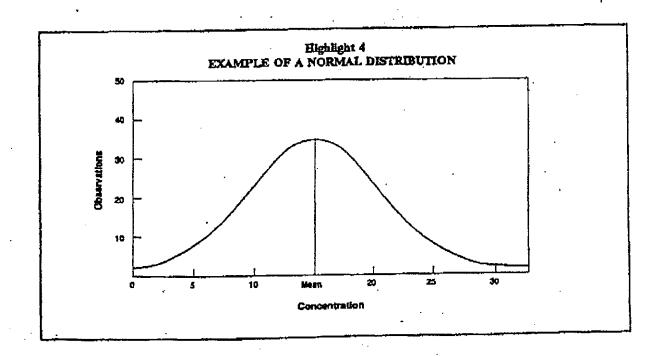
set, first transform the data using the natural logarithm function as discussed previously (i.e., calculate ln(x)). After transforming the data, determine the 95 percent UCL for the data set by completing the following four steps:

- Calculate the arithmetic mean of the transformed data (which is also the log of the geometric mean);
- (2) Calculate the standard deviation of the transformed data;
- (3) Determine the H-statistic (e.g., see Gilbert 1987); and
- (4) Calculate the UCL using the equation shown in Highlight 5.

How do you calculate the UCL for a normal distribution?

If a statistical test supports the assumption that the data set is normally distributed, calculate the 95 percent UCL by completing the following four steps:





Highlight 5 CALCULATING THE UCL OF THE ARITHMETIC MEAN FOR A LOGNORMAL DISTRIBUTION

$$UCL = e^{\frac{(2\pi+0.5)^2+2H(\sqrt{n-1})}{5}}$$

where:

		# 4 12 - 2a
UÇL	=	upper confidence limit
6 ·	≠.	constant (base of the natural log, equal to 2.718)
x	=	mean of the transformed data
\$	74	standard deviation of the transformed data
H	-	H-statistic (e.g., from table published in Gilbert 1987)
n	#	number of samples

Highlight 6 CALCULATING THE UCL OF THE ARITHMETIC MEAN FOR A NORMAL DISTRIBUTION

 $UCL = \overline{x} + t \left(s / \sqrt{n} \right)$

wbere:

UCL	=	upper confidence limit
	-	mean of the untransformed data
S	-	standard deviation of the untransformed data
t	=	Student-t statistic (e.g., from table published in Gilbert 1987)
'n		number of samples

- (1) Calculate the arithmetic mean of the untransformed data;
- (2) Calculate the standard deviation of the untransformed data;
- (3) Determine the one-tailed t-statistic (e.g., see Gilbert 1987); and
- (4) Calculate the UCL using the equation presented in Highlight 6.

Use caution when applying normal distribution calculations if there is a possibility that heavily contaminated portions of the site have not been adequately sampled. In such cases, a UCL from normal distribution calculations could fall below the true mean, even if a limited data set at a site appears normally distributed.

EXAMPLES

The examples shown in Highlights 7 and 8 address the exposure scenario where an individual at a Superfund site has equal opportunity to contact soil in any sector of the contaminated area over time. Even though the examples address only soil exposures, the UCL approach is applicable to all exposure pathways. Guidance and examples for other exposure pathways will be presented in forthcoming bulletins.

Highlight 7 presents a simple data set and provides a stepwise demonstration of transforming the data — assuming a lognormal distribution — and calculating the UCL. Highlight 8 uses the same data set to show the difference between the UCLs that would result from assuming normal and lognormal distribution of the data. These

Highlight 7 EXAMPLE OF DATA TRANSFORMATION AND CALCULATION OF UCL

This example shows the calculation of a 95 percent UCL of the arithmetic mean concentration for chromium in soil at a Superfund site. This example is applicable only to a scenario in which a spatially random exposure pattern is assumed. The concentrations of chromium obtained from random sampling in soil at this site (in mg/kg) are 10, 13, 20, 36, 41, 59, 67, 110, 110, 136, 140, 160, 200, 230, and 1300. Using these data, the following steps are taken to calculate a concentration term for the intake equation:

- (1) Plot the data and inspect the graph. (You may need the help of a statistician for this part [as well as other parts] of the calculation of the UCL.) The plot (not shown, but similar to Highlight 3) shows a skew to the right, consistent with a lognormal distribution.
- (2) Transform the data by taking the natural log of the values (i.e., determine ln(x)). For this data set, the transformed values are: 2.30, 2.56, 3.00, 3.58, 3.71, 4.08, 4.20, 4.70, 4.70, 4.91, 4.94, 5.08, 5.30, 5.44, and 7.17.
- (3) Apply the UCL equation in Highlight 5, where:

x̄ = 4.38 s = 1.25 H = 3.163 (based on 95 percent) n = 15

The resulting 95 percent UCL of the arithmetic mean is thus found to equal e^(6,218), or 502 mg/kg.

Highlight 8 COMPARING UCLS OF THE ARITHMETIC MEAN ASSUMING DIFFERENT DISTRIBUTIONS

In this example, the data presented in Highlight 7 are used to demonstrate the difference in the UCL that is seen if the normal distribution approach were inappropriately applied to this data set (i.e., if, in this example, a normal distribution is assumed).

ASSUMED DISTRIBUTION:

Normal

Logormal

TEST STATISTIC:

Student-t

H-statistic

95 PERCENT UCL (mg kg):

325

502

Statistical Tables 265

Table A12 Values of $H_{1-\alpha}=H_{0.95}$ for Computing a One-Sided Upper 95% Confidence Limit

-ognormal Mean	
on a Lo	

2.750 2.035 1.886 1.802 1.775 1.749 1.772 1.701 1.684 1 1.843 1.809 1.771 1.742 1.701 1.684 1 1.825 2.198 1.992 1.881 1.843 1.809 1.771 1.742 1.718 1 1.845 2.198 1.992 1.881 1.843 1.809 1.771 1.742 1.718 1 1.845 2.198 2.108 2.1086 1.908 1.876 1.813 1.865 2.026 1.968 1.989 1.928 1.876 1.813 1.865 2.047 2.653 2.086 2.108 1.899 1.928 1.876 1.813 1.742 1.742 1.742 1.813 1.846 1.899 1.928 2.010 1.946 1.899 1.928 2.100 2.570 2.443 2.307 2.202 2.102 2.025 11.742 1.712 2.102 2.025 11.744 4.478 3.420 2.570 2.570 2.543 2.307 2.202 2.102 2.025 11.744 4.478 3.420 2.570 2.573 2.589 2.432 2.310 2.202 2.102 2.025 11.744 4.478 3.425 3.698 3.103 2.915 2.744 2.564 2.423 2.306 2.502 2.307 2.202 2.102 2.002 2.302 2.303 2.433 2.737 2.881 2.203 2.307 2.202 2.310 2.002 2.302 2.318 4.207 2.564 2.423 2.300 2.302 2.303 2.308 2.309		M	'n	۲-	91	12	45	21	31	2	101
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Source: After Land, 1975. This table is used in Section 13.2.



ASTI ENVIRONMENTAL

ENVIRONMENTAL INVESTIGATION, REMEDIATION, COMPLIANCE AND RESTORATION PROJECTS THROUGHOUT THE GREAT LAKES SINCE 1985.

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- ENVIRONMENTAL ASSESSMENTS AND IMPACT STATEMENTS
- ENVIRONMENTAL OPPORTUNITIES ASSESSMENT
- GIS MAPPING
- HAZARD MITIGATION PLANNING
- MINING AND RECLAMATION ASSISTANCE
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- PHASE I ESA AND ENVIRONMENTAL DUE DILIGENCE ASSESSMENTS
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- Soil and Groundwater Remediation
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Attachment G

WMU-31 Concrete Investigation Report

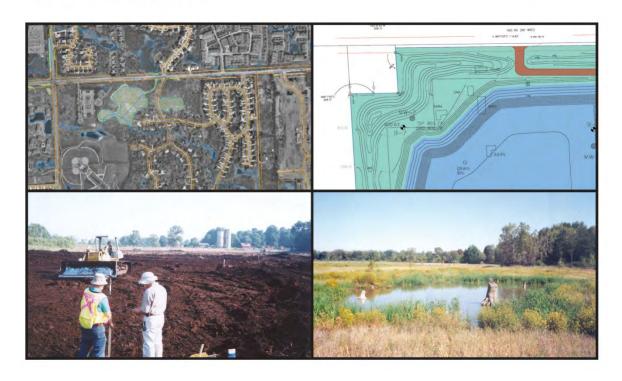
Addendum 1 - Waste Management Unit 31 Concrete Investigation Report

RTRR Property 18251 West Jefferson Riverview, Michigan

Riverview-Trenton Railroad Company

April 5, 2021

ASTI ENVIRONMENTAL





Addendum 1 - Waste Management Unit 31 Concrete Investigation Report

RTRR Property 18251 West Jefferson Riverview, Michigan

April 5, 2021

Prepared For:

Riverview-Trenton Railroad Company 12225 Stephens Road Warren, Michigan 48089

Report Prepared By:

ASTI Environmental 10448 Citation Drive, Suite 100 Brighton, Michigan 48116 (810) 225-2800

ASTI Project No. 10860

Report Prepared by: Report Reviewed by:

Greg S. Oslosky, P.G.

Director - Grand Rapids Office

Allison J. Rogowski, E.P. Environmental Scientist



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Addendum 1 - Waste Management Unit 31 Concrete Investigation Report Riverview-Trenton Railroad Company Former McLouth Steel Site 18251 West Jefferson Avenue Riverview, Michigan

1.0 Introduction

In accordance with the Corrective Action Consent Order ("CACO") dated November 1, 2018 between the Riverview-Trenton Rail Road Company ("RTRR") and the Michigan Department of Environment, Great Lakes, and Energy ("EGLE"), ASTI Environmental ("ASTI") prepared this Addendum to the Waste Management Unit ("WMU") 31 Concrete Investigation Report for the property located at 18251 West Jefferson Avenue in the City of Riverview, Wayne County, Michigan ("Subject Property"). The portion of the Subject Property located south of Sibley Road is located in the City of Trenton. ASTI submitted the WMU-31 Concrete Investigation Report ("WMU-31 Investigation Report") to EGLE on January 22, 2021.

The WMU-31 Investigation Report was prepared in accordance with the CACO and the WMU Investigation Work Plan ("WMU Work Plan"), prepared by ASTI and dated June 28, 2019. The WMU Work Plan was approved by EGLE in a letter dated July 29, 2019.

2.0 Background

Background information for the Subject Property and WMU-31 are included in the WMU-31 Investigation Report. In accordance with the WMU Investigation Work Plan, ASTI collected 12 concrete samples and one duplicate sample from the WMU-31 concrete pad on July 7, 2020 for laboratory analysis of the Michigan 10 Metals (arsenic, barium, cadmium, total chromium, copper, lead, mercury, selenium, silver, and zinc) for comparison to the EGLE Generic Nonresidential Cleanup Criteria ("GNRCC") for Groundwater Surface Water Interface Protection ("GSIP") under Part 201 of Michigan's *Natural Resources and Environmental Protection Act, 1994 PA 451, as Amended* ("Part 201"). The sample collection procedure is described in the WMU-31 Concrete Investigation Report.

Based on laboratory analysis, metals were detected in each of the 12 concrete samples and the duplicate sample. The only metals to exceed the EGLE GNRCC for GSIP were arsenic (all samples), total chromium (all samples), and selenium (one sample and its duplicate sample). A WMU-31 Site Plan, including the sample grids and sample locations, is provided as Figure 1A.

Based on exceedances of total chromium in each sample, ASTI recommended collection of additional samples from the same locations as the previous samples for laboratory analysis of hexavalent chromium and, pending those results, additional analysis of toxicity characteristic leaching procedures ("TCLP") chromium (if hexavalent chromium exceeds criteria), TCLP arsenic, and TCLP selenium in samples which exceeded the EGLE GNRCC for GSIP.

EGLE provided verbal comments on the WMU-31 Concrete Investigation Report and agreed with the recommendation to collect additional samples for the suite of analysis described



above. EGLE required that a work plan be completed and submitted for review and approval before completing the additional investigation.

3.0 WMU-30 Additional Concrete Investigation

3.1 WMU-31 Additional Investigation Work Plan

ASTI prepared and submitted to EGLE the Work Plan – Additional Concrete Investigation - WMU-31 on February 9, 2021 ("Work Plan"). The Work Plan described the sample methodology to be used for collection of additional concrete samples from WMU-31 and the laboratory suite for analysis. EGLE provided their approval of the Work Plan in a letter dated February 19, 2021. EGLE's letter providing approval of the Work Plan is included as Attachment A to this Addendum.

3.2 March 5, 2021 Concrete Sample Collection

In accordance with the approved Work Plan, ASTI collected one concrete sample from each of the 12 grid areas described in the WMU-31 Concrete Investigation Report and shown on Figure 1A. The samples were collected adjacent to the samples collected previously; whose locations resulted from generation of random sample locations as described in the WMU-31 Concrete Investigation Report. ASTI collected two eight-ounce jars of concrete per sample using the same procedures used to collect the July 7, 2020 samples. Each sample was labeled with a unique identification number similar to those used in the previous sampling event, including the area (A1, A2, or A3), the collection date, and the grid number (i.e. the sample collected from Area 1, Grid 1 was identified as A1-3521-1). After collection, the samples were placed on ice and kept cold until delivery to Fibertec Environmental Services ("Fibertec") in Holt, Michigan for analysis. Sample handling and transfer were conducted using standard chain-of-custody procedures. The samples were initially analyzed by Fibertec for hexavalent chromium. The remaining sample volume was held by the laboratory pending ASTI's instruction for TCLP analysis after review of the hexavalent chromium results.

3.3 Laboratory Analytical Results – Hexavalent Chromium

Laboratory analytical results reported detection of hexavalent chromium in one concrete sample. The sample collected from Area 2 – Grid 1 (sample ID: A2-3521-1) contained a hexavalent chromium concentration of 750 micrograms per kilogram (μ g/L or parts per billion). The remaining samples, including the duplicate sample did not contain hexavalent chromium at concentrations exceeding the laboratory reporting limit of 400 μ g/L. The maximum detected hexavalent chromium concentration is below the EGLE GNRCC for GSIP of 3,300 μ g/L. Therefore, chromium, including hexavalent chromium, does not exceed the EGLE GNRCC for GSIP in concrete at WMU-31 and the samples were not analyzed for TCLP chromium. Figure 1A depicts the sample locations. Table 1A provides a summary of the laboratory analytical results for the July 7, 2020 concrete samples and the hexavalent chromium results for the March 5, 2021 concrete samples. Attachment B provides the laboratory analytical report for the March 5, 2021 concrete samples (the laboratory analytical report for the concrete samples collected in July 7, 2020 is included with the WMU-31 Concrete Investigation Report).



3.4 Laboratory Analytical Results – TCLP Arsenic and TCLP Selenium

Each sample collected on March 5, 2021 was analyzed for TCLP arsenic and sample A1-3521-3 was also analyzed for TCLP selenium. Laboratory analytical results did not report TCLP lead or TCLP selenium concentrations above the laboratory detection limit. Table 2A provides a summary of the laboratory analytical results for the TCLP lead and TCLP selenium analysis. Attachment B provides the laboratory analytical report for the TCLP analysis.

4.0 Conclusions

In accordance with the CACO and the Work Plan, ASTI collected additional concrete samples from the concrete pad in WMU-31. On March 5, 2021, ASTI collected 12 additional concrete samples (plus one QA/QC sample) for analysis of hexavalent chromium, TCLP lead and TCLP selenium (one location). Hexavalent chromium was not detected at concentrations in exceedance of the GNRCC for the Groundwater Surface Water Interface (GSI). Concentrations of the Michigan 10 metals hexavalent chromium did not exceed the GNRCC for GSIP and TCLP lead and TCLP selenium did not exceed the GNRCC for GSI. Therefore, the contaminants of concern (Michigan 10 Metals) in the concrete pad test at WMU-31 do not pose a risk to surface water adjacent to the Subject Property and no further investigation is required as by the CACO.

5.0 RCRA Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Greg S. Oslosky, P.G. Director – Grand Rapids

22, S.O.

Tables

Addendum - Waste Management Unit 31 Concrete Investigation

Table 1A - Summary of Concrete Sample Analytical Results Riverview Trenton Rail Road Company WMU-31 - Former EAF Dust and Sludge Storage Tanks Addendum to the WMU-31 Concrete Investigation Report ASTI File No.10860

	Groundwater																
	Surface Water	Sample Area and Grid	Area	11-1	Area	1 - 2		Area 1 - 3		Area	1 - 4	Area	11-5	Area	a 2 -1	Area	12-2
	Interface	Sample ID	A1-7720-1	A1-3521-1	A1-7720-2	A1-3521-2	A1-7720-3	Dup-WMU31 (4)	A1-3521-3	A1-7720-4	A1-3521-4	A1-7720-5	A1-3521-5	A2-7720-1	A2-3521-1	A2-7720-2	A2-3521-2
	Protection	Date	7/7/2020	3/5/2021	7/7/2020	3/5/2021	7/7/2020	7/7/2020	3/5/2021	7/7/2020	3/5/2021	7/7/2020	3/5/2021	7/7/2020	3/5/2021	7/7/2020	3/5/2021
Parameters	Criteria ⁽¹⁾	Units															
MI 10 Metals																	
Arsenic	4,600	μg/kg	6,300	NA ⁽³⁾	13,000	NA	6,800	7,300	NA	5,600	NA	6,000	NA	4,700	NA	6,300	NA
Barium	(G)	μg/kg	190,000	NA	220,000	NA	220,000	200,000	NA	180,000	NA	200,000	NA	150,000	NA	160,000	NA
Cadmium	(G,X)	μg/kg	150	NA	160	NA	200	160	NA	110	NA	160	NA	100	NA	160	NA
Chromium, Total	3,300 ⁽²⁾	μg/kg	13,000	NA	12,000	NA	15,000	13,000	NA	15,000	NA	12,000	NA	8,300	NA	13,000	NA
Chromium VI	3,300	μg/kg	NA	<400	NA	<400	NA	NA	<400	NA	<400	NA	<400	NA	750	NA	<400
Copper	(G)	μg/kg	15,000	NA	14,000	NA	14,000	15,000	NA	11,000	NA	14,000	NA	10,000	NA	12,000	NA
Lead	(G,X)	μg/kg	3,500	NA	4,800	NA	5,300	4,500	NA	3,800	NA	3,400	NA	2,900	NA	3,100	NA
Mercury, Total	50 (M); 1.2	μg/kg	<50	NA	<50	NA	<50	<50	NA	<50	NA	<50	NA	<50	NA	<50	NA
Selenium	400	μg/kg	390	NA	360	NA	510	520	NA	360	NA	310	NA	280	NA	390	NA
Silver	100 (M); 27	μg/kg	<100	NA	<100	NA	<100	<100	NA	<100	NA	<100	NA	<100	NA	<100	NA
Zinc	(G)	μg/kg	24,000	NA	40,000	NA	43,000	44,000	NA	22,000	NA	24,000	NA	16,000	NA	25,000	NA

μg/kg - micrograms per kilogram or parts per billiα

(1) Per R299.46, June 25, 2018

(2) Listed criteria is for hexavalent chromium.

(3) "NA" Not analyzed

(4) "DUP" refers to duplicate sample.

BOLD indicates a concentration in exceedance of the cleanup criteria.

G-Groundwater Surface Water Interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water.

M-Calculated criterion is below the analytical target detection limit,

therefore, the criterions defaults to the target detection limit.

generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

Table 1A - Summary of Concrete Sample Analytical Results Riverview Trenton Rail Road Company WMU-31 - Former EAF Dust and Sludge Storage Tanks Addendum to the WMU-31 Concrete Investigation Report ASTI File No.10860

	Groundwater Surface Water	Sample Area and Grid		Area 3 - 1		Area	13-2	Area	3 - 3	Area	3 - 4	Area	3 - 5
	Interface	Sample ID	A3-7720-1	A3-3521-1	Dup-WMU-31 ⁽⁴	A3-7720-2	A3-3521-2	A3-7720-3	A3-3521-3	A3-7720-4	A3-3521-4	A3-7720-5	A3-3521-5
	Protection	Date	7/7/2020	3/5/2021	3/5/2021	7/7/2020	3/5/2021	7/7/2020	3/5/2021	7/7/2020	3/5/2021	7/7/2020	3/5/2021
Parameters	Criteria ⁽¹⁾	Units											
MI 10 Metals													
Arsenic	4,600	μg/kg	5,100	NA	NA	6,700	NA	6,500	NA	7,100	NA	7,400	NA
Barium	(G)	μg/kg	160,000	NA	NA	200,000	NA	200,000	NA	180,000	NA	200,000	NA
Cadmium	(G,X)	μg/kg	140	NA	NA	140	NA	130	NA	130	NA	130	NA
Chromium, Total	3,300 ⁽²⁾	μg/kg	12,000	NA	NA	13,000	NA	14,000	NA	14,000	NA	15,000	NA
Chromium VI	3,300	μg/kg	NA	<400	<400	NA	<400	NA	<400	NA	<400	NA	<400
Copper	(G)	μg/kg	10,000	NA	NA	14,000	NA	12,000	NA	11,000	NA	14,000	NA
Lead	(G,X)	μg/kg	2,900	NA	NA	3,500	NA	3,300	NA	3,300	NA	3,700	NA
Mercury, Total	50 (M); 1.2	μg/kg	<50	NA	NA	<50	NA	<50	NA	<50	NA	<50	NA
Selenium	400	μg/kg	390	NA	NA	360	NA	310	NA	300	NA	390	NA
Silver	100 (M); 27	μg/kg	<100	NA	NA	<100	NA	<100	NA	<100	NA	<100	NA
Zinc	(G)	μg/kg	24,000	NA	NA	21,000	NA	21,000	NA	19,000	NA	22,000	NA

μg/kg - micrograms per kilogram or parts per billiα

- (1) Per R299.46, June 25, 2018
- (2) Listed criteria is for hexavalent chromium.
- (3) "NA" Not analyzed
- (4) "DUP" refers to duplicate sample.

BOLD indicates a concentration in exceedance of the cleanup criteria.

G-Groundwater Surface Water Interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water.

M-Calculated criterion is below the analytical target detection limit,

therefore, the criterions defaults to the target detection limit.

generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

Table 2A - Summary of Concrete Sample Analytical Results **TCLP Analysis** Riverview Trenton Rail Road Company WMU-31 - Former EAF Dust and Sludge Storage Tanks Addendum to the WMU-31 Concrete Investigation Report ASTI File No.10860

	Non-residential														
	Groundwater	Sample Grid	Area 1 - 1	Area 1 - 2	Area 1 - 3	Area 1 - 4	Area 1 - 5	Area 2 -1	Area 2 - 2	Area 3 - 1		Area 3 - 2	Area 3 - 3	Area 3 - 4	Area 3 - 5
	Surface Water	Sample ID	A1-3521-1	A1-3521-2	A1-3521-3	A1-3521-4	A1-3521-5	A2-3521-1	A2-3521-2	A3-3521-1 Dup-W	'MU-31 ⁽²	A3-3521-2	A3-3521-3	A3-3521-4	A3-3521-5
	Interface	Date	3/5/2021	3/5/2021	3/5/2021	3/5/2021	3/5/2021	3/5/2021	3/5/2021	3/5/2021 3/5/	/2021	3/5/2021	3/5/2021	3/5/2021	3/5/2021
Parameters	Criteria ⁽¹⁾	Units													
TCLP Arsenic	10	μg/L	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000 <1	,000	<1,000	<1,000	<1,000	<1,000
TCLP Selenium	5	μg/L	NA ⁽³⁾	NA	<200	NA	NA	NA	NA	1 AN	NΑ	NA	NA	NA	NA

μg/L - micrograms per liter or parts per billion (1) Per R299.46, June 25, 2018

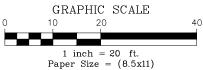
^{(2) &}quot;DUP" refers to duplicate sample.

^{(3) &}quot;NA" Not analyzed

Figure 1A WMU-31 Site Plan

Addendum - Waste Management Unit 31 Concrete Investigation





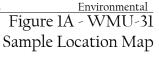
LEGEND Concrete Sample Location

RTRR - WMU-31

Investigation

18251 West Jefferson, Riverview, MI

Created for: Riverview-Trenton Railroad Company ASTI Project 10860, JRN, March 14, 2021



Attachment A EGLE Work Plan Approval Letter, February 19, 2021

Addendum - Waste Management Unit 31 Concrete Investigation



STATE OF MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

LANSING



February 19, 2021

VIA E-MAIL AND U.S. MAIL

Mr. Greg Oslosky, Director Western Great Lakes Office ASTI Environmental 660 Cascade West Parkway SE, Suite 210 Grand Rapids, Michigan 49546

Dear Mr. Oslosky:

SUBJECT: Approval of Work Plan pursuant to Corrective Action Consent

Order No. 111-06-2018 (CACO); Riverview Trenton Railroad Company (RTRR), Riverview, Michigan, and Trenton, Michigan;

MIK 420 024 889; Waste Data System Number 497352

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), has completed its review of the Additional Concrete Investigation for Waste Management Unit 31 (Work Plan) at the RTRR site, submitted by ASTI Environmental on February 10, 2021. The Work Plan was reviewed for compliance with the applicable sections of Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and its administrative rules, as well as the site's current CACO. Based on the review, the Work Plan is approved.

If you have any questions, please contact me at 517-242-8496; RungeJ@Michigan.gov; or EGLE, MMD, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Jacob Runge, Environmental Engineer Management and Tracking Unit Hazardous Waste Section Materials Management Division

cc: Mr. Tom Wackerman, President, ASTI Environmental

Mr. Dennis Schreibeis, Director, Crown Enterprises, Inc.

Mr. Richard Conforti, EGLE

Mr. John McCabe, EGLE

Ms. Jennifer Hazelton, EGLE

Mr. Nathan Erber. EGLE

Corrective Action File

Attachment B Laboratory Analytical Reports

Addendum - Waste Management Unit 31 Concrete Investigation



Wednesday, March 17, 2021

Fibertec Project Number: A00639

Project Identification: RTRR (10860) /10860

Submittal Date: 03/10/2021

Mr. Greg Oslosky
Applied Science & Technology, Inc. - Brighton
10448 Citation Dr.
Suite 100
Brighton, MI 48116

Dear Mr. Oslosky,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Sue Ricketts at 10:37 AM, Mar 17, 2021

For Daryl P. Strandbergh Laboratory Director

Enclosures



Order: A00639
Page: 2 of 15
Date: 03/17/21

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: A1-3521-1

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Units

μg/kg

Collect Date:

03/05/21

Client Project No:

10860

Sample Matrix:

Other (Solid)

Aliquot ID:

Collect Time:

09:28

Sample Comments:

Parameter(s)

Definitions: Q: Q

Chromium, Hexavalent

1. Chromium VI

Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Other (Solid)

Method: EPA 3060A/EPA 7196A

Q

Result

U

Reporting Limit Di

400

Pre Dilution P. Date

Description: A1-3521-1

1.0

A00639-001

Preparation
P. Date P. Batch
03/12/21 W321C12A

A. Date 03/16/21

A. Batch Init.
W321C12A JMK

Analysis

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: A00639 3 of 15 Page: Date: 03/17/21

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: A1-3521-2

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No:

Definitions:

10860

Sample Matrix:

Other (Solid)

Collect Time:

09:50

Analysis

Sample Comments:

Parameter(s)

Chromium, Hexavalent

1. Chromium VI

Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

A00639-002

Aliquot ID: Description: A1-3521-2 Matrix: Other (Solid)

Method: EPA 3060A/EPA 7196A

Units

μg/kg

Result

U

Q

Reporting Limit Dilution

400

1.0

P. Date P. Batch 03/12/21 W321C12A

Preparation

A. Date 03/16/21

A. Batch Init. W321C12A JMK

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: A00639 4 of 15 Page: Date: 03/17/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A1-3521-3

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Collect Time:

10:13

A00639-003 Chromium, Hexavalent Aliquot ID:

NA: Not Applicable

Method: EPA 3060A/EPA 7196A

Matrix: Other (Solid)

‡: Parameter not included in NELAC Scope of Analysis.

Description: A1-3521-3

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chromium VI U 03/12/21 W321C12A W321C12A JMK μg/kg 400 1.0 03/16/21

RSN: A00639-210317103347



Order: A00639
Page: 5 of 15
Date: 03/17/21

Client Identification: Applied Science & Technology,

Inc. - Brighton RTRR (10860)

Science & Technology, Sample Description: A1-3521-4

Chain of Custody: 192677

Collect Date: 03/05/21

Client Project No: 10860 Sample Matrix: Other (Solid) Collect Time: 10:35

Sample Comments:

Client Project Name:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample No:

Chromium, Hexavalent Aliquot ID: A00639-004 Matrix: Other (Solid)

Method: EPA 3060A/EPA 7196A Description: A1-3521-4

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chromium VI U 03/12/21 W321C12A W321C12A JMK μg/kg 400 1.0 03/16/21

RSN: A00639-210317103347



Order: A00639
Page: 6 of 15
Date: 03/17/21

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: A1-3521-5

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No:

10860

Sample Matrix:

Other (Solid)

Collect Time:

11:05

Sample Comments:

Definitions: Q: Q

Chromium, Hexavalent

1. Chromium VI

Q: Qualifier (see definitions at end of report)

Result

U F-

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: A00639-005

Description: A1-3521-5

Matrix: Other (Solid)

Parameter(s)

Method: EPA 3060A/EPA 7196A

Q Units

μg/kg

Reporting Limit

Dilution

P. Date P. Batch 03/12/21 W321C12A

Preparation

A. Date 03/16/21

A. Batch Init.
W321C12A JMK

Analysis

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: A00639 7 of 15 Page: Date: 03/17/21

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: A2-3521-1

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No:

10860

Sample Matrix:

Other (Solid)

Collect Time:

11:26

Sample Comments:

Definitions:

Chromium, Hexavalent

1. Chromium VI

Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Preparation

A00639-006 Aliquot ID:

Description: A2-3521-1

Matrix: Other (Solid)

Parameter(s)

Method: EPA 3060A/EPA 7196A

Result Q Units

μg/kg

750

Reporting Limit Dilution 400 1.0

P. Date 03/12/21

P. Batch W321C12A

A. Date A. Batch Init. 03/16/21

Analysis

W321C12A JMK

RSN: A00639-210317103347



Sample Description: A2-3521-2

Order: A00639 8 of 15 Page: Date: 03/17/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Units

Collect Date:

03/05/21

Client Project No: Sample Comments:

Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Collect Time:

12:15

Definitions:

NA: Not Applicable

Q

‡: Parameter not included in NELAC Scope of Analysis.

Method: EPA 3060A/EPA 7196A

Chromium, Hexavalent

A00639-007 Aliquot ID: Description: A2-3521-2

Matrix: Other (Solid)

Result

Reporting Limit Dilution

Preparation P. Date

P. Batch A. Date A. Batch Init.

Parameter(s) 1. Chromium VI

U μg/kg 400

1.0

03/12/21

W321C12A

03/16/21

W321C12A JMK

Analysis

RSN: A00639-210317103347



Order: A00639 9 of 15 Page: Date: 03/17/21

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: A3-3521-1

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No:

10860

Sample Matrix:

Other (Solid)

Aliquot ID:

Collect Time:

14:03

Analysis

A. Batch Init.

Sample Comments:

Definitions:

Chromium, Hexavalent

Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

A00639-008

Method: EPA 3060A/EPA 7196A

Description: A3-3521-1

Matrix: Other (Solid)

Preparation Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch 1. Chromium VI U μg/kg 400 1.0

03/12/21 W321C12A W321C12A JMK 03/16/21

A. Date

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: A00639 10 of 15 Page: Date: 03/17/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A3-3521-2

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No:

Sample Matrix:

Other (Solid)

Collect Time:

13:28

Sample Comments:

Definitions:

Method: EPA 3060A/EPA 7196A

Chromium, Hexavalent

Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

A00639-009

Aliquot ID:

Description: A3-3521-2

Matrix: Other (Solid)

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chromium VI U 03/12/21 W321C12A W321C12A JMK μg/kg 400 1.0 03/16/21

RSN: A00639-210317103347



Sample Description: A3-3521-3

Order: A00639 11 of 15 Page: Date: 03/17/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Chain of Custody:

192677

Client Project Name:

Method: EPA 3060A/EPA 7196A

RTRR (10860)

Sample No: Sample Matrix: Collect Date: Collect Time: 03/05/21 13:08

Sample Comments:

Client Project No:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

A00639-010 Chromium, Hexavalent Aliquot ID:

Other (Solid)

Description: A3-3521-3

Matrix: Other (Solid)

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chromium VI U 03/12/21 W321C12A W321C12A JMK μg/kg 400 1.0 03/16/21



Order: A00639 12 of 15 Page: Date: 03/17/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A3-3521-4

Chain of Custody:

194833

Client Project Name:

RTRR (10860)

Sample No:

μg/kg

Sample Matrix:

Collect Date:

03/05/21

Client Project No:

Other (Solid) Collect Time: 12:50

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Preparation

Chromium, Hexavalent Method: EPA 3060A/EPA 7196A

A00639-011 Aliquot ID:

Matrix: Other (Solid)

Description: A3-3521-4

Analysis

Parameter(s)

1. Chromium VI

Result Q Units

U

Reporting Limit Dilution 400 1.0

P. Date 03/12/21

P. Batch W321C12A

A. Date A. Batch Init. 03/16/21

W321C12A JMK



Order: A00639 13 of 15 Page: Date: 03/17/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A3-3521-5

Chain of Custody:

194833

Client Project Name:

RTRR (10860)

Sample No:

Sample Matrix:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Other (Solid)

Collect Time:

12:32

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Chromium, Hexavalent Method: EPA 3060A/EPA 7196A

Aliquot ID:

A00639-012

Matrix: Other (Solid)

Description: A3-3521-5

Preparation

A. Date

Analysis A. Batch Init.

Parameter(s)

1. Chromium VI

Result Q Units U μg/kg Reporting Limit Dilution 400

1.0

03/12/21

P. Date

P. Batch W321C12A

03/16/21

W321C12A JMK

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: A00639 14 of 15 Page: Date: 03/17/21

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: Dup-WMU31 Chain of Custody:

194833

Client Project Name:

RTRR (10860)

Sample No:

μg/kg

Sample Matrix:

Collect Date:

03/05/21

Client Project No:

10860

Other (Solid)

Collect Time:

NA

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Chromium, Hexavalent

1. Chromium VI

U

A00639-013 Aliquot ID: Description: Dup-WMU31 Matrix: Other (Solid)

Method: EPA 3060A/EPA 7196A

Parameter(s) Result Q Units

Reporting Limit 400

Dilution 1.0

P. Date P. Batch 03/12/21 W321C12A

Preparation

A. Date A. Batch Init. 03/16/21

Analysis

W321C12A JMK



Analytical Laboratory Report Laboratory Project Number: A00639

Order: A00639 Page: 15 of 15 Date: 03/17/21

Definitions/ Qualifiers:

- A: Spike recovery or precision unusable due to dilution.
- **B:** The analyte was detected in the associated method blank.
- E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J: The concentration is an estimated value.
- M: Modified Method
- **U:** The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

F- : Recovery from the spiked aliquot exceeds the lower control limit (matrix spike or matrix spike duplicate).

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)



Analytical Laboratory

1914 Holloway Drive

Holf, MI 48842 Phone: 517 699 0345

Fax: 517 699 0388

email: lab@fibertec.us

8660 S. Mackinaw Trail

Cadillac, MI 49601 Phone: 231 775 8368

Fax: 231 775 8584

Industrial Hygiene Services, Inc.

3125 Sovereign Drive

Suite 9B

Lansing, MI 48911 Phone: 517 999 6020

email: asbestos@fiberteclhs.com

Geoprobe

11766 E. Grand River Rd.

Brighton, MI 48116 Phone: 810 220 3300

Fax: 810 220 3311

Chain of Custody #

192677 PAGE_L of 22

						5	email. asse.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
Client N		ASTI	Environmental					PARAMETERS			Matrix Code		Deliverables
Contac	Person:	600	Oslosk.			S					S Soil GW Gr	ound Water	Level 2
Proiect	Name/ Number:		03.60 5.19			ow					A Air SW Sur	face Water	Level 3
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	RT	RR /	0slosky 10860	ODE		Gremium				삘		iste Water	Level 4
Email di	tribution list:	- 1, /	10060	FOR CODE)		1				AMP	P Wipe X Ott	ner: Specify	EDD
40	losk. D	.a.L. a.	and hoads a	ON NEW	ERS	2				HOLD SAMPLE		oncrete	<u> </u>
Quote#	and they C	2511-61	IV. COM Mayora & ash-en	IN- COCH DIAME	MATA	20				오		mder	
Purchas	e Order#		Client Sample Descriptor	SIX (SEI	# OF CONTAINERS	Hexavalent							
Date	Time	Sample #	Client Sample Descriptor	MA	# O	A					Remarks:		
3-5-8			Al-3521-1	X	2	X					Mold pending	further	instruction
1	950		A1-3521-2	1	1	1					after Hex	Chron	analysis "
	1013		A1-3521-3										7
	1035		Al-3521-4										
	ho5		A1-3521-5		1								
	1176		AZ-3521-1		T							Re	eceived By Lab
	1215		AZ-35Z1-2		T								MAR 1 0 2021
	1403		43-3521-1		T	171							MAN 10 2021
	1328		A3-3521-2									Jnj	itials; CL
V	1308		A3-3521-3	V		V					1		
Comme	nts:					3			77				
Sample	d/Relinquished E	Y: ///	7-10/1	Date			600	Received By	7 16	1-	L Cdd Sto	ray e	
Relinqu	shad By:		went -	Date			600	Received By	1		///	7	//
Relinqu	1571		old, Storage		1 707	Code I		Registed in	LA	7	Shill	27	10/21 8:5
Relinqu	ined by:			Date 3/		1/1	317	Regelved by	Laboratory.	6	2	ز	7
	MAN	at Tur	naround time ALL RESULTS WILL BE SENT BY THE EL	ND OF THE B	ISINI	SS DAY					LAB U	SE ONLY	
	bus. day	2 k	ous. days3 bus. days		4	bus. days			Fiberte	c pro	oject number:		
/											A00639	ſ	Received
A	i-7 bus. days (sto	ındard)	Other (specify time/date requirement):					Tempe	ratur	re upon receipt at Lab:		On Ice

Please see back for terms and conditions



5-7 bus, days (standard)

Analytical Laboratory

Other (specify time/date requirement):

1914 Holloway Drive

8660 S. Mackinaw Trail

Holf, MI 48842 Phone: 517 699 0345 Cadillac, MI 49601 Phone: 231 775 8368 Fax: 231 775 8584

Fax: 517 699 0388 email: lab@fibertec.us Geoprobe

11766 E. Grand River Rd.

Brighton, MI 48116

Phone: 810 220 3300 Fax: 810 220 3311

Chain of Custody #

194833 PAGE Z of Z

ASTI Environmental Matrix Code Deliverables **PARAMETERS** Client Name: S Soil GW Ground Water Level 2 Contact Person: Level 3 Surface Water Project Name/ Number: OOI ww Waste Water Level 4 HOLD SAMPLE EDD Email distribution list: P Wipe x Other: Specify Vexavalent goslosky (# OF CONTAINERS x = concrete pander Quote# Purchase Order# Remarks: Sample # Client Sample Descriptor Date Time 2 pending further instruction 1250 A3-3521-4 3-5-21 1232 A3-3521-5 Dup-WMU31 Received By Lah Comments: Date/ Time Received By: Sampled/Relinquished By: Storage e 3/5/4 Date/Time 1600 Received B Relinquished by: Date/Time Relinquished Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY LAB USE ONLY Fibertec project number: bus, day 2 bus, days _3 bus. days ___4 bus. days AOOG 39
Temperature upon receipt at Lab: Received On Ice

Please see back for terms and conditions



Monday, March 29, 2021

Fibertec Project Number: A00639 Supplemental Project Identification: RTRR (10860) /10860

Submittal Date: 03/10/2021

Mr. Greg Oslosky
Applied Science & Technology, Inc. - Brighton
10448 Citation Dr.
Suite 100
Brighton, MI 48116

Dear Mr. Oslosky,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Cheri Hanson at 1:29 PM, Mar 29, 2021

Cher Hanson

For Daryl P. Strandbergh Laboratory Director

Enclosures

DCSID: G-610.19 (10/01/19)



Order: A00639 Page: 2 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: A1-3521-1 Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Method: EPA 1311

Definitions: Q: Qualifier (see definitions at end of report)

10860

Sample Matrix:

Other (Solid)

Collect Time:

09:28

Toxicity Characteristic Leaching Procedure (TCLP)

Aliquot ID:

A00639-001

Matrix: Other (Solid)

Description: A1-3521-1

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. TCLP Date 3/23/2021 03/23/21 NA NA 1.0 NA NA NA CJA



Other (Solid)

Order: A00639 Page: 3 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A1-3521-1

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Sample Matrix:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Collect Time:

09:28

TCLP Metals by ICP/MS Aliquot ID: A00639-001A Matrix: TCLP Extract

Method: EPA 3005A (Total Recoverable)/EPA 6020A

Description: A1-3521-1

					Prepa	ration	A	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Arsenic	U	mg/L	1.0	20	03/24/21	PT21C24A	03/24/21	T421C24A CJA



Order: A00639 Page: 4 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

A1-3521-2 Sample Description:

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Method: EPA 1311

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Collect Time:

09:50

Toxicity Characteristic Leaching Procedure (TCLP)

Aliquot ID:

A00639-002

Matrix: Other (Solid)

Description: A1-3521-2

						Prepar	ation	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. TCLP Date	3/23/2021		NA	NA	1.0	NA	NA	03/23/21	NA	CJA



Order: A00639
Page: 5 of 28
Date: 03/29/21

Client Identification: Applied Science & Technology,

10860

Inc. - Brighton

Sample Description: A1-3521-2

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Method: EPA 3005A (Total Recoverable)/EPA 6020A

Sample Matrix:

Other (Solid)

Collect Time:

09:50

TCLP Metals by ICP/MS

Aliquot ID:

A00639-002A

Matrix: TCLP Extract

Description: A1-3521-2

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1 Aroania				1.0	20	02/24/24	DT04C04A	02/24/24	T404C04A	CIA



Order: A00639
Page: 6 of 28
Date: 03/29/21

Client Identification: Applied Science & Technology,

10860

Inc. - Brighton

Sample Description: A1-3521-3

Chain of Custody:

192677

Client Project Name: R

RTRR (10860)

Sample No:
Sample Matrix:

Collect Date:

03/05/21

Client Project No:

Sample Comments:

Method: EPA 1311

Definitions: Q: Qualifier (see definitions at end of report)

Collect Time:

10:13

Toxicity Characteristic Leaching Procedure (TCLP)

Aliquot ID:

Other (Solid)

A00639-003

Matrix: Other (Solid)

Description: A1-3521-3

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. TCLP Date 3/23/2021 03/23/21 NA NA 1.0 NA NA NA CJA



Order: A00639 Page: 7 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A1-3521-3

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Collect Time:

10:13

TCLP Metals by ICP/MS Aliquot ID: A00639-003A Matrix: TCLP Extract

Method: EPA 3005A (Total Recoverable)/EPA 6020A

Description: A1-3521-3

						ration	Analysis		
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.	
1. Arsenic	U	mg/L	1.0	20	03/24/21	PT21C24A	03/24/21	T421C24A CJA	
2. Selenium	U	mg/L	0.20	20	03/24/21	PT21C24A	03/24/21	T421C24A CJA	



Order: A00639 Page: 8 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: A1-3521-4

Chain of Custody:

192677

Client Project Name:

Client Project No:

Definitions:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Sample Comments:

Sample Matrix:

Other (Solid)

Collect Time:

10:35

10860

Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Other (Solid)

Toxicity Characteristic Leaching Procedure (TCLP) Method: EPA 1311

Description: A1-3521-4

Aliquot ID:

A00639-004

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. TCLP Date	3/23/2021		NA	NA	1.0	NA	NA	03/23/21	NA	CJA



Order: A00639 Page: 9 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A1-3521-4 Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Units

Collect Date:

03/05/21

Client Project No: Sample Comments:

Parameter(s)

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Collect Time:

10:35

TCLP Metals by ICP/MS Aliquot ID: A00639-004A

Q

Result

Method: EPA 3005A (Total Recoverable)/EPA 6020A

Description: A1-3521-4

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: TCLP Extract

Preparation Analysis Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

T421C24A CJA U 03/24/21 PT21C24A 1. Arsenic mg/L 1.0 20 03/24/21

RSN: A00639-210329132438



Order: A00639 Page: 10 of 28 Date: 03/29/21

Client Identification: Applied Science & Technology,

10860

Inc. - Brighton

Sample Description: A1-3521-5

Chain of Custody:

192677

Client Project Name: R

RTRR (10860)

Sample No:

NA

Collect Date:

03/05/21

Client Project No:

Sample Comments:

1. TCLP Date

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Aliquot ID:

Collect Time:

11:05

Toxicity Characteristic Leaching Procedure (TCLP)

A00639-005

Matrix: Other (Solid)

Description: A1-3521-5

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Method: EPA 1311

Parameter(s) Result Q Units

3/23/2021

Reporting Limit Dilution

NA

1.0

Preparation
P. Date P.
NA

P. Batch A. I

A. Date A. Batch 03/23/21 NA

Analysis

Init.

CJA

1914 Holloway Drive 11766 E Grand River 8660 S Madkinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: A00639 Page: 11 of 28 Date: 03/29/21

Client Identification: Applied Science & Technology,

10860

Inc. - Brighton

Sample Description: A1-3521-5

Chain of Custody:

192677

Client Project Name:

Definitions:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No: 1

Sample Comments:

Sample Matrix:

Other (Solid)

Collect Time:

11:05

TCLP Metals by ICP/MS
Method: EPA 3005A (Total Recoverable)/EPA 6020A

Q: Qualifier (see definitions at end of report)

Aliquot ID:

A00639-005A

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: TCLP Extract

Description: A1-3521-5

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. T421C24A CJA U 03/24/21 PT21C24A 1. Arsenic mg/L 1.0 20 03/24/21



Order: A00639 Page: 12 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

A2-3521-1 Sample Description:

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Sample Matrix:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Other (Solid)

Collect Time:

11:26

Toxicity Characteristic Leaching Procedure (TCLP) Aliquot ID: A00639-006

Method: EPA 1311

Description: A2-3521-1

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Other (Solid)

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. TCLP Date	3/23/2021		NA	NA	1.0	NA	NA	03/23/21	NA	CJA



Order: A00639 Page: 13 of 28 Date: 03/29/21

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: A2-3521-1

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Method: EPA 3005A (Total Recoverable)/EPA 6020A

10860

Sample Matrix:

Other (Solid)

Collect Time:

11:26

TCLP Metals by ICP/MS

Aliquot ID:

A00639-006A

Matrix: TCLP Extract

Description: A2-3521-1

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. T421C24A CJA U 03/24/21 PT21C24A 1. Arsenic mg/L 1.0 20 03/24/21



Order: A00639 Page: 14 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

Toxicity Characteristic Leaching Procedure (TCLP)

Inc. - Brighton

Sample Description: A2-3521-2 Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No:

10860

Sample Matrix:

Other (Solid)

Aliquot ID:

Collect Time:

12:15

Sample Comments:

Method: EPA 1311

Definitions:

Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Description: A2-3521-2

A00639-007

Matrix: Other (Solid)

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. TCLP Date 3/23/2021 03/23/21 NA NA 1.0 NA NA NA CJA



Order: A00639 Page: 15 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A2-3521-2 Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Collect Time: 12:15

TCLP Metals by ICP/MS

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: A00639-007A Matrix: TCLP Extract

Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: A2-3521-2

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch In	nit.
1. Arsenic	U		mg/L	1.0	20	03/24/21	PT21C24A	03/24/21	T421C24A C	CJA



Order: A00639 Page: 16 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

A3-3521-1 Sample Description:

Chain of Custody:

192677

Client Project Name: Client Project No:

Method: EPA 1311

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Collect Time:

14:03

Toxicity Characteristic Leaching Procedure (TCLP)

Aliquot ID:

A00639-008

Matrix: Other (Solid)

Description: A3-3521-1

						Prepar	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. TCLP Date	3/23/2021		NA	NA	1.0	NA	NA	03/23/21	NA	CJA



Order: A00639 Page: 17 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A3-3521-1 Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Sample Matrix:

Collect Date:

03/05/21

Client Project No:

Definitions:

Sample Comments:

Q: Qualifier (see definitions at end of report)

Other (Solid)

Collect Time:

14:03

TCLP Metals by ICP/MS Aliquot ID: A00639-008A

Method: EPA 3005A (Total Recoverable)/EPA 6020A

Description: A3-3521-1

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: TCLP Extract

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. T421C24A CJA U 03/24/21 PT21C24A 1. Arsenic mg/L 1.0 20 03/24/21



Order: A00639 Page: 18 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

A3-3521-2 Sample Description:

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Method: EPA 1311

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Collect Time:

13:28

Toxicity Characteristic Leaching Procedure (TCLP)

Aliquot ID:

A00639-009

Matrix: Other (Solid)

Description: A3-3521-2

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. TCLP Date	3/23/2021		NA	NA	1.0	NA	NA	03/23/21	NA	CJA



Order: A00639 Page: 19 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A3-3521-2 Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No: Sample Matrix: Collect Date:

03/05/21

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) Other (Solid)

Collect Time:

13:28

TCLP Metals by ICP/MS

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: A00639-009A Matrix: TCLP Extract

Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: A3-3521-2

							ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.	
1. Arsenic	U		mg/L	1.0	20	03/24/21	PT21C24A	03/24/21	T421C24A CJA	



Order: A00639 Page: 20 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

A3-3521-3 Sample Description:

Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Collect Time:

13:08

Toxicity Characteristic Leaching Procedure (TCLP) A00639-010

Method: EPA 1311

Aliquot ID:

Matrix: Other (Solid)

Description: A3-3521-3

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

	Preparation					ration	A	nalysis	
Parameter(s)	Result Q) Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. TCLP Date	3/23/2021	NA	NA	1.0	NA	NA	03/23/21	NA	CJA



Order: A00639 Page: 21 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A3-3521-3 Chain of Custody:

192677

Client Project Name:

RTRR (10860)

Sample No: Sample Matrix: Collect Date:

03/05/21

Client Project No: Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Other (Solid)

Collect Time:

13:08

TCLP Metals by ICP/MS Aliquot ID: A00639-010A

Method: EPA 3005A (Total Recoverable)/EPA 6020A

Description: A3-3521-3

Matrix: TCLP Extract

						Prepa	ration	Α	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	U		mg/L	1.0	20	03/24/21	PT21C24A	03/24/21	T421C24A	CJA



Order: A00639 Page: 22 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A3-3521-4

Chain of Custody:

194833

Client Project Name:

Client Project No:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Other (Solid)

Collect Time:

12:50

Toxicity Characteristic Leaching Procedure (TCLP)

Aliquot ID:

A00639-011

Matrix: Other (Solid)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Method: EPA 1311		Description: A3-3521-4										
						Prepa	ration	Ai	nalysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.		
1 TCI P Date	3/23/2021		NΔ	NΔ	1.0	NΔ	NΔ	03/23/21	NΔ	CIA		



Order: A00639 Page: 23 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Sample Description: A3-3521-4 Chain of Custody:

194833

Client Project Name:

RTRR (10860)

Sample No: Sample Matrix: Collect Date:

03/05/21

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Other (Solid)

Aliquot ID:

Collect Time:

12:50

TCLP Metals by ICP/MS

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

A00639-011A

Matrix: TCLP Extract

Method: EPA 3005A (Total Recoverable)/EPA 6020A

Description: A3-3521-4

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. T421C24A CJA U 03/24/21 PT21C24A 1. Arsenic mg/L 1.0 20 03/24/21



Order: A00639 Page: 24 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: A3-3521-5 Chain of Custody:

194833

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No: Sample Comments:

Method: EPA 1311

Definitions: Q: Qualifier (see definitions at end of report)

10860

Sample Matrix:

Other (Solid)

Collect Time:

12:32

Toxicity Characteristic Leaching Procedure (TCLP)

Aliquot ID:

A00639-012

Matrix: Other (Solid)

Description: A3-3521-5

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

						Prepai	ation	Aı	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1.TCLP Date	3/23/2021		NA	NA	1.0	NA	NA	03/23/21	NA	CJA



Order: A00639 Page: 25 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: A3-3521-5 Chain of Custody:

194833

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No:

10860

Sample Matrix:

Other (Solid)

Collect Time:

12:32

Sample Comments:

Definitions:

TCLP Metals by ICP/MS

Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: A00639-012A Matrix: TCLP Extract

Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: A3-3521-5

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. T421C24A CJA U 03/24/21 PT21C24A 1. Arsenic mg/L 1.0 20 03/24/21



Order: A00639 Page: 26 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

10860

Inc. - Brighton

Dup-WMU31 Sample Description:

Chain of Custody:

194833

Client Project Name:

RTRR (10860)

Sample No:

Sample Matrix:

Collect Date:

03/05/21

Client Project No:

Method: EPA 1311

Definitions:

Sample Comments:

Q: Qualifier (see definitions at end of report)

Other (Solid)

Collect Time:

NA

Toxicity Characteristic Leaching Procedure (TCLP)

Aliquot ID:

A00639-013

Matrix: Other (Solid)

Description: Dup-WMU31

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

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Parameter(s)	Result (Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. TCLP Date	3/23/2021	NA	NA	1.0	NA	NA	03/23/21	NA	CJA



Order: A00639 Page: 27 of 28 Date: 03/29/21

Applied Science & Technology, Client Identification:

Inc. - Brighton

Dup-WMU31 Sample Description:

Chain of Custody:

194833

Client Project Name:

RTRR (10860)

Sample No:

Collect Date:

03/05/21

Client Project No:

10860

Sample Matrix:

Other (Solid)

Collect Time: NA

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

TCLP Metals by ICP/MS Aliquot ID: A00639-013A Matrix: TCLP Extract

Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: Dup-WMU31

							Prepa	ration	Α	nalysis
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
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Analytical Laboratory Report Laboratory Project Number: A00639

Order: A00639 Page: 28 of 28 Date: 03/29/21

Definitions/ Qualifiers:

- A: Spike recovery or precision unusable due to dilution.
- **B:** The analyte was detected in the associated method blank.
- E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J: The concentration is an estimated value.
- M: Modified Method
- **U:** The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)



Analytical Laboratory

1914 Holloway Drive Holf, MI 48842

Phone: 517 699 0345 Fax: 517 699 0388 email: lab@fibertec.us

8660 S. Mackinaw Trail Phone: 231 775 8368 Revision Co.

Industrial Hygiene Services, Inc. 3125 Sovereign Drive

Sulte 9B Lansing, Mi 48911 Phone: 517 999 6020

email: asbestos@fiberteclhs.com

Geoprobe

Fax: 810 220 3311

11766 E. Grand River Rd. Brighton, MI 48116 Phone: 810 220 3300

192677 PAGE_L of 2

Chain of Custody #

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Analytical Laboratory

1914 Holloway Drive Holf, MI 48842

Phone: 517 699 0345 Fax: 517 699 0388 emall: lab@flbertec.us 8660 S. Mackinaw Trall Cadillac, MI 49601 Phone: 231 775 8368 Fax: 231 775 8584

Geoprobe

11766 E. Grand River Rd. Brighton, MI 48116 Phone: 810 220 3300

Fax: 810 220 3311

Chain of Custody #

194833 PAGE **2** of **2**

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- PHASE I ESA AND ENVIRONMENTAL DUE DILIGENCE ASSESSMENTS
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- STORAGE TANK COMPLIANCE AND CLOSURE
- THREATENED AND ENDANGERED SPECIES SURVEYS
- WATERSHED AND STORMWATER MANAGEMENT PROGRAMS
- WETLAND DELINEATION, PERMITTING, MITIGATION AND BANKING



Attachment H

Stormwater	Management	Options	Report
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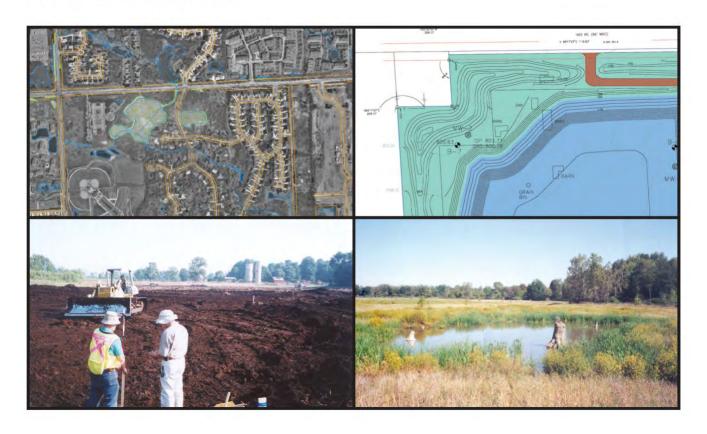
Stormwater Options Report

RTRR Property 18251 West Jefferson Riverview, Michigan

Riverview-Trenton Railroad Company

March 3, 2021

ASTI Environmental





Stormwater Options Report RTRR Property 18251 West Jefferson Riverview, Michigan

March 3, 2021

Report Prepared For:

Riverview-Trenton Railroad Company 12225 Stephens Road Warren, Michigan 48089

Report Prepared By:

ASTI Environmental 10448 Citation Drive, Suite 100 Brighton, Michigan 48116 810-225-2800

ASTI Project No. 10860

wee Barkon

Report Prepared by: Report Reviewed by:

Greg S. Oslosky Bruce Bawkon

Director – Grand Rapids Office Director – Industrial Compliance

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Attachment A Site Topographic Maps



1.0 INTRODUCTION

ASTI Environmental (ASTI) has prepared this Storm Water Report for the approximately 76.2 acre portion of the former McLouth Steel site commonly known as the Riverview-Trenton Railroad ("RTRR") Property (Parcel Numbers: 51009030001000, 54001010082300, and 54001990006704) located at 18251 West Jefferson Avenue in Riverview and Trenton, Wayne County, Michigan ("Subject Property"). Additionally, a portion of Parcel Number 54001990007701 lies within the Subject Property. A Site Location Map is provided as Figure 1 and the Subject Property is depicted on Figure 2, including each parcel.

2.0 BACKGROUND

The McLouth Steel Company (McLouth Steel) operated a steel manufacturing facility on the property south of the Subject Property and acquired the Subject Property between 1956 and 1961. McLouth Steel used the Subject Property for storage of raw materials, waste, and product to support steel production between the time they acquired the property until about 1975. A large slag processing operation operated by E. C. Levy Company was also located on the Subject Property. After about 1975, production decreased at the McLouth Facility and McLouth Steel ceased operations in April of 1996 after filing for Chapter 11 bankruptcy protection in September of 1995. Hamlin Holdings, Inc. acquired the Subject Property in July of 1996. The Detroit Steel Company ("DSC") obtained title for the Subject Property in August of 1996 and used it for storage and conducted removal activities. DSC resumed pickling of strip steel at the McLouth Facility in July 1998. Those operations closed in 2005. On June 2, 2000, Crown Enterprises purchased the Subject Property but did not use it for any activities and conveyed the property to RTRR in November of 2000. All structures have been removed from the Subject Property and only two concrete pads remain.

McLouth Steel operated stormwater and wastewater discharges under a National Pollution Discharge Elimination System ("NPDES") permit during operations as a steel mill, but there is no evidence that a stormwater collection system or a point source discharge exists for the Subject Property.

3.0 OBJECTIVE

ASTI prepared the Stormwater Management Work Plan, dated June 28, 2019 ("Work Plan") to implement portions of the Statement of Work ("SOW") described in Attachment A of the Corrective Action and Consent Order ("CACO") dated November 1, 2018 for the Subject Property. The purpose of the Stormwater Management Work Plan was to provide an outline for preparing a feasibility analysis of stormwater management options to eliminate sheet flow to the Trenton Channel and Monguagon Creek (Figure 2). Unless otherwise provided herein, all terms used in this Stormwater Options Report are defined as provided in the CACO. The purpose of this report is to provide details for potential stormwater management options. Stormwater management options for the Subject Property include:

- Grade the Subject Property to collect stormwater. Grading would require future site development plans (future development is undetermined at this time),
- On-site retention,
- Discharge under a general permit,
- Discharge to the Trenton Channel under a National Pollutant Discharge Elimination System (NPDES), or
- Discharge to the City of Wyandotte or the City of Trenton Publicly Owned Treatment System (POTW).



This Stormwater Management Options Report is based on information from available site maps, topographical map, and ALTA survey, as well as site observations made in the field during site visits, to determine if sheet flow runoff occurs. Stormwater runoff sampling was not included as part of this evaluation.

4.0 STORMWATER MANAGEMENT OPTIONS

The following sections provide the potential stormwater management options and a description of each option.

4.1 Property Topography and On-site Retention

The site topographic plan in Attachment A shows the drainage pattern and storm water flow direction is depicted with arrows. Catch basins, constructed and natural drainage channels are not located on the property. Storm water is not retained after major storm events. The surface consists a sand and gravel layer which, was logged as the surface layer in many of the locations for the groundwater monitoring wells installed in October of 2019. Based on the topographic map, the east side of the site is sloped toward the Trenton Channel and the west side of the site is sloped toward the west. Construction of a berm along the Trenton Channel would assure that storm water does not leave the site and enter the Trenton Channel or Monguagon Creek.

Infiltration tests should be performed to determine the quantity of storm water that will be retained and the quantity of storm water that will infiltrate. The infiltration rate will also affect the height of the berm. Typically, the Standard Test Method for Infiltration of Soils in Field Using Double-Ring Infiltrometer (*ASTM D 3385-03*) is performed to determine infiltrations rates. The test is performed at the location and elevation of the bottom of the proposed detention pond.

4.2 Discharge Under General Permit

The Subject Property does not have a point source discharge, drainage channel or storm water discharge pipe which drains storm water from the Subject Property. A regional discharge pipe is located near the bank of the Trenton Channel which discharges storm water from West Jefferson Road and the area west of the Subject Property. The discharge pipe was not inspected during this evaluation. Discharge of non-contact storm water from a site does not require an NPDES permit unless the site is subject to the following rule contained in Part 21 Wastewater Discharge Permits:

Rule 323.2104(u)"Storm water discharge associated with industrial activity" means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the national permits program under 40 C.F.R. §122.3 and §122.27 (2000). For the categories of industries identified in this subdivision, the term includes, but is not limited to, storm water discharges from all of the following.

(xi) Areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water.

If surface water is discharged from the Subject Property after development of the Subject Property, storm water samples should be collected and sent to an analytical laboratory for characterization to determine if a permit is required.



Discharge to the Trenton Channel Under a National Pollutant Discharge Elimination System (NPDES)

If, after development, a discharge of surface water occurs, storm water sample collection and analysis would be required. The storm water analysis would be based on what could reasonably be expected to be present based on historical use and current surface material. The permit criteria for discharge are based on the Water Quality Based Standards. The discharge will be compared to the Part 4 Water Quality Standards (Rule 323.1041 to R 323.1117) and the Part 8 Water Quality-Based Effluent Limit Development for Toxic Substances (Rule 323.1201 to 323.1221).

4.4 Discharge to the City of Wyandotte or the City of Trenton Publicly Owned Treatment System (POTW)

Discharge to the City of Wyandotte or the City of Trenton Publicly Owned Treatment System (POTW) is available if the storm water meets the pretreatment criteria for the POTW. Currently, storm water collection for offsite disposal is not available, there are no collection or storage structures. Construction of a berm along the Trenton Channel could create a storm water retention area. Conveyance of detained storm water to the POTW would require pumps, an onsite manhole and a new connection to a manhole in the existing wastewater collection system.

5.0 CONCLUSIONS

4.3

This Storm Water Options Report provides a summary of potential options to manage stormwater runoff at the Subject Property. Future development plans have not been completed at the time of this submittal. Stormwater management will depend on future use of the Subject Property and site design. The options presented above will be addressed during redevelopment planning to provide protection of stormwater runoff to the Trenton Channel and the Monguagon Creek.

6.0 RCRA CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

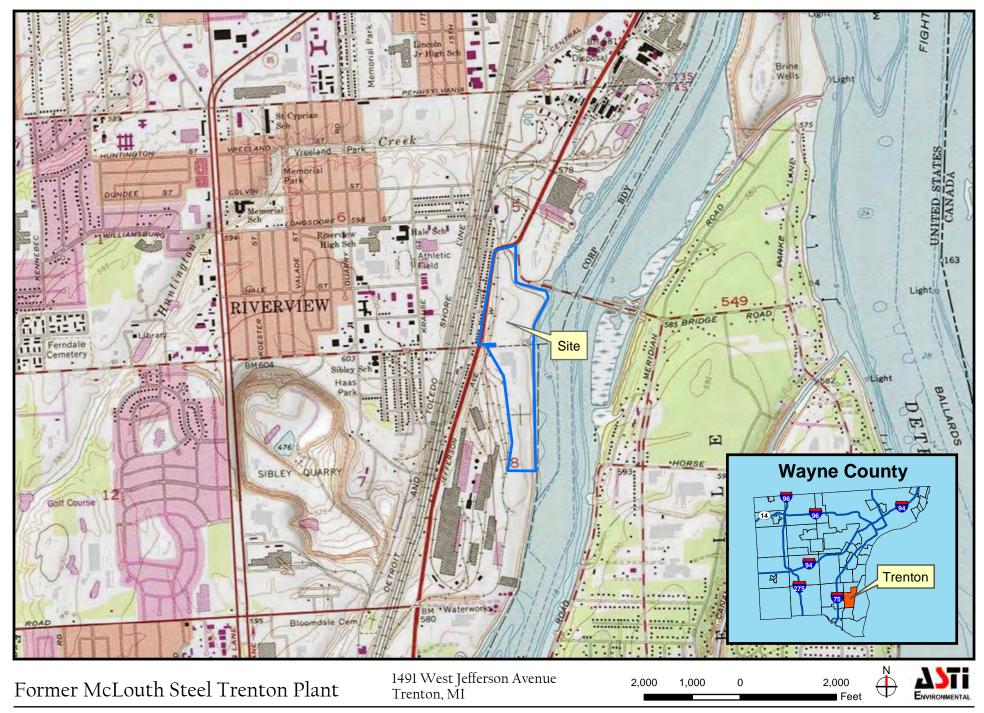
Greg S. Oslosky, P.G. Director – Grand Rapids

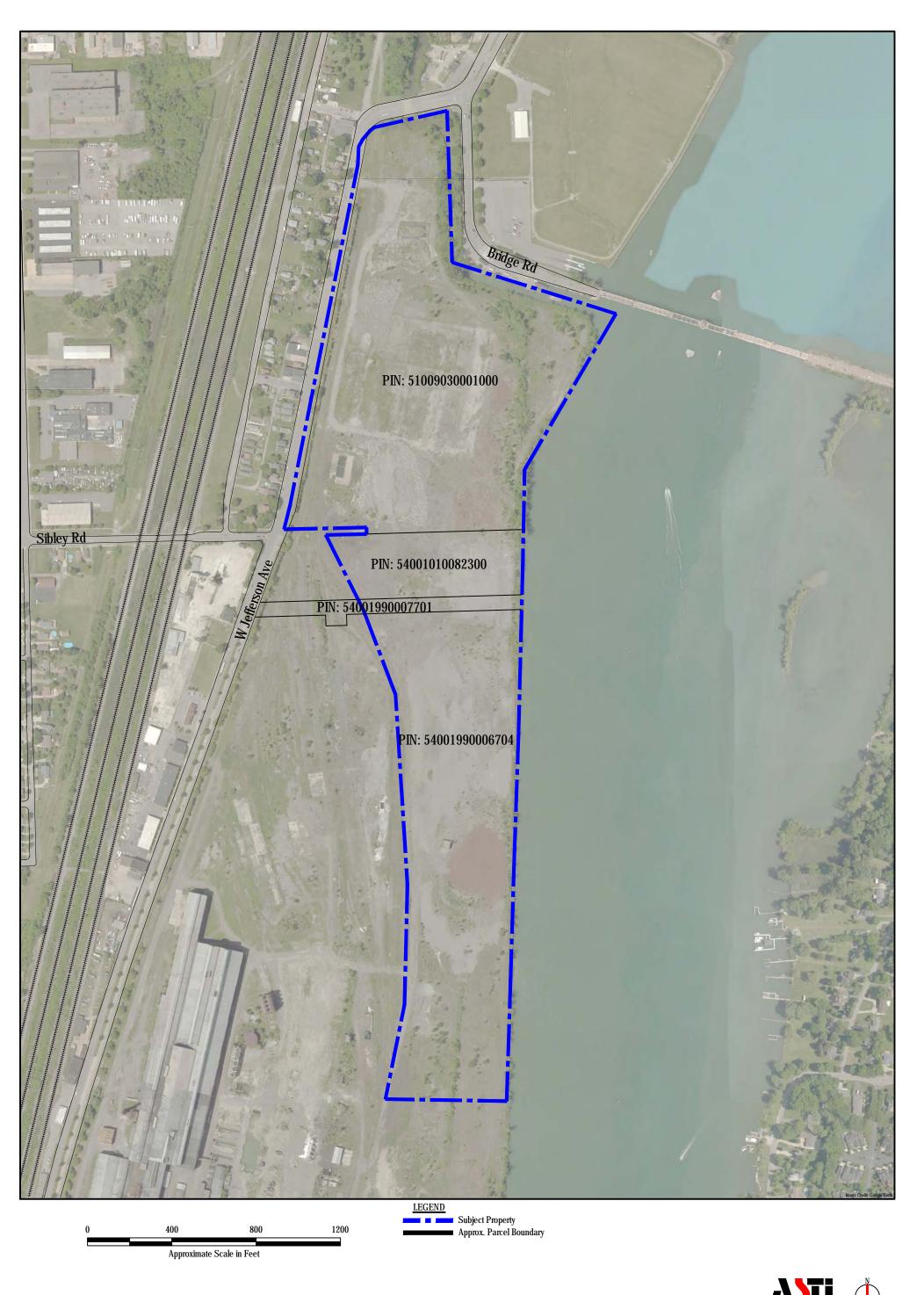


Figures

Figure 1 - Site Location Map Figure 2 - Site Features Map



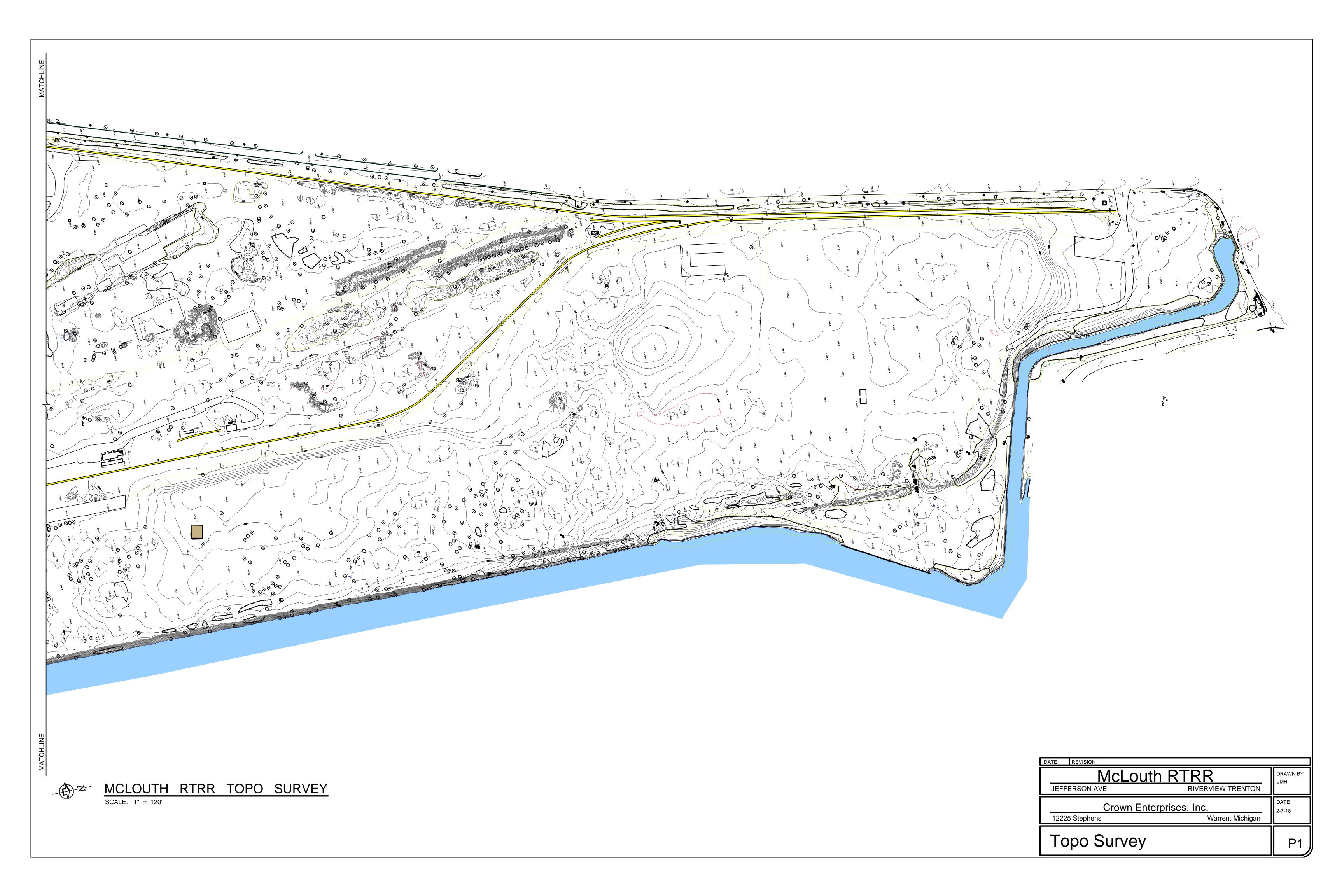


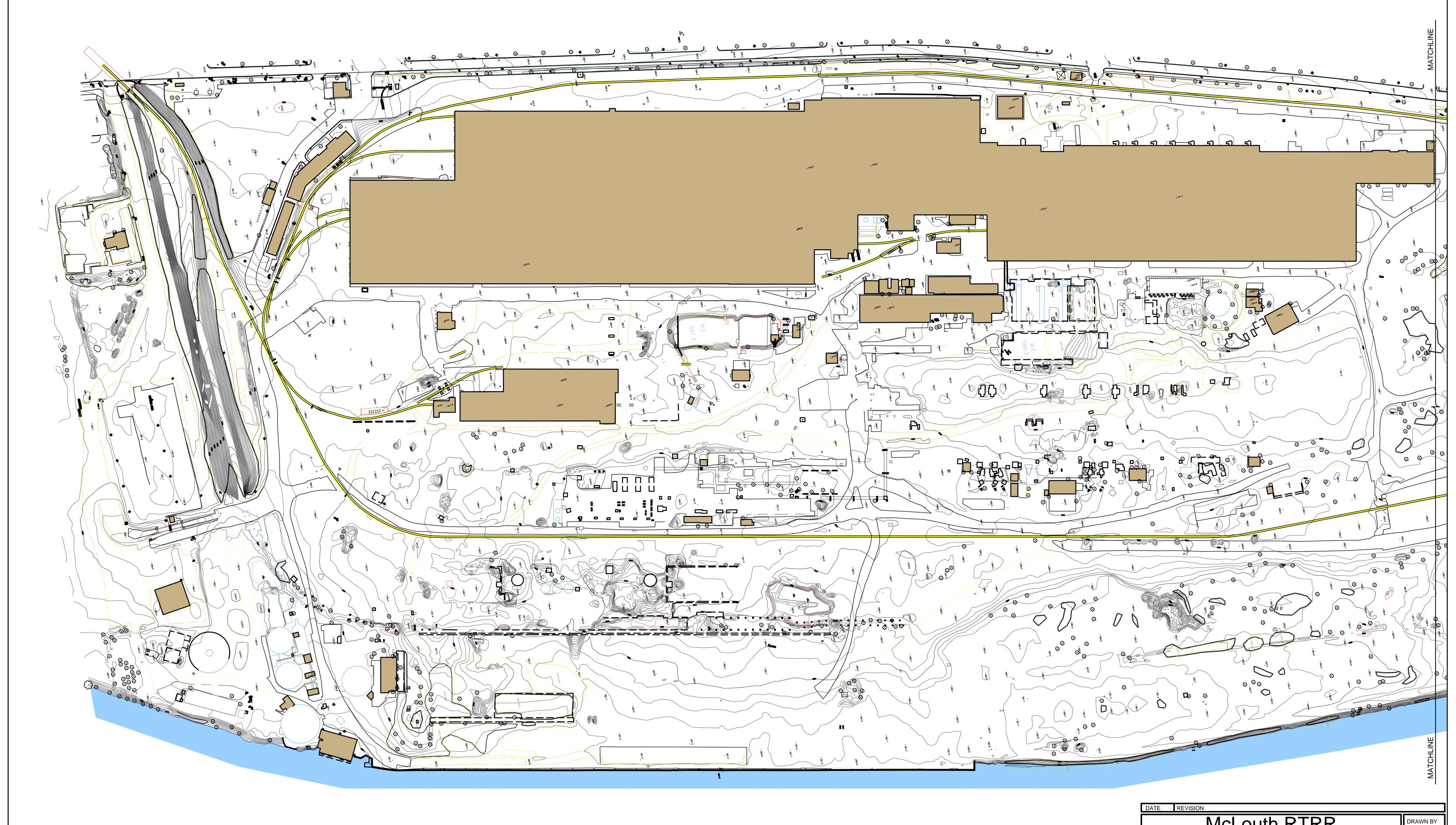


Attachment A

Topographic Survey North Topographic Survey South







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JEFF	McLouth RTRR ERSON AVE RIVERVIEW TRENTON	DRAWN BY JMH
1222	Crown Enterprises, Inc. 5 Stephens Warren, Michigan	DATE 2-7-18
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- WATERSHED AND STORMWATER MANAGEMENT PROGRAMS
- WETLAND DELINEATION, PERMITTING, MITIGATION AND BANKING



Attachment I

Groundwater Investigation Report

Groundwater Investigation Report

RTRR Property 18251 West Jefferson Riverview, Michigan

Riverview-Trenton Railroad Company

April 12, 2021

ASTI ENVIRONMENTAL





Groundwater Investigation Report

RTRR Property 18251 West Jefferson Riverview, Michigan

April 12, 2021

Prepared For:

Riverview-Trenton Railroad Company 12225 Stephens Road Warren, Michigan 48089

Prepared By:

ASTI Environmental 10448 Citation Drive, Suite 100 Brighton, Michigan 48116 (810) 225-2800

ASTI Project No. 10860

Report Prepared by: Report Reviewed by:

Greg S. Oslosky, P.G.

Director - Grand Rapids

Allison J. Rogowski, EP **Environmental Scientist**



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- 5 Shallow Groundwater Elevation Contour Map July 7, 2020
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- 6 Representative Groundwater Concentrations Chemicals Exceeding the GSIP
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- B August 4, 2020 Slug Test Files
- C Laboratory Analytical Reports and Chain-of-Custody Forms
- D ProUCL Output Files



1. INTRODUCTION

In accordance with the Corrective Action Consent Order ("CACO") dated November 1, 2018 between the Riverview-Trenton Rail Road Company ("RTRR") and the Michigan Department of Environment, Great Lakes, and Energy ("EGLE"), ASTI Environmental ("ASTI") conducted a groundwater investigation at the property located at 18251 West Jefferson Avenue in the City of Riverview, Wayne County, Michigan ("Subject Property"). The portion of the Subject Property which lies south of Sibley Road, is located in the City of Trenton, Michigan. The 75.8-acre Subject Property lies west of the Trenton Channel, south of the Grosse Ile Toll Bridge and Monguagon Creek, east of railroad tracks, West Jefferson Avenue, and the Sibley Quarry, and north of the Former McLouth Steel Facility. Figure 1 provides a Site Location Map and Figure 2 provides a Site Features Map for the Subject Property.

The Subject Property is surrounded by a fence on the north, west, and south. The Subject Property remains unused and no structures exist. Overhead power lines are present, but power has been disconnected. The only known underground utility on the Subject Property is the regional storm drain which runs from Sibley Avenue, east below the Subject Property and daylights at the Trenton Channel. The Subject Property is unpaved except for a parking lot (approximately 0.4 acres) on the northern portion and asphalt millings comprise roadways through the Subject Property.

The investigation was completed in accordance with the Statement of Work included as Attachment A of the CACO for the Subject Property and with the Work Plan – Groundwater Investigation prepared by ASTI dated June 28, 2019 ("Work Plan").

The CACO Statement of Work for the groundwater investigation included the following tasks:

- 1. An evaluation of groundwater flow direction and hydrogeologic conductivity across the Subject Property,
- 2. An evaluation of groundwater impacts beneath the Subject Property, including an assessment of the nature of any off-site sources and an assessment of the nature and extent of groundwater impacts at the Subject Property, and
- 3. A determination of groundwater flow (including volume and contaminant composition) from the Subject Property to the Detroit River and Monguagon Creek.

EGLE provided approval of the Work Plan in a letter dated July 29, 2019.

2. BACKGROUND

2.1. Site History

The Subject Property originally consisted of wetland and open water with some uplands in the northwestern portion of the property. The Monguagon Creek formerly bisected the property; flowing north to south and emptied into the Trenton Channel of the Detroit River at about Sibley Road. By 1952, much of the Subject Property had been filled to the current bank of the Trenton Channel but open water remained in the original Monguagon Creek Channel. By 1954, the mouth of the Monguagon Creek had been enlarged for docking and at least five above ground storage tanks ("ASTs") were located to the north of the mouth (on the Subject Property). The ASTs were associated with a former bulk oil storage facility located on the Subject Property. By 1964, the original Monguagon Creek channel had been filled and the creek was redirected along the northern extent of the Subject Property and no open water



remained on the Subject Property¹. Figure 2 - Site Features Map shows the locations of these features.

The McLouth Steel Company ("McLouth Steel") operated a steel manufacturing facility on the property south of the Subject Property and acquired the Subject Property between 1956 and 1961. McLouth Steel used the Subject Property for storage of raw materials, waste, and product to support steel production between the time they acquired the property until about 1975. A large slag processing operation operated by E.C. Levy Company was also located on the Subject Property. After about 1975, production decreased at the McLouth Facility and McLouth Steel ceased operations in April of 1996 after filing for Chapter 11 bankruptcy protection in September of 1995. Hamlin Holdings, Inc. acquired the Subject Property in July of 1996. The Detroit Steel Company ("DSC") obtained title for the Subject Property in August of 1996 and used it for storage and conducted removal activities. DSC resumed pickling of strip steel at the McLouth Facility in July 1998, but those operations closed in 2005. On June 2, 2000, Crown Enterprises purchased the Subject Property and used it for container storage. Crown Enterprises conveyed the property to RTRR in November of 2000. All structures have been removed from the Subject Property and only two concrete pads remain.

2.2. Waste Management Units

In connection with a Consent Order issued by the Michigan Department of Environmental Quality ("MDEQ", now EGLE) to DSC in 1999, MDEQ identified Waste Management Units ("WMU") on the Subject Property. A WMU was defined as "any discernible unit ... at which a Contaminant has been or may have been placed at any time irrespective of whether or not the unit was intended for managing waste, or any area at a facility subject to MCL 324.11115(a) at which a Contaminant has been routinely or systematically released". The following five WMUs were identified on the Subject Property, as illustrated on Figure 2.

WMU-26 – Former North Debris Piles

WMU-26 was an approximately 20-acre area located in the central portion of the Subject Property that McLouth Steel used to accumulate various debris from its steel-making activities for reclamation. Based on historical documents, materials placed in the debris piles may have included, but not limited to, refractory material, slag, air pollution control solids (from bag houses), basic oxygen furnace ("BOF") scrubber sludge, scale pit sludges, lime handling dust, and air pollution dusts and sludges.

Waste streams designated for reclamation were not segregated, but randomly mixed in the former piles. Reclaimed steel-containing materials were recycled in the steel-making process and processed debris residuals were transferred to new piles in the same area or directly into trucks for transfer to the landfill.

DSC began processing the debris for recovery of recyclable steel scrap in June of 1997². In July of 2000, DSC began transporting the remaining debris pile material to the Countywide Landfill for disposal. Removal activities continued into late 2002. As a result, no visibly identifiable pile remains.



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¹ North Area Characterization Plan, Revised, ESC, November 2, 2000

² Debris Pile Characterization Plan, Techna Corporation, June 8, 1998

WMU-27 – Former Equipment Storage Yard

WMU-27 was a fenced area of approximately 1.2 acres on the northern portion of the Subject Property that was used for secure storage of valuable surplus electrical and mechanical equipment. The area is identified as a WMU because it may have been used to store surplus transformers before construction of the Toxic Substance Control Act ("TSCA") Storage Building in 1980. A small (approximately 1,000 square feet) building was located in the northwest corner of the storage yard. The building was not known to have been used for equipment storage; therefore, it is not considered part of the WMU³. The primary equipment stored in this area was blast furnace equipment. The chain-link fence around the former Equipment Storage Yard has been removed.

In the third quarter of 2001, DSC excavated and loaded approximately 10 cubic yards of soil impacted with polychlorinated biphenyls ("PCBs") from the WMU-27 area. The soil was removed from the site and disposed as non-hazardous waste. Soil verification samples, collected after soil removal, indicated that the impacted soil had been removed.

WMU-29 – Former TSCA Waste Storage Building

WMU-29 was a concrete block building constructed around 1980 which measured approximately 46 feet ("ft") by 20 ft. The building was used to store containers of PCB transformers and materials in compliance with TSCA regulations. The sealed concrete floor was constructed with secondary containment curbs that served as footings for the block walls. The building was demolished in late 2000 or early 2001 and only the concrete pad and secondary containment curbs remain.

WMU-30 - Former Electronic Arc Furnace Dust Pile

McLouth Steel used both BOF and electronic arc furnaces ("EAF") for steel production. The waste emission control dust generated from the EAF air pollution control systems was designated as a listed hazardous waste (K061) by RCRA. Sludge was accumulated in a concrete sump and transferred to the interim status EAF Dust Pile storage area located in the western portion of the Subject Property, across from Sibley Road. WMU-30 was a roughly 25,000 square ft, triangular-shaped area with an earthen berm.

Part B of McLouth's RCRA storage permit application was called in by the United States Environmental Protection Agency ("USEPA") in 1984. McLouth made various submissions, resulting in a final RCRA/Act 64 permit application dated February 27, 1988. After rejection of that permit, McLouth decided to close the EAF Dust Pile and accumulate EAF dust for no longer than 90 days⁴.

McLouth operated WMU-30 continuously until early 1989, when new concrete accumulation tanks (WMU-31) were constructed and placed into use. Final removal of waste took place in 1991. Approximately 980 tons of EAF dust were transported to Horsehead Resource Development Company in Palmerton, Pennsylvania. As a result, no visibly identifiable pile remains.

⁴ Final Closure Report and Certification – Interim Status Hazardous Waste Storage Unit, Techna Corporation, March 31, 1998



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³ Corrective Measures Work Plan – Equipment Storage Yard (WMU-27), TSCA Storage Yard (WMU-29), ESC, July 27, 2000

WMU-31 - Former EAF Emission Control Sludge/Dust Storage Tanks

The EAF Emission Control Sludge/Dust Storage Tanks were reinforced concrete tanks used to accumulate EAF air pollution control sludge and baghouse dust. Two tanks were used to store the material for less than 90 days before shipment off-site for disposal or reclamation at RCRA permitted hazardous waste facility as K061 waste. The tanks and concrete secondary containment structure were constructed in late 1988 to early 1989 and were used until steel-making operations ceased. No releases to the interstitial space or surrounding ground were reported. McLouth reportedly removed all wastes and cleaned the unit in 1996, after EAF operations ceased. After removal of the tanks, the cavity was backfilled to grade and the concrete pad remains in place.

2.3. Areas of Concern

Under the same Consent Order, MDEQ identified Areas of Concern ("AOC"). AOCs were defined as "any area, place, or property where a release or threat of release, within the meaning of Sections 20101(bb) and 20101(ii) of Part 201 of the NREPA, of a hazardous substance in excess of the concentrations which satisfy the requirements of Section 20101 a(1)(a) or (17) or the cleanup criteria for unrestricted residential use under Part 213 of the NREPA has occurred", that may require additional investigation to determine if these locations were a source of contamination that require action to eliminate contaminants. Five AOCs were identified on the Subject Property, as illustrated in Figure 2. The AOCs on the Subject Property were not identified as requiring further action at that time. The five AOCs are described below.

Former Coke Storage Area

The Former Coke Storage Area was located in the northwestern portion of the Subject Property. The area was used to store piles of coke used in the blast furnace.

Former Monguagon Creek Channel

Prior to 1964, the Monguagon Creek flowed south through the Subject Property from the northern portion of the Subject Property. The creek bed was located west of the Former Oil Terminal (Figure 2). South of the Former Oil Terminal, the creek turned east and emptied into the Trenton Channel. After 1964, the Monguagon Creek bed on the Subject Property was filled and the creek was rerouted to its present-day channel (Figure 2).

Possible Fill Area

The Possible Fill Area was depicted in the 1999 Consent Order in the northern portion of the Subject Property, east of WMU-29 (Figure 2). The area was reportedly filled prior to McLouth's occupation of the Subject Property. The area appears to be located in the former wetlands.

Former Oil Terminal

The Former Oil Terminal was located in the central portion of the Subject Property. The Former Oil Terminal included five above ground storage tanks ("ASTs") and was removed from the Subject Property by 1964.

Former Slag Processing Plant – North

The Former Slag Processing Plant – North was located in the southern portion of the Subject Property. This AOC was reportedly a process area operated by the E.C. Levy Company to reclaim and store slag product for later sale.



3. SITE GEOLOGY AND HYDROGEOLOGY

The Subject Property is in the Eastern Lowlands Physiographic Region of Michigan. This region is located near the coast in the southeastern part of Michigan and extends north to the tip of the Lower Peninsula. The lowlands were deposited under large glacial lakes and rose when the lakes lowered. This region is defined by its flat topography and poorly drained soils⁵.

The Subject Property is underlain by the Dundee Limestone formation which overlies the Detroit River Group⁶. The Middle Devonian Dundee Limestone underlies most of the Southern Peninsula and averages a thickness of approximately 100 ft in the southeastern portion of Michigan's Southern Peninsula. The Dundee Limestone is a gray to buff cherty, crystalline limestone of high purity which was formerly mined at the Sibley Quarry located south of Sibley Road and approximately 3,600 ft west of the Subject Property. Bedrock was encountered in four soil borings (MW-104, MW-108, MW-109, and MW-110) during the groundwater investigation at elevations between approximately 535.5 ft above mean sea level ("AMSL") and 588 ft AMSL. Bedrock was encountered at a higher elevation in borings in the southern portion of the Subject Property. Limestone was visually confirmed at two of the four locations (MW-104 and MW-110) during drilling. Bedrock cuttings were not returned in the other two borings and the determination of bedrock was based on the driller's opinion due to change in subsurface characteristics.

The confined deep aguifer lies above the bedrock and below the basial clay unit. The deep aguifer which, consists of clayey sand and gravel, was not present at each location during the groundwater investigation. Two groundwater monitoring wells (MW-102D and MW-107D) were installed into the deep aguifer during the groundwater investigation. Groundwater elevations in the deep aguifer were lower than those in the shallow aguifer. Based on the presence and thickness of the clay unit and groundwater elevations, the deep aquifer does not appear to be hydraulically connected to the shallow aquifer.

A clay layer overlies the deep aquifer (where present) beneath the Subject Property and the thickness of the clay layer increases toward the northern portion of the Subject Property based on lithology encountered during the groundwater investigation. The clay layer was thinner in areas which were formerly open water; however, based on this investigation, the clay layer appears to be present below the entirety of the Subject Property and the top of the clay layer was encountered at elevations between 551 ft AMSL and 581 ft AMSL. The lowest elevation of the top of the clay layer was encountered in a boring (MW-100) drilled into the former Monguagon Creek bed in the northern portion of the Subject Property.

Regional groundwater flow is assumed to be controlled by the Detroit River. The Eastern Lowlands Physiographic Region is characterized by deposits of glacio-lacustrine clay and silt deposits. These deposits are not a significant source of groundwater due to their low permeability. The Dundee Limestone can yield significant quantities of groundwater; however, high mineral concentrations limit consumptive use.

Based on groundwater elevation data collected during the investigation, groundwater flow in the shallow aquifer beneath the Subject Property is toward the Trenton Channel in the



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http://geo.msu.edu/extra/geogmich/phy-regions.html https://www.deq.state.mi.us/GeoWebFace/

southern portion of the Subject Property and toward the Monguagon Creek in the northern portion of the Subject Property. Based on lithology recorded during well installation, the shallow aquifer is underlain by the basal clay confining unit and groundwater in the shallow aquifer is within fill material. The Subject Property consisted of wetlands prior to about 1952.

4. GROUNDWATER INVESTIGATION

ASTI conducted the groundwater investigation in accordance with the CACO and Work Plan. Investigation activities consisted of an inspection of existing wells, groundwater monitoring well installation, well development, groundwater level gauging, four consecutive quarters of groundwater sample collection, and aquifer testing (slug testing).

4.1. Assessment of Existing Monitoring Wells

On September 4, 2019, ASTI mobilized to the Subject Property to assess the condition of existing groundwater monitoring wells. The objective was to determine which of the previously installed monitoring wells were still present, could be located and accessed, and to assess the well condition based on visible observation and depth sounding. ASTI collected total depth measurements and depth to water measurements from the wells which could be accessed. Total depth measurements were compared to available well logs.

In the Work Plan, ASTI proposed installation of shallow and deep monitoring wells in the vicinity of existing well TMW-27. However, based on the results of the assessment, ASTI determined that existing well TMW-27 could be used in the groundwater investigation in place of the proposed shallow well in that location. No additional existing wells were determined to be acceptable for further use during this investigation.

4.2. <u>Groundwater Monitoring Well Installation</u>

ASTI subcontracted licensed driller, Cascade Environmental ("Cascade") to install the wells proposed in the Work Plan. Between the dates of October 14 and October 22, 2019, ASTI provided oversight and direction while Cascade installed 15 groundwater monitoring wells at 11 locations on the Subject Property. Four well locations contained nested well pairs. Prior to drilling, ASTI contacted Michigan's MISS DIG system to provide a location of underground utilities.

Sonic drilling was utilized to install the 15 groundwater monitoring wells between depths of 10 ft below ground surface ("bgs") and 55 ft bgs. Well locations were designated as MW-100 through MW-110 and nested well pairs were installed at locations MW-100, MW-107, MW-109, and MW-110. Monitoring wells were installed at the approximate locations shown in the Work Plan, and as illustrated on Figure 3. Designations of relative depth were incorporated with the well identification number for nested well pairs (i.e. MW-100s and MW-100i screen the upper portion of the shallow aquifer and the lower portion of the shallow aquifer, respectively). Wells with the "D" in the identification were intended to be installed into the deep aquifer based on observations during well installation. ASTI later determined that wells MW-109D and MW-110D were installed into the lower portion of the shallow aquifer (based on groundwater elevations, lithology, and chemical profiles).

An ASTI field scientist logged soil cuttings and scanned the soil for the presence of volatile organic compounds ("VOCs") with the use of a photoionization detector ("PID"). The ASTI scientist logged the soil cuttings and recorded the PID readings in a field notebook or on designated forms. As described in the Work Plan, well depths were proposed to screen the



upper portion of the shallow aquifer, the lower portion of the shallow aquifer, or the second water bearing zone ("deep aquifer"). The ASTI field scientist used information collected during drilling (i.e. lithology, saturated zones, and/or depth to water) to determine the screen intervals. The soil boring and well construction logs are included as Attachment A.

Each well consists of two-inch diameter polyvinyl chloride ("PVC") riser with factory-slotted PVC well screen. The screen lengths varied between 5 ft and 20 ft. A sand filter pack was installed in the annulus around each screen to approximately two ft above the top of the screen. Bentonite chips were placed above the filter pack to near ground surface or between screen intervals in the nested well pairs. Each well was finished with a steel stick up protective cover and a concrete pad was installed around the protective cover with the exception of MW-106. A loss of sand occurred while placing the filter pack at shallow well MW-106. Borehole collapse at this location occurred later and provided a natural filter pack. Figure 3 provides a Site Features Map which shows the location of each groundwater monitoring well. Attachment A provides the soil boring logs and well completion diagrams for the new monitoring wells and existing well TMW-27, which, was installed by others during a previous investigation. Table 1 – Summary of Groundwater Monitoring Wells, provides a summary of well depths, top of PVC casing elevations, screen lengths, and surveyed locations. After installation, ASTI developed each of the newly installed wells and TMW-27 by over-pumping each well until the purge water appeared free of sediment.

The screen length varied based on the total well depth and the thickness of the saturated zone. Wells installed into the deep aquifer (wells designated with "D" in the well identification) were completed with five ft of well screen.

In the Work Plan, locations MW-101, MW-103, MW-105, and MW-106 were proposed to consist of a nested well pair to screen both the upper and lower portion of the shallow aquifer. Based on observations of the shallow saturated zone during drilling, one well was installed in each location with a screen length to intersect the water table and extending to the bottom of the shallow aquifer (Attachment A).

Monitoring well MW-110D was intended to screen the deep aquifer. During drilling the clay layer between the depth of 18 ft bgs and 19 ft bgs represented the basal clay unit. A five foot screen was installed below the clay layer. After a review of the well completion logs ASTI determined that the basal clay unit is located directly above the bedrock and the upper clay layer is likely a lens. The clay confining layer found in other portions of the Subject Property during this investigation was thicker than 1 ft. Groundwater elevation data and groundwater analytical concentrations supported the evidence that the screen for MW-110D is set in the shallow aquifer. Wells MW-102D and MW-107D screen the confined deep aquifer.

After installation, a licensed land surveyor provided a well elevation and location survey. Meridian Land Surveying of Flint, Michigan provided the top of PVC casing elevation and location for each of the new wells and existing well TMW-27, and a surface water elevation gauging location at the sea wall along the Trenton Channel (TC-1 [Figure 3]). The top of PVC casings served as the measuring point for depth to groundwater measurements and the top of casing elevations were measured to the nearest 0.01 ft. The well locations were provided using the Michigan State Plane South Coordinates. Table 1 provides a summary of the measuring point elevations and the well locations and Figure 3 depicts the location of the wells.



4.3. Groundwater Sampling

Once well installation and development were complete, ASTI conducted four consecutive quarterly groundwater gauging and sampling events, beginning in the fourth quarter of 2019, and ending in the third quarter of 2020. Groundwater sampling was conducted in accordance with the CACO and the Work Plan.

4.3.1. <u>Depth to Groundwater Measurements</u>

Prior to purging for groundwater sample collection, ASTI collected depth to water measurements at each well to be sampled. Groundwater gauging events took place before each quarterly groundwater sampling event on December 12, 2019, March 18, 2020, May 27, 2020, and July 29, 2020. Depth to water measurements collected during the first and third groundwater sampling events (December 10, 2019 and May 27, 2020, respectively) were collected as depth from ground surface by collecting the depth to water from the top of the steel casing and subtracting the height of the steel casing. Those measurements are not considered to be precise enough to determine the groundwater elevation. As a result, ASTI conducted an additional depth to groundwater gauging event on July 7, 2020. Groundwater elevations were calculated by subtracting the depth to groundwater from the measuring point (top of PVC casing) elevation. Table 2 — Groundwater Elevation Summary, provides a summary of the depth to water measurements and groundwater elevations. Groundwater elevation contour maps for the gauging events conducted on March 18, 2020, July 7, 2020, and July 29, 2020 are provided as Figure 3, Figure 4, and Figure 5, respectively.

Groundwater was not present in MW-109s during the gauging events. During well installation, the upper sand interval was believed to be the top of the shallow aquifer. Based on a review of the groundwater elevations in the shallow aquifer and the MW-109s screen elevation, the bottom of the screen was set above the shallow aquifer. ASTI determined that MW-109D was not set into the deeper aquifer but in the shallow aquifer because the deep aquifer was not present at the MW-109 location (Attachment A).

4.3.2. Groundwater Sample Collection

After collecting depth to water measurements at each of the wells to be sampled, ASTI began purging the wells for sample collection. Purging took place with the use of a peristaltic pump at each well; however, due to the depth to water at MW-102D, a bladder pump was used to purge and collect the groundwater sample at this location. Each well was purged at a flow rate low enough to eliminate or minimize groundwater drawdown to ensure that formation water was being collected. ASTI collected water quality readings during well purging on five-minute intervals. The water quality readings consisted of pH, turbidity, temperature, specific conductance, dissolved oxygen, and oxidation-reduction potential. After the water quality readings stabilized for three consecutive readings, ASTI collected groundwater samples into jars provided by the laboratory, appropriate for the specified analysis.

Each groundwater sample was given a unique sample identification consisting of the well name and a six-digit date. For example, the sample collected from MW-103 on December 12, 2019 was identified as "MW-103-121219". Groundwater samples collected from TMW-27 were mistakenly labeled as "TMW-26" during each of the four quarterly sampling events, but ASTI confirmed that each sample labeled with "TMW-26" was collected from well TMW-27 (Figure 3), and no samples were collected from TMW-26 during this investigation. ASTI collected one duplicate sample during each groundwater sampling event. The duplicate samples were labeled as "DUPLICATE" or "DUP" without the well identification and the date



of collection. A trip blank was provided by the laboratory for each set of samples and resided in the sample cooler during each sampling event and during transportation.

Upon collection, ASTI placed the samples on ice and the samples were kept cold until delivery to Fibertec Environmental Service ("Fibertec") in Holt, Michigan using standard chain of custody procedures. In accordance with the CACO and the Work Plan, the groundwater samples (including duplicate and trip blank samples) were analyzed for the following parameters:

Analysis	Analytical Method
VOCs	5035 and 8260
Semi-volatile Organic Compounds ("SVOCs")	8270
Polychlorinated Biphenyls ("PCBs")	8082A
Metals ⁽¹⁾	6020
Total Mercury	7470
Cyanide, Free	9016
Chloride	9253
Ammonia	350.1
рН	9040B
Total Dissolved Solids	160.1

⁽¹⁾ Arsenic, barium, total chromium, copper, lead, manganese, nickel, selenium, silver, vanadium, and zinc.

Method detection limits for mercury were greater than the Generic Nonresidential Cleanup Criteria ("GNRCC") under Part 201 of Michigan's *Natural Resources and Environmental Protection Act, 1994 PA 451, as Amended* ("Part 201") Groundwater to Surface Water Interface Criteria ("GSI"); therefore, the samples collected in the third and fourth sampling events (May 2020 and June 2020, respectively) were additionally analyzed for low-level mercury analysis by USEPA Method 1631E.

Sufficient quantities of groundwater were not present in MW-109s for sample collection during any of the four sampling events. Therefore, groundwater samples were not collected from MW-109s during this investigation.

4.4. Aquifer Testing

On August 4, 2020, ASTI conducted aquifer testing via slug testing at the Subject Property. ASTI chose a subset of wells which represent the shallow aquifer across the Subject Property. ASTI conducted slug tests at wells MW-100s, MW-100i, MW-101, MW-104, MW-107s, MW-108, MW-109D, and MW-110D; however, upon review of the data, the slug tests completed for MW-107, MW-108, and MW-110D did not produce reliable results due to likely movement of the level troll during slug insertion or removal. ASTI believes that the slug tests in this evaluation provide an accurate representation of the shallow aquifer at the Subject Property.

Prior to conducting a slug test, ASTI inserted a water level data logger into the test well and recorded the static depth to water with an electronic sounding probe. ASTI then completed slug testing by rapidly inserting a solid slug of a known volume into the well and observing water level data until it returned to within at least 90 percent of the static level. The test was repeated by removing the slug from the well and observing water levels. Slug tests were repeated when water levels recovered quickly and when field results were of uncertain quality



and hydraulic conductivity values for multiple tests in a single well were averaged ("representative value") to determine the representative hydraulic conductivity for that well.

The calculated hydraulic conductivity values resulting from the slug tests completed in the shallow aquifer on August 4, 2020 ranged from 0.093 ft per day ("ft/day") to 18 ft/day. The geometric mean of the representative values for each well is approximately 2.1 ft/day. This value is consistent with silty sand or fine sand which was logged in the screen interval of the logs for the tested wells. Table 3 – Summary or Slug Test Data, provides a summary of the hydraulic conductivity values calculated from the August 4, 2020 slug testing event. Slug test data files are included as Attachment B.

4.5. Groundwater Analytical Results

The groundwater laboratory analytical results for the quarterly sampling events were compared to the Part 201 GNRCC including, Nonresidential Drinking Water Criteria ("DW"), the GSI, and the Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria ("GVIAI"). Laboratory analytical results indicated groundwater concentrations exceeded the GNRCC for DW and GSI for several parameters. Table 4 provides a summary of the groundwater analytical data and Attachment C includes the laboratory analytical reports and chain-of-custody forms for each sampling event conducted during this investigation.

<u>Metals</u>

Arsenic was detected at concentrations exceeding the GNRCC for DW in one or more samples collected from wells MW-101s, MW-101i, MW-104, and MW-105. Lead was detected at concentrations exceeding the GNRCC for DW in one or more samples collected from wells MW-101i, MW-101, MW-102D, MW-103, MW-105, and MW-106, MW-108, and MW-110D. Manganese was detected at concentrations exceeding the GNRCC for DW in one or more samples collected from wells MW-100i, MW-101, MW-102D, MW-103, MW-107D, and MW-109D.

Arsenic was detected at concentrations exceeding the GNRCC for GSI in one or more samples collected from wells MW-101s, MW-101i, MW-104, and MW-105. Total chromium was detected at concentrations exceeding the GNRCC for GSI in one or more samples collected from MW-101i, MW-106, MW-108, MW-110s, MW-110D, and TMW-27. Selenium was detected at concentrations exceeding the GNRCC for GSI on one occasion from MW-100s and MW-100i. Silver was detected at concentrations exceeding the GNRCC for GSI on one occasion from MW-101 and MW-104. Vanadium was detected on one occasion at a concentration exceeding the GNRCC for GSI in MW-105. Figure 7 depicts the groundwater sample locations and concentrations where metals exceeded the GNRCC.

<u>Mercury</u>

Mercury was not detected at concentrations exceeding the laboratory reporting limit during the first two quarterly sampling events; however, the laboratory detection limit was greater than the GNRCC for GSI. Therefore, low-level mercury analysis was conducted in addition to total mercury analysis for samples collected during the final two sampling events. Mercury was detected via low-level analysis and/or total mercury analysis at concentrations exceeding the GNRCC for GSI in one or more samples collected from each well during the final two sampling events with the exception of wells MW-106 and MW-107D.

Mercury concentrations in the groundwater samples collected during this investigation did not exceed the GVIAIC.

ENVIRONMENTAL

Semi-volatile Organic Compounds

The SVOCs aniline, carbazole, dibenzofuran, 2,4-dichlorophenol, 2,4-dimethylphenol, fluoranthene, 3- and 4-methylphenol, and phenanthrene were detected in one or more groundwater samples at concentrations exceeding the GNRCC for GSI. The compounds aniline, carbazole, and dibenzofuran were each detected on one occasion at concentrations exceeding criteria; each from samples collected from MW-100s or MW-100i. The SVOC 2,4-dimethylphenol was only detected on two occasions at concentrations exceeding criteria; each from samples collected at MW-104. Figure 8 depicts the locations and groundwater concentrations where SVOCs exceeded the GNRCC.

SVOC concentrations in the groundwater samples collected during this investigation did not exceed the GVIAIC.

Volatile Organic Compounds

The compounds benzene and vinyl chloride were detected in one or more samples collected from MW-100s and MW-100i at concentrations which exceeded the GNRCC for DW. Dibromochloropropane was detected on one occasion from MW-100i at a concentration exceeding the GNRCC for DW.

Naphthalene was detected at concentrations exceeding the GNRCC for GSI on two or more occasions from wells MW-100s, MW-100i, MW-103, and MW-107s. 1,2,4-trimethylbenzene was detected at concentrations exceeding the GNRCC for GSI in each sample collected from MW-101. Vinyl chloride was detected at concentrations exceeding the GNRCC for GSI in three or more samples collected from MW-100s and MW-100i. Total xylenes were detected on one occasion at a concentration exceeding the GNRCC for GSI in well MW-100s. VOCs were not detected at concentrations exceeding either criteria in samples collected from wells MW-102D, MW-104, MW-105, MW-106, MW-107D, MW-108, MW-109D, MW-110s, MW-110D, or TMW-27. Figure 8 depicts the locations and concentrations where VOCs exceeded the GNRCC.

VOC concentrations in the groundwater samples collected during this investigation did not exceed the GNRCC for GVIAI.

PCBs

PCBs were not detected above the laboratory reporting limit in any groundwater sample collected during this investigation.

Ammonia, Chloride, Total Dissolved Solids, and pH

Ammonia was detected at concentrations in exceedance of the GNRCC for DW in one or more samples collected from MW-100s, MW-100i, MW-104, and MW-107s. Chloride was detected at concentrations in exceedance of the GNRCC for DW in one sample collected from MW-100s (MW-100s-052720) and in three of the four samples collected from MW-104 and at concentrations in exceedance of the GNRCC for GSI in each of the four samples collected form MW-100s, MW-100i, MW-101, MW-104, and on one occasion in MW-110s.

Total dissolved solids were detected above the GNRCC for DW and the GSI in one or more samples collected from each well sampled with the exception of MW-102D and MW-107D. Laboratory pH readings indicated elevated readings (greater than 8.5 standard units ["S.U."]) in each groundwater sample collected except for MW-102D and MW-107D. Each sample collected from MW-102D contained pH readings within the acceptable range of 6.5 S.U. to



8.5 S.U. Only one of the four samples collected from MW-107D (MW-107D-121219) contained an elevated pH reading of 8.54 S.U. Figure 7 includes the locations and concentrations of ammonia, chloride, and total dissolved solids which exceeded GNRCC.

Ammonia concentrations in the groundwater samples collected during this investigation did not exceed the GVIAIC.

5. GROUNDWATER FLOW FROM THE SUBJECT PROPERTY

ASTI calculated the groundwater flow from the Subject Property to the Trenton Channel and the Monguagon Creek. A 270-foot long steel sheet pile wall is located along the bank of the Trenton Channel in the northeastern portion of the Subject Property (Figure 2). The sheet pile wall creates a boundary which prevents groundwater flow from the Subject Property to the Trenton Channel along the wall; thus, diverting flow to the north and south of the sheet pile wall (Figures 4, 5, and 6).

Groundwater flow to the north of the sheet pile wall is designated the Northern Flow Zone and groundwater flow to the south of the sheet pile wall is designated the Southern Flow Zone. ASTI calculated groundwater flow to the Monguagon Creek ("Northern Flow Zone") and the Trenton Channel ("Southern Flow Zone") separately. ASTI calculated the groundwater flow from the Subject Property using the following equation:

Q = KAi

Where: $Q = \text{groundwater flow (ft}^3/\text{day)}$

K = hydraulic conductivity (ft/day),

A = area of cross-sectional flow (height of saturated zone * length of

groundwater/surface water interface) (ft²)

i = hydraulic gradient (unitless)

The height of the saturated zone represents the elevation of the top of the confining layer (clay layer) subtracted from the average groundwater elevation. The area of cross-sectional flow represents a vertical plane through which groundwater flows at the groundwater/surface water interface ("GSI"). The length of the GSI for the Northern Flow Zone was measured from the point where the Monguagon Creek enters the Subject Property to the northern end of the sheet-pile wall. The length of the Southern Flow Zone was measured from the southern end of the sheet-pile wall to the point where the southern property border meets the Trenton Channel. The hydraulic gradient is the difference in groundwater elevation between two wells in the groundwater flow path divided by the distance between the two wells.

5.1. Groundwater Flow to the Monguagon Creek (Northern Flow Zone)

ASTI calculated the groundwater flow in the Northern Flow Zone using the hydraulic gradient between wells TMW-27 and MW-100s/i (MW-100s and MW-100i are both screened in the shallow aquifer). The hydraulic gradient for each groundwater elevation monitoring event was 0.01. As a conservative measure, ASTI used the maximum hydraulic conductivity calculated from slug tests conducted in the Northern Flow Zone, which was 1.8 ft/day (hydraulic conductivity calculated for MW-100s). The length of cross-sectional flow is 1,810 ft and an average saturated height of 24.3 ft (average saturated height in MW-100s and MW-100i) for a calculated area of 43,983 ft². The calculated groundwater flow from the Northern Flow Zone to the adjacent stream was calculated to be approximately 790 cubic ft per day ("ft³/day") or

ENVIRONMENTAL

5,920 gallons per day ("gpd"). Assuming the GSI length of 1,810 ft, the groundwater flow is approximately 3.3 gpd/ft in the Northern Flow Zone. Table 5 provides a summary of the groundwater flow calculations.

5.2. Groundwater Flow to the Trenton Channel (Southern Flow Zone)

ASTI calculated the groundwater flow in the Southern Flow Zone using the hydraulic gradient between wells MW-106 and MW-107s. The maximum hydraulic gradient was calculated to be 0.0005. As a conservative measure, ASTI used the maximum, per-well average hydraulic conductivity calculated from slug tests conducted at wells located in the Southern Flow Zone (MW-101, MW-104, and MW-109D). The hydraulic conductivity value used was 12.8 ft/day (average value for MW-109D). The length of cross-sectional flow is 3,230 ft and an average saturated height of 12.7 ft (average saturated height in wells MW-101, MW-107s, MW-108, MW-110s, and MW-110D) for a calculated area of 41,021 ft². The calculated groundwater flow from the Southern Flow Zone to the Trenton Channel was calculated to be approximately 260 ft³/day or 1,960 gpd. Given a GSI length of 3,230 ft, the groundwater flow is approximately 0.61 gpd/ft in the Southern Flow Zone. Table 5 provides a summary of the groundwater flow calculations.

6. CONTAMINANT FLOW TO THE TRENTON CHANNEL

ASTI calculated the mass of contaminants flowing from groundwater beneath the Subject Property in the Northern and Southern Flow Zones. ASTI used the calculated groundwater flow for each zone and a representative concentration of each constituent that exceeded the GNRCC for GSI in the GSI monitoring points. The GSI monitoring points are defined in Natural Resources and Environmental Protection Act 451 of 1994 Section 20120e(23)(d) as, a vertical well installed in the saturated zone as close as practicable to surface water with a screened interval or intervals that are representative of the groundwater venting to the surface water.

In the Northern Flow Zone, MW-100s and MW-100i represent the GSI monitoring points and in the Southern Flow Zone, MW-101, MW-107s, MW-108, MW-110s, and MW-110D represent the GSI monitoring points (MW-110D is installed in the shallow aquifer). MW-107D is not considered to be a GSI monitoring point because the deep aquifer is not considered to vent directly to surface water.

6.1. Contaminant Flow in the Northern Flow Zone

Based on groundwater flow direction, ASTI determined that monitoring wells TMW-27, MW-102D, MW-100s, and MW-100i are in the Northern Flow Zone. Wells MW-100s and MW-100i represent the GSI monitoring points in the Northern Flow Zone.

ASTI developed representative concentrations for chemicals which exceeded the GNRCC for GSI in the GSI monitoring points using the USEPA ProUCL Software Version 5.1. A 95% UCL could not be calculated from the dataset for the chemicals, total chromium, aniline, carbazole, and dibenzofuran due to only one analytical concentration above the laboratory reporting limit each. As a conservative measure, ASTI used the maximum detected concentration as the representative concentration for these chemicals and the mass is likely an overestimation. The representative concentrations of chemicals which exceeded the GNRCC for GSI are presented in Table 6 and the ProUCL output files are included in Attachment D.

Mixing zone calculations are not included as part of this investigation however, ASTI calculated the approximate mass of contaminants flowing from the Northern Flow Zone to the



Monguagon Creek using the groundwater flow and the representative concentrations. Table 7a provides a summary of the Chemical Mass loading from the Northern Flow Zone presented in grams per day.

6.2. Contaminant Flow in the Southern Flow Zone

Based on groundwater flow direction, ASTI determined that monitoring wells MW-101, MW-103, MW-104, MW-105, MW-106, MW-107s, MW-107D, MW-108, MW-109D, MW-110s, and MW-110D are in the Southern Flow Zone. Wells MW-101, MW-107s, MW-108, MW-110s, and MW-110D represent the GSI monitoring points in the Southern Flow Zone. Well MW-101 was chosen as a conservative measure because it represents the southern-most monitoring point with no monitoring well between it and the Trenton Channel.

Based on groundwater elevations, chemical concentrations, and absence of a significant confining clay layer above the screen, ASTI determined that MW-110D is screened in the shallow aquifer. Therefore, MW-110s and MW-100D are both screened in the shallow aquifer. ASTI calculated representative concentrations for each constituent that exceeded the GNRCC for GSI in the GSI monitoring points. Using the groundwater flow for the Southern Flow Zone, ASTI determined the approximate mass of chemicals flowing from beneath the Subject Property to the Trenton Channel.

ASTI developed representative concentrations for chemicals which exceeded the GNRCC for GSI in the GSI monitoring points using the USEPA ProUCL Software Version 5.1. A 95% UCL could not be calculated from the dataset for the chemicals silver and phenanthrene due to only one concentration above the laboratory reporting limit each. As a conservative measure, ASTI used the maximum detected concentration as the representative concentration for these constituents. Therefore, the mass of those chemicals is likely an overestimation. The representative concentrations of the chemicals which exceeded the GNRCC for GSI are presented in Table 6 and the ProUCL output files for the Southern Flow Zone are included in Attachment D.

Mixing zone calculations are not included as part of this investigation however, ASTI calculated the approximate mass of contaminants flowing from the Southern Flow Zone to the Trenton Channel using the groundwater flow and the representative concentrations. Table 7b provides a summary of the Chemical Mass loading from the Southern Flow Zone presented in grams per day.

7. SITE CONCEPTUAL MODEL

Based on the groundwater investigation conducted by ASTI and previous investigations conducted by others, ASTI developed the following Site Conceptual Model.

The Subject Property is bordered to the north by the Monguagon Creek, to the east by the Trenton Channel of the Detroit River, to the south by the Former McLouth Steel Facility, and to the west by railroad tracks and West Jefferson Avenue. Mixed residential and commercial properties and Sibley Quarry lie west of West Jefferson Avenue and Grosse Ile lies east of the Trenton Channel.

The Subject Property is underlain by fill material above the basial clay unit throughout the Subject Property, which overlies the Dundee Limestone formation. Based on the groundwater monitoring wells installed in 2019, the top of the Dundee Limestone formation lies between approximately 535.5 ft AMSL and 558 ft AMSL. A layer of sand and gravel is present between



the basal clay and bedrock at elevations between approximately 542.5 ft AMSL and 535.5 ft AMSL. Deep wells, MW-102D and MW-107D are screened in that sand and gravel layer. The approximate bottom elevation of the Trenton Channel is above the bottom of the basal clay unit; therefore, the clay unit likely isolates the deeper sand and gravel aquifer from the Trenton Channel. The top of the basal clay unit lies between approximate elevations of 551 ft AMSL and 581 ft AMSL.

Before 1952, the Subject Property consisted mostly of open water and the basal clay unit was most likely located at the bottom of the open water. Fill material was placed on top of the basal clay unit to fill the wetlands. Based on soil boring logs developed during this investigation, the bottom of the fill is below the surface water elevation of the Trenton Channel and the water table is located within the fill layer. Therefore, the shallow aquifer beneath the Subject Property was created by filling in the open water. Most of the fill was placed prior to 1952 and the origin of the fill is unknown. The fill was evident during well installation by the presence of slag, metal shards, portions of suspected railroad ties and spikes, and brick fragments. Until approximately 1967, the Monguagon Creek bisected the Subject Property, flowing north to south, before emptying into the Trenton Channel east of Sibley Avenue. Wells MW-100i/s, MW-103, and MW-106 were installed in the former creek bed.

After acquisition sometime between 1956 and 1961, McLouth Steel used the Subject Property for storage of raw materials, waste, and equipment. The E.C. Levy Company operated a slag processing plant on the Subject Property and slag is present in the fill material. A bulk oil storage facility was located approximately in the center of the Subject Property until sometime before 1964.

Based on groundwater gauging events conducted during this investigation, the water table below the Subject Property lies between elevations of 575 ft AMSL and 580 ft AMSL. The groundwater elevation in the deep aquifer was calculated to be at elevations between 557 ft AMSL and 574 ft AMSL. ASTI later determined that wells designated MW-109D and MW-110D were screened in the shallow aquifer. This determination was made through a review of well completion logs, groundwater elevation data, and laboratory analytical data.

Groundwater flow in the shallow aquifer is northeast toward the Monguagon Creek in the Northern Flow Zone and east toward the Trenton Channel in the Southern Flow Zone. The Northern and Southern Flow Zones are divided by a steel sheet-pile wall, approximately 270 ft long, located along the bank of the Trenton Channel, immediately south of the confluence of the Monguagon Creek and the Trenton Channel. The sheet-pile wall restricts groundwater flow along the wall from the shallow aquifer to the Trenton Channel. The groundwater flow restriction created a lobe of elevated groundwater as shown in the groundwater elevation contour maps near wells MW-104 and MW-105 in Figures 4, 5 and 6.

8. NATURE AND EXTENT OF GROUNDWATER IMPACTS

Deep Aquifer

Groundwater analytical data indicate exceedances of one or more metals in each of the 15 wells sampled during the four consecutive quarterly events. Wells screened in the deep aquifer (MW-102D and MW-107D) contained the fewest exceedances of metals. The basal clay unit restricts flow between the shallow and deep aquifers and the deep aquifer is at an elevation below the bottom of the Trenton Channel and therefore, not directly hydraulically connected to the Trenton Channel. Based on the upgradient location of MW-102D and the screen interval below a confining layer, it is unlikely that impacts in MW-102D result from



activities conducted on the Subject Property. VOCs, SVOCs, and PCBs were not detected in the deep wells at concentrations exceeding laboratory reporting limit during this investigation.

Shallow Aquifer

Elevated pH readings were detected during each sampling event from each shallow well sampled, likely due to the presence of slag in the fill material. Samples collected from wells MW-106, MW-108, MW-110s, MW-110D, and TMW-27 did not contain concentrations of VOCs, SVOCs, or PCBs in exceedance of GNRCC. The SVOCs aniline, carbazole, dibenzofuran, and dibromochloropropane and the VOCs fluoranthene, benzene, dibromochloropropane, and vinyl chloride were detected at concentrations exceeding GNRCC only in wells MW-100s and MW-100i. MW-100s and MW-100i are located in the former channel of the Monguagon Creek on the upstream (north) portion of the property In total, SVOCs were detected at concentrations exceeding criteria on 42 occasions; 21 of those exceedances were detected in samples collected from MW-100i and MW-100s. The former stream bed may act as a preferential pathway of migration on to the Subject Property from an offsite source.

1,2,4-trimethylbenzene was detected at concentrations exceeding GNRCC for GSI only in well MW-101 (in each of the four samples collected). MW-101 is located near the southwest corner of the Subject Property near the upgradient (west) property boundary. The GNRCC for GSI exceedances of 1,2,4-trimethylbenzene in MW-101 and not in other wells on the Subject Property, indicates that the source is likely upgradient and off-site.

Wells MW-104 and MW-105 were installed in the shallow aquifer immediately downgradient of WMU-27 and WMU-29, respectively to assess potential impacts from former operations at those WMUs. PCBs are the contaminant of potential concern for WMU-27 and WMU-29. PCBs were not detected in groundwater samples collected from MW-104 or MW-105 at concentrations above the laboratory reporting limit during this investigation. Concentrations of 2,4-dimethylphenol (MW-104) and 3,4-dimethylphenol (MW-104 and MW-105) exceeded the GNRCC for GSI during multiple sampling events.

Given the nature and extent of the constituents detected in groundwater during four quarters of sampling, the impacts are likely a result of offsite sources and/or the material used to fill the former wetlands and Monguagon Creek bed.

9. EXPOSURE PATHWAYS

Groundwater beneath the Subject Property is not used as a source of drinking water. The Monguagon Creek and Trenton Channel are the only downgradient receptors. The shallow aquifer beneath the Subject Property would likely not provide enough water to act as a drinking water source. However, a restrictive covenant can be placed on the deed to prevent installation of wells into the shallow or deep aquifer beneath the Subject Property for consumptive use or irrigation as part of any due care obligations. Therefore, the drinking water is not a relevant exposure pathway for the Subject Property.

The Detroit River is used as a drinking water source. Therefore, the GNRCC for GSI is relevant for the Subject Property. A request for calculation of mixing zone based GSI criteria may be submitted to EGLE if necessary; based on potential remedial options for groundwater beneath the Subject Property.



The Subject Property is currently unoccupied and there are no structures. Therefore, groundwater volatilization to indoor air is not currently a relevant pathway.

10. SUMMARY

ASTI conducted a groundwater investigation at the Subject Property in accordance with the CACO and ASTI's Work Plan. The investigation included installation of 15 groundwater monitoring wells and four consecutive groundwater sampling events conducted at 16 total monitoring wells. Depth to groundwater measurements were used to calculate groundwater elevations in the shallow and deep aquifers and groundwater flow in the shallow aquifer is toward the Monguagon Creek in the Northern Flow Zone and toward the Trenton Channel in the Southern Flow Zone. The Northern and Southern Flow Zones are separated by the steel sheet pile wall south of the confluence of the Monguagon Creek and the Trenton Channel. The results of slug testing in the shallow aquifer indicated that the hydraulic conductivity is approximately 1.8 ft/day in the Northern Flow Zone and approximately 12.8 ft/day in the Southern Flow Zone. These values are typical of silty to fine sand aquifers like the material used to fill the former open water at the Subject Property.

Groundwater analytical samples indicated impacts of dissolved metals and limited VOCs and SVOCs. Elevated pH readings were recorded in each of the wells installed in the shallow aquifer. Laboratory analytical data indicated exceedances of GNRCC for DW and GSIP. Drinking water is not used at the Subject Property and a restrictive covenant can be placed on the deed to restrict future use. The Detroit River is used as a drinking water source. ASTI calculated representative concentrations for chemicals which exceeded the GSIP and used the representative concentrations and groundwater flow to determine the mass of those chemicals flowing to the Monguagon Creek and the Trenton Channel.

11. CONCLUSIONS

Data collected during the groundwater investigation conducted by ASTI in 2019 and 2020 show that groundwater concentrations exceeding the GNRCC for DW and GSIP are likely a result of various sources. Chemical impacts in the MW-100s/i nested well pair are not characteristic of former operations conducted at the Subject Property, and it is likely that these impacts are a result of off-site activities or from the material used to fill in the Monguagon Creek bed. The property east of the northern portion of the Subject Property is a former chemical manufacturing facility that is currently undergoing remediation as a result of soil and groundwater contamination from "organic and inorganic compounds". Additionally, the former Monguagon Creek bed may act as a preferential flow pathway from an off-site source to the north. Groundwater impacts of 1,2,4-trimethylbenzene detected in MW-101 are likely a result of an off-site, upgradient source given the location of the well.

Concentrations of metals detected in groundwater samples across the Subject Property are likely a result of the slag-containing fill material.

12. RCRA CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or

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ASTI File No. 10860 April 2021

Declaration of Restrictive Covenant, BASF Riverview, Site ID No. 82000016, September 13, 2013

persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

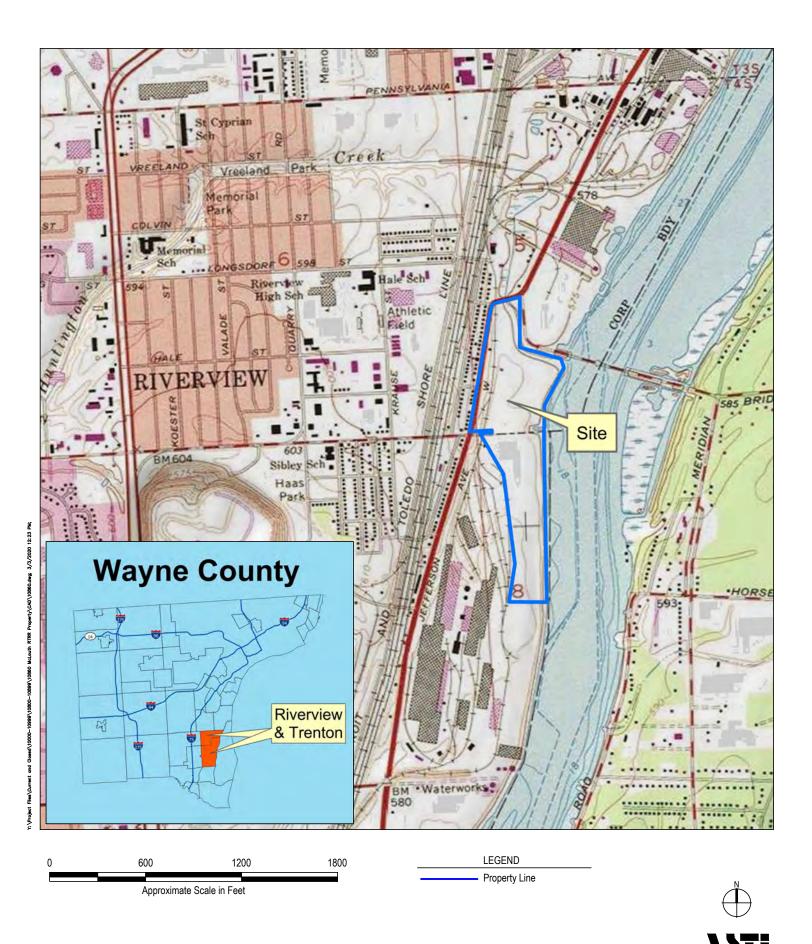
Greg S. Oslosky, P.G. Director – Grand Rapids

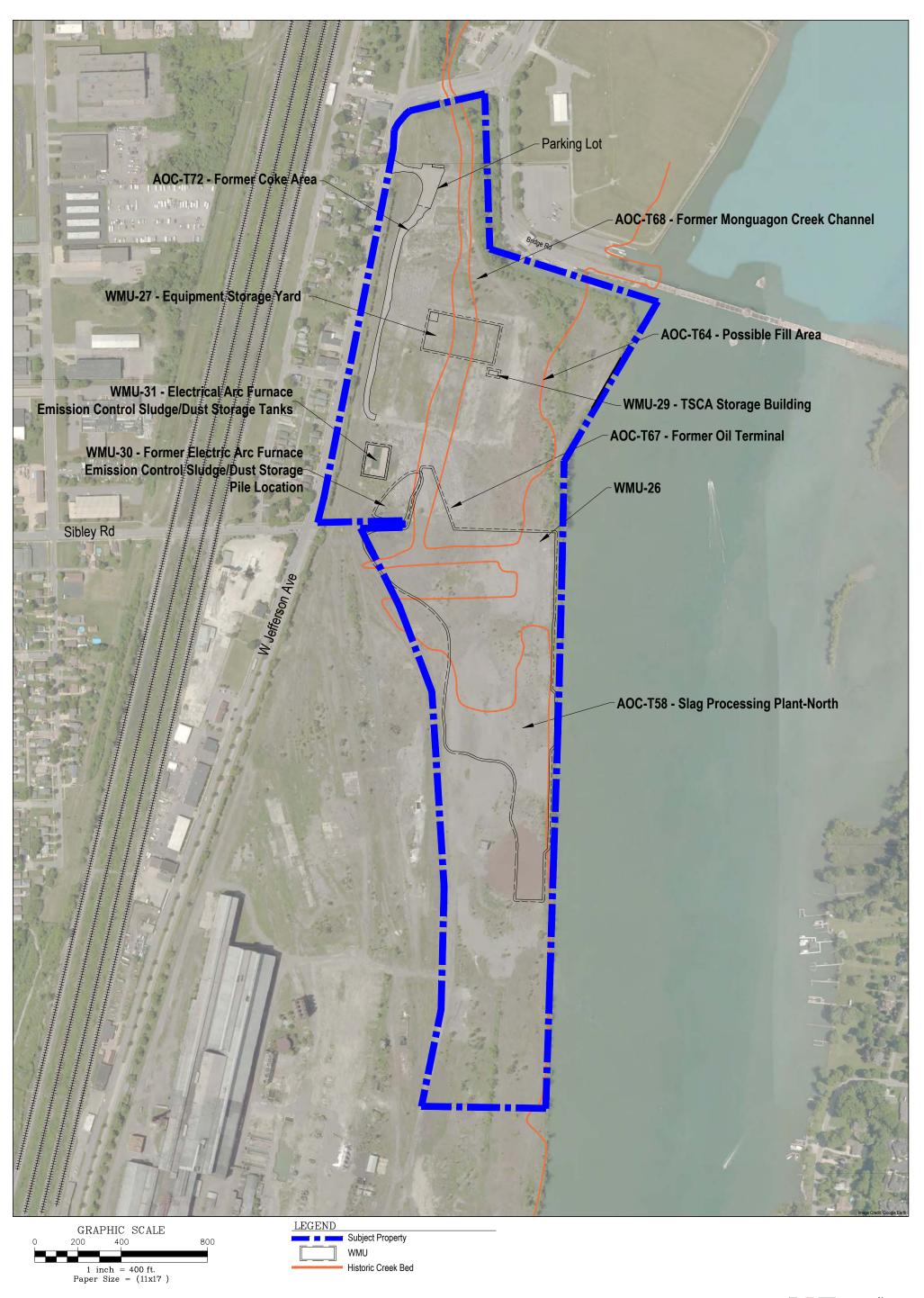
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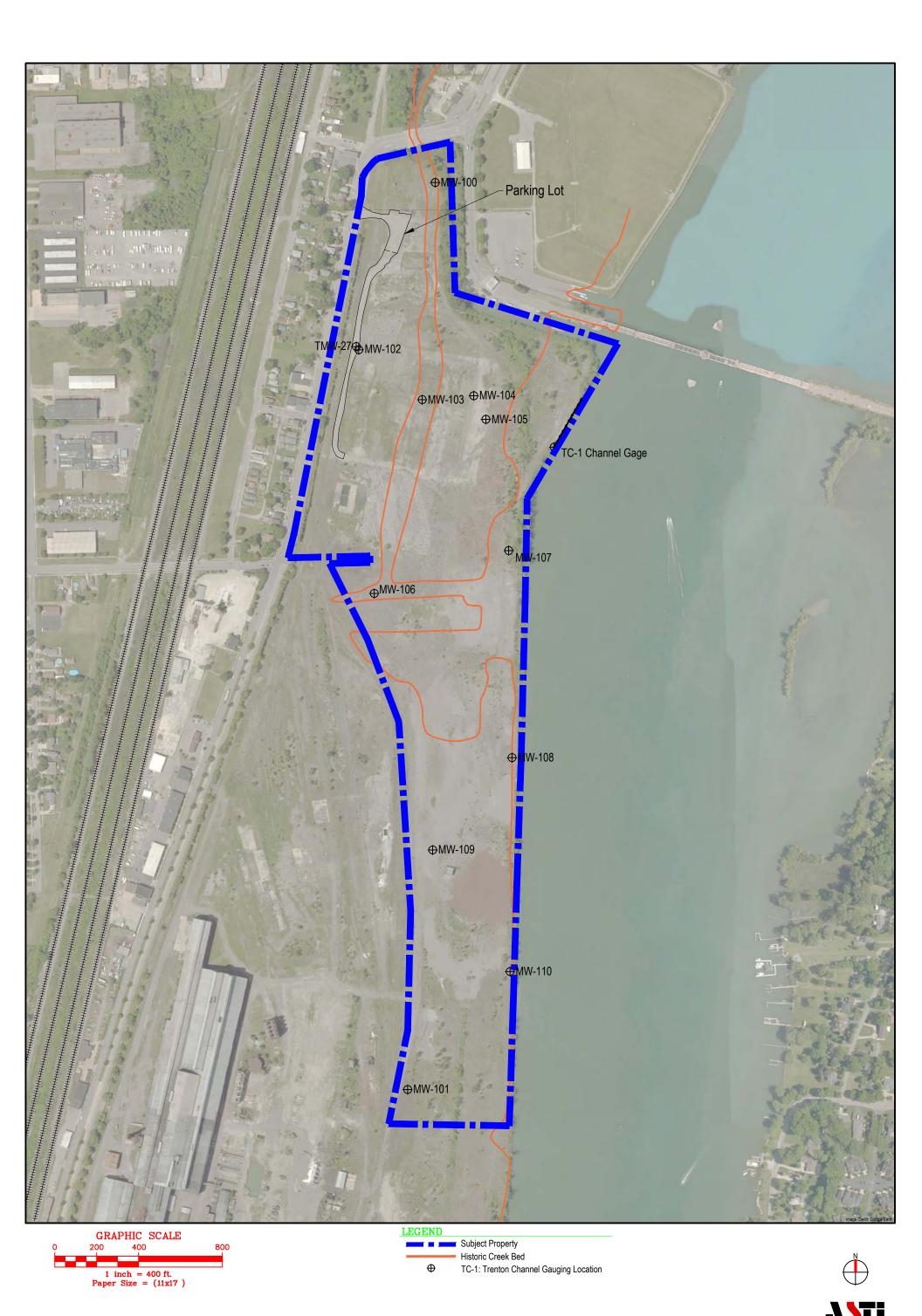
FIGURES

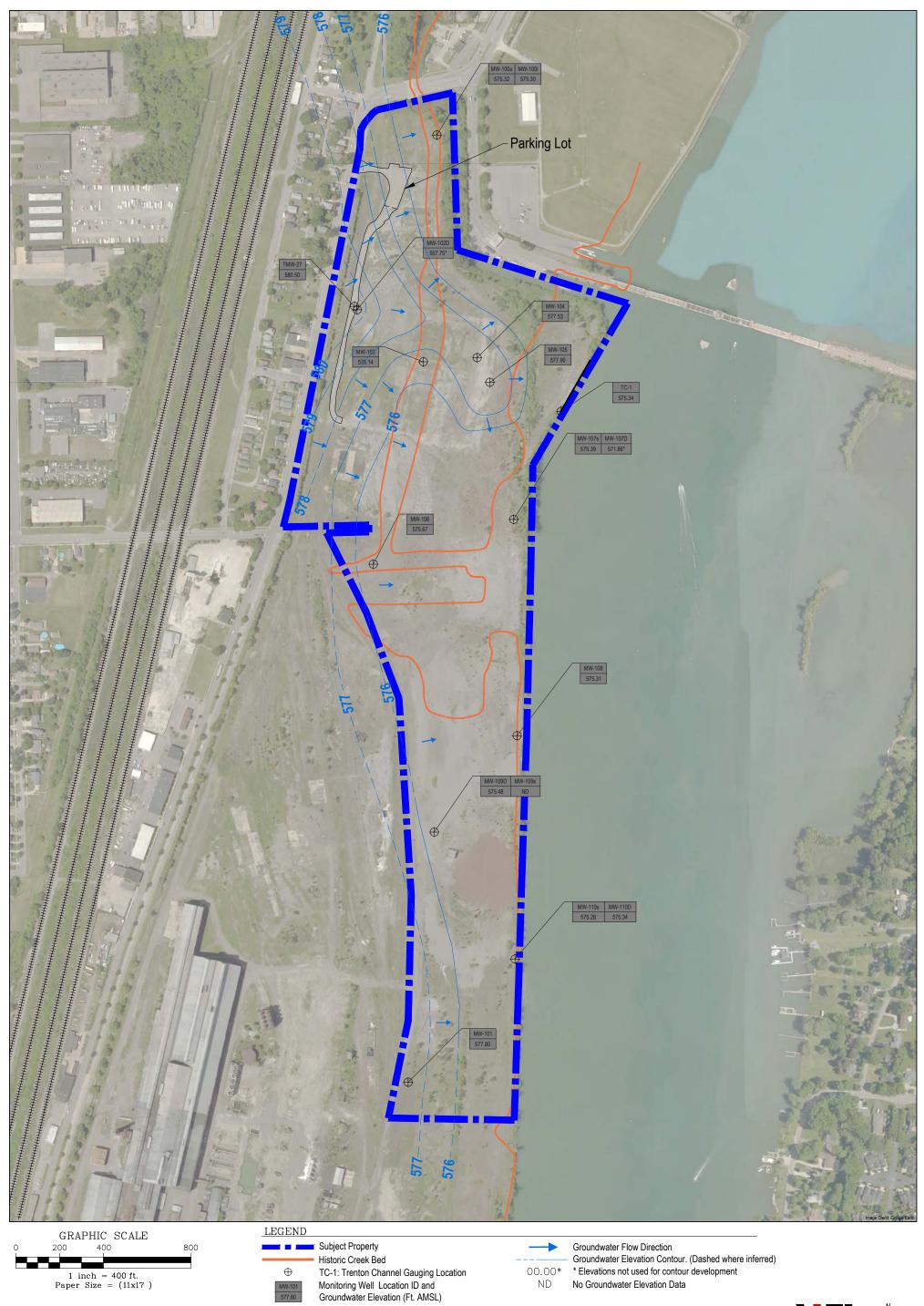
- 1 Site Location Map
- 2 RTRR Site Features Map
- 3 Well Location Map
- 4 Shallow Groundwater Elevation Contour Map March 18, 2020
- 5 Shallow Groundwater Elevation Contour Map July 7, 2020
- 6 Shallow Groundwater Elevation Contour Map July 29, 2020
- 7 Groundwater Concentrations Exceeding GNRCC Map –Metals
- 8 Groundwater Concentrations Exceeding GNRCC Map -VOCs and SVOCs

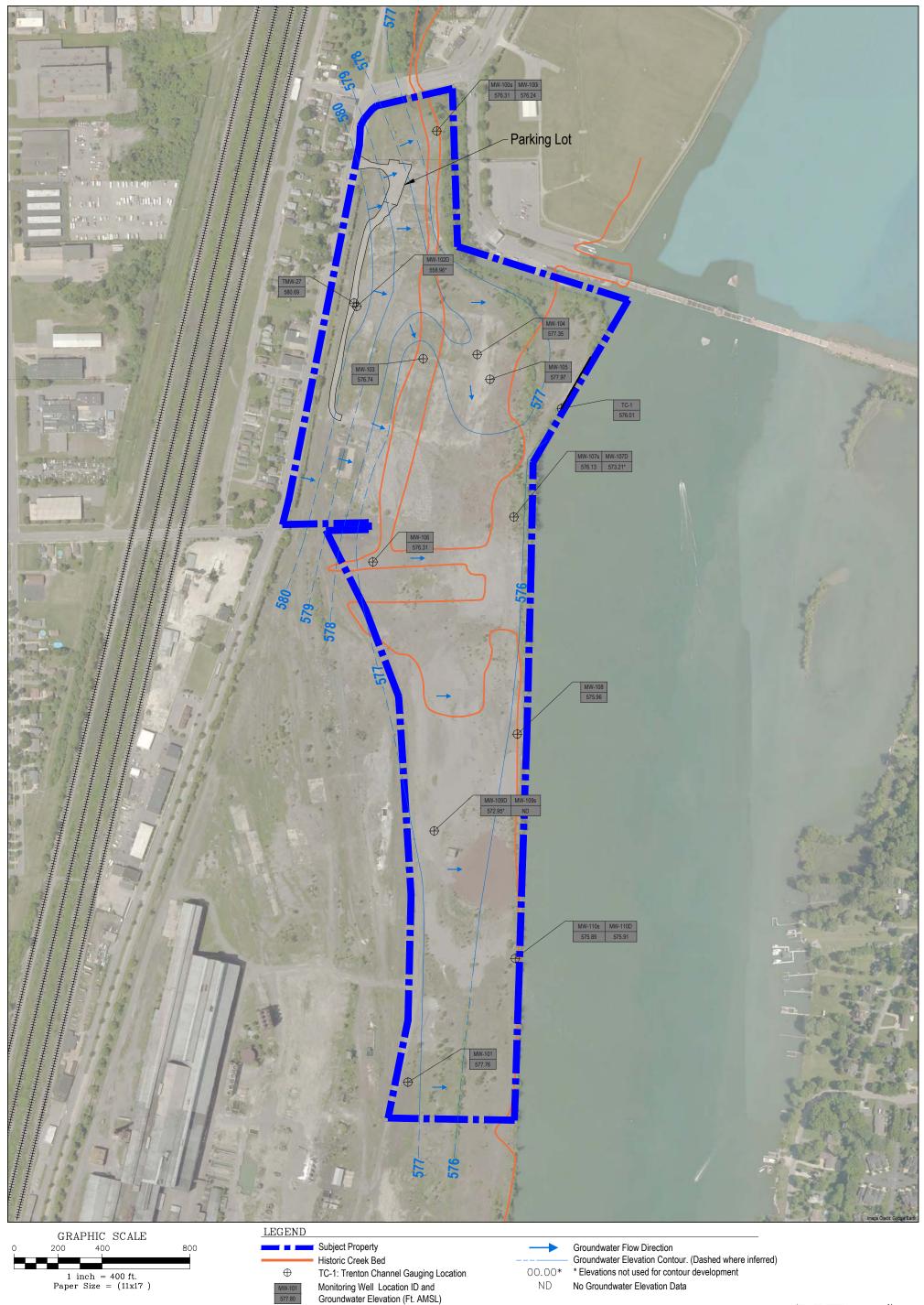


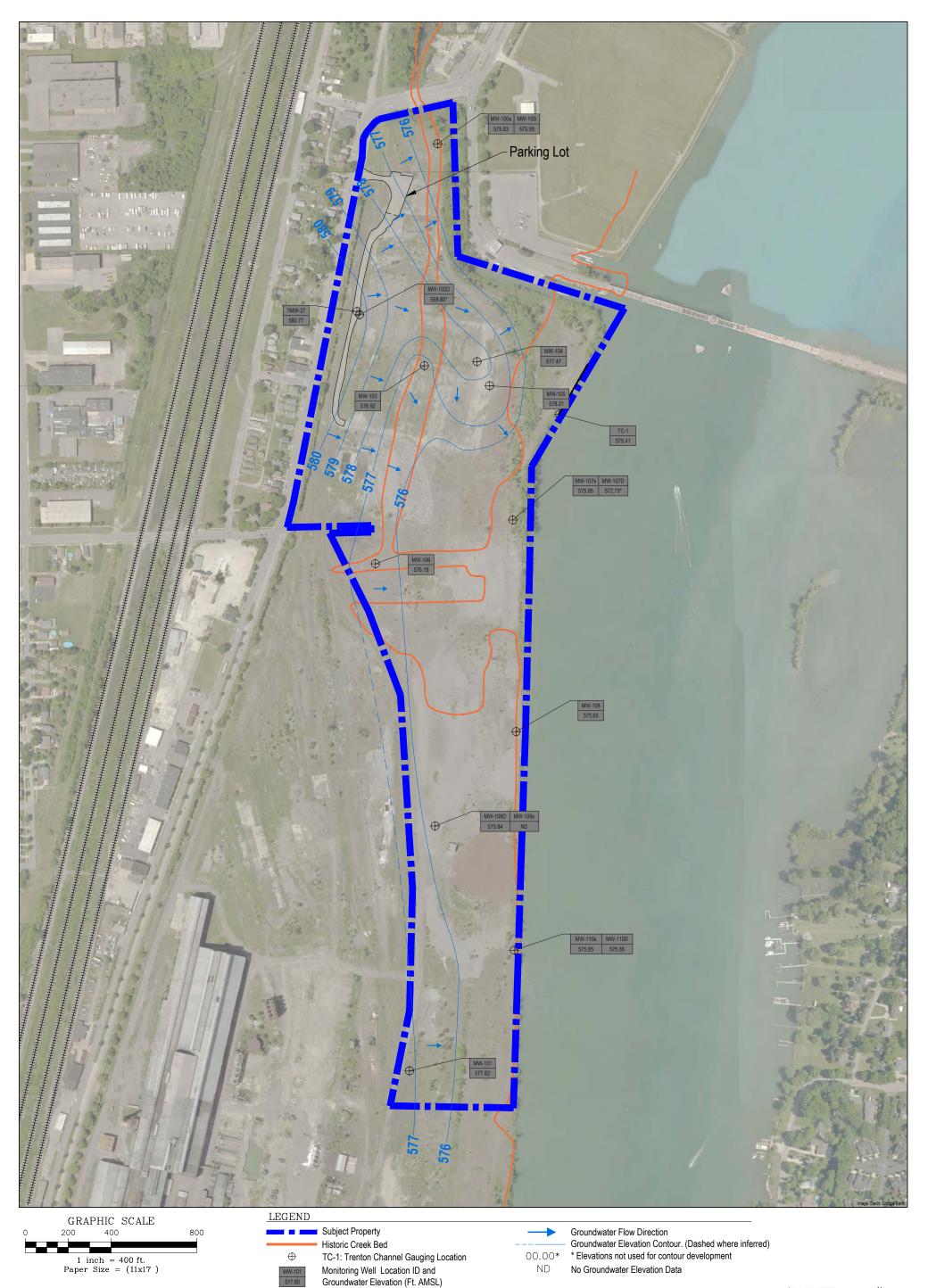


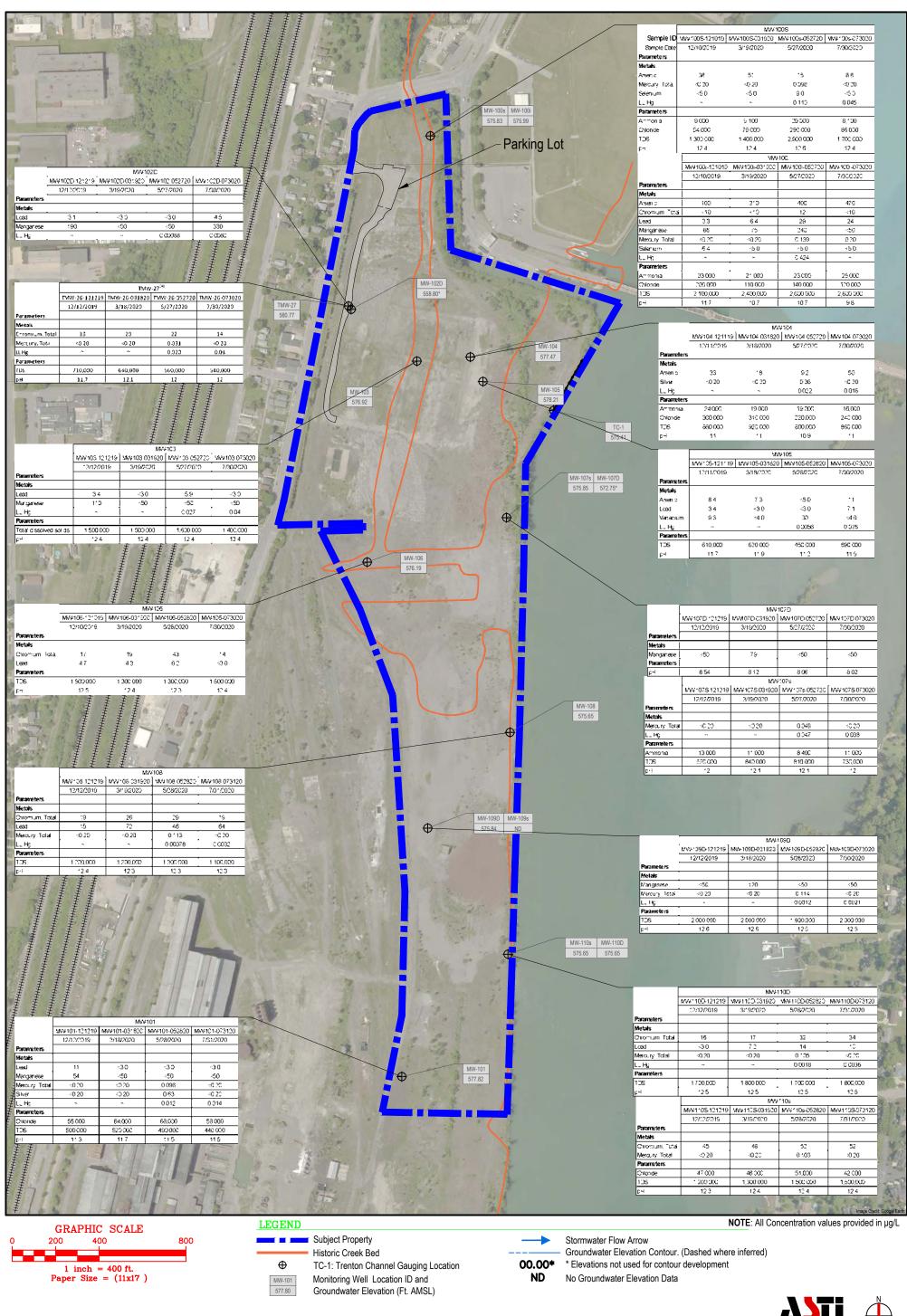


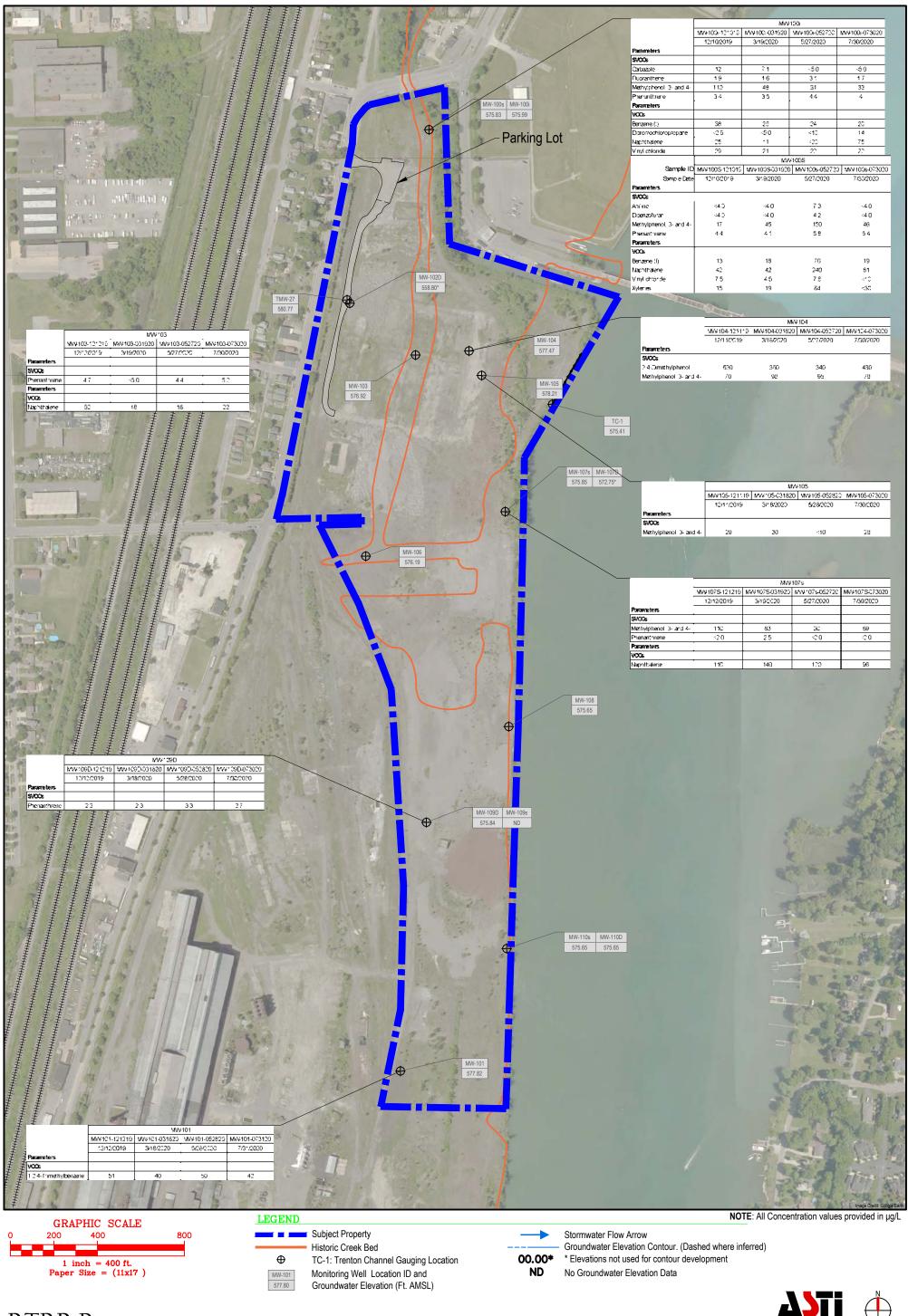












TABLES

- 1 Summary of Groundwater Monitoring Wells
- 2 Summary of Groundwater Elevations
- 3 Summary of Slug Test Data
- 4 Summary of Groundwater Analytical Results
- 5 Groundwater Flow Calculations
- 6 Representative Concentrations
- 7a Chemical Mass Loading Northern Flow Zone
- 7b Chemical Mass Loading Southern Flow Zone



Table 1 Summary of Groundwater Monitoring Wells Depth, Elevation, and Location RTRR - Riverview

18251 W. Jefferson, Riverview ASTI Project No.: 10860

					Screen Inter	val (ft. BGS)		Screen Elevati	ion (ft. AMSL)	Locatio	n ⁽³⁾
		Total Drilled Depth	Well Depth (ft.	Top of PVC Elevation		Bottom of	Screen		Bottom of		
Location ID	Monitoring Well ID	(ft. BGS) ⁽¹⁾	BGS)	(ft. AMSL) ⁽²⁾	Top of Screen	Screen	Length (ft.)	Top of Screen	Screen	Easting	Northing
MW-100	MW-100s	27	14	581.97	4	14	10	574.4	564.4	13448499.446	248577.372
10100-100	MW-100i	27	27	581.92	17	27	10	561.4	551.4	13446433.440	246377.372
MW-101	MW-101	30	30	593.15	10	30	20	579.5	559.5	13448459.271	244290.332
MW-102D	MW-102D	55	55	592.05	50	55	5	539.5	534.5	13448148.742	247771.931
TMW-27	TMW-27	16	14	592.02	4	14	10	583.8	573.8	13448116.296	247779.702
MW-103	MW-103	27	27	592.11	7	27	20	572.5	562.5	13448472.443	247545.746
MW-104	MW-104	55	19	591.68	9	19	10	579.4	569.4	13448716.549	247573.896
MW-105	MW-105	13	13	592.15	3	13	10	585.7	575.7	13448776.156	247457.881
MW-106	MW-106	25	15	593.87	5	25	20	585.7	565.7	13448256.357	246609.325
MW-107	MW-107s	48	19	590.47	9	19	10	577.5	567.5	13448892.413	246834.696
10100-107	MW-107D	40	48	590.19	43	48	5	543.5	538.5	13446692.413	240834.090
MW-108	MW-108	35	35	595.18	20	35	15	572.1	557.1	13448926.796	245839.708
NAVA 400	MW-109S	20	10	599.91	5	10	5	591.0	586.0	12440542 400	245202.064
MW-109	MW-109D	30	30	599.93	25	30	5	571.0	566.0	13448543.489	245393.964
MW-110	MW-110S	31	19	591.23	9	19	10	578.5	568.5	13448929.408	244810.710
14144-110	MW-110D	31	31	591.22	26	31	5	561.5	556.5	13446323.408	244010.710

Notes:

(1) "ft. BGS" - feet below ground surface

(2) "ft. AMSL" - feet above mean sea level

(3) State Plane 2113 - Michigan South

Table 2 Summary of Ground Water Elevations RTRR - Riverview 18251 W. Jefferson Ave., Riverview, MI ASTI Project No. 10860

		1	Lst Quarterly E	vent	2	nd Quarterly E	vent	3	rd Quarterly	Event	July	7, 2020 Gaugi	ng Event	4	th Quarterly I	vent
	Date		12/10/201	9		3/18/2020			5/27/2020	0		7/7/2020			7/29/2020)
Well ID	Top of Casing Elevation (ft. AMSL) ⁽¹⁾	Measuring Point	Depth to Water (ft. BGS) ⁽²⁾	Groundwater Elevation (ft. AMSL)	Measuring Point	Depth to Water (ft. BTOC) ⁽³⁾	Groundwater Elevation (ft. AMSL)	Measuring Point	Depth to Water (ft. BTOC)	Groundwater Elevation (ft. AMSL)	Measuring Point	Depth to Water (ft. BTOC)	Groundwater Elevation (ft. AMSL)	Measuring Point	Depth to Water (ft. BTOC)	Groundwater Elevation (ft. AMSL)
MW-100s	581.973	GS ⁽⁴⁾	4.09	_(5)	TOC ⁽⁶⁾	6.65	575.32	GS	2.50	-	TOC	5.66	576.31	TOC	6.14	575.83
MW-100i	581.923	GS	4.17	-	TOC	6.62	575.30	GS	2.50	-	TOC	5.68	576.24	TOC	5.93	575.99
MW-101	593.148	GS	11.92	-	TOC	15.35	577.80	TOC	15.00	578.15	TOC	15.39	577.76	TOC	15.33	577.82
MW-102D	592.052	GS	31.88	-	TOC	34.3	557.75	TOC	33.64	558.41	TOC	33.09	558.96	TOC	33.25	558.80
MW-103	592.112	GS	11.07	-	TOC	15.97	576.14	GS	11.35	-	TOC	15.37	576.74	TOC	15.19	576.92
MW-104	591.683	GS	10.94	-	TOC	14.15	577.53	GS	10.22	-	TOC	14.33	577.35	TOC	14.21	577.47
MW-105	592.148	GS	10.52	-	TOC	14.25	577.90	GS	10.20	-	TOC	14.18	577.97	TOC	13.94	578.21
MW-106	593.874	GS	16.3	-	TOC	18.2	575.67	TOC	17.20	576.67	TOC	17.56	576.31	TOC	17.68	576.19
MW-107s	590.473	GS	11.15	-	TOC	15.08	575.39	TOC	15.55	574.92	TOC	14.34	576.13	TOC	14.62	575.85
MW-107D	590.193	GS	14.97	-	TOC	18.33	571.86	TOC	19.07	571.12	TOC	16.98	573.21	TOC	17.44	572.75
MW-108	595.178	GS	17.52	-	TOC	19.87	575.31	TOC	19.25	575.93	TOC	19.22	575.96	TOC	19.53	575.65
MW-109s	599.906	GS	Dry ⁽⁷⁾	-	TOC	Dry	-	TOC	Dry	-	TOC	Dry	-	TOC	Dry	-
MW-109D	599.926	GS	21.17	-	TOC	24.45	575.48	TOC	25.02	574.91	TOC	26.98	572.95	TOC	24.09	575.84
MW-110s	591.227	GS	13.08	-	TOC	15.95	575.28	TOC	16.37	574.86	TOC	15.34	575.89	TOC	15.58	575.65
MW-110D	591.217	GS	13.03	-	TOC	15.88	575.34	TOC	16.42	574.80	TOC	15.31	575.91	TOC	15.57	575.65
TMW-27	592.016	N/A	N/A	-	TOC	11.52	580.50	GS	9.23	-	TOC	11.33	580.69	TOC	11.25	580.77
Trenton Channel ⁽⁸⁾	579.324	Top of Wall	4.12	575.20	Top of Wall	3.98	575.34	Top of Wall	3.50	575.82	Top of Wall	3.31	576.01	Top of Wall	3.91	575.41

Notes:

- (1) ft. AMSL denotes feet above mean seal level. The measuring point elevation is the top of PVC casing.
- (2) ft. BGS denotes feet below ground surface.
- (3) ft. BTOC denotes feet below top of casing.
- (4) "GS" Ground Surface.
- (5) "-" groundwater elevation not calculated. Measurements collected from the ground surface were not precise enough for calculation of accurate elevations
- (6) "TOC" Top of Casing.
- (7) "Dry" indicates no water in the well.
- (8) Trenton Channel measurments collected from top of sheet-pile wall at surveyed location

Table 3
Summary of Slug Test Data
August 4, 2020
RTRR - Riverview
18251 West Jefferson Ave, Riverview, MI

ASTI Project No.: 10860

_			Hydraulic		Average Value		
Well ID	Test ID	Test Type	Conductivity	Units	(per well)	Units	Screened Interval
MW-100s	Slug In 1	Falling Head	1.8	ft/day	1.8	ft/day	silty sand and gravel, gravel, clayey sand and gravel
MW-100i	Slug In 1	Falling Head	0.26	ft/day			
MW-100i	Slug Out 1	Rising Head	0.093	ft/day	0.18	ft/day	clayey sand
MW-101	Slug In	Falling Head	5.0	ft/day			
MW-101	Slug Out	Rising Head	0.25	ft/day	2.63	ft/day	silty sand
MW-104	Slug In 1	Falling Head	3.5	ft/day	3.5	ft/day	clayey sand
MW-109D	Slug In 1	Falling Head	11	ft/day			
MW-109D	Slug Out 1	Rising Head	11	ft/day			
MW-109D	Slug In 2	Falling Head	18	ft/day			
MW-109D	Slug Out 2	Rising Head	11	ft/day	12.8	ft/day	fine sand

Geometric Mean:	2.1 ft/day
-----------------	------------

Note:

Previous slug testing conducted by others resulted in a hydraulic conductivity of 14.7 ft/day (1.02E-02 ft/min).

Table 4 Summary of Groundwater Analytical Results RTRR - Riverview 18251 W. Jefferson, Riverview, MI ASTI Project No. 10860

		No	C	Groundwater	W-II IB			1000		1		100									
		Nonresidential Drinking	Groundwater Surface Water	Volatilization to Indoor Air	Well ID Sample ID	MW-100S-121019 MV	MW-: W-100S-031920		MW-100s-073020	MW-100i-121019		-100i MW-100i-052720	MW-100i-073020	MW-101-121219		V-101 MW-101-052820	MW-101-073120	MW-102D-121219	MW-102D-031920		MW-102D-07
arameters	CAS Number ⁽¹⁾	Water Criteria*	Interface Criteria	Inhalation Criteria*	Date Units	12/10/2019	3/19/2020	5/27/2020	7/30/2020	12/10/2019	3/19/2020	5/27/2020	7/30/2020	12/12/2019	3/18/2020	5/28/2020	7/31/2020	12/12/2019	3/19/2020	5/27/2020	7/30/202
tals	CAS Nulliber	Citteria	Citteria	Criteria	Onits																
senic	7440-38-2	10 (A)	10	NLV	$\mu g/L^{(2)}$	38	51	15	8.8	100	210	400	470	6	5.5	7.2	5.3	<5.0	<5.0	<5.0	<5.0
ium	7440-39-3	2,000 (A)	(G)	NLV	μg/L	120	190	670	320	<100	<100	<100	<100	120	130	130	110	110	<100	<100	110
omium, Total	7440-47-3	100 (A)	11	NLV	μg/L	<10	<10	<10	<10	<10	<10	12	<10	<10	<10	<10	<10	<10	<10	<10	<10
per	7440-50-8	1,000 (E)	(G)	NLV	μg/L	<4.0	<4.0	<4.0	<4.0	<4.0 3.3	6.2	27	22	<4.0	<4.0	<4.0	<4.0	<4.0 3.1	<4.0	<4.0	4.5
d nganese	7439-92-1 7439-96-5	4.0 (L) 50 (E)	(G,X) (G,X)	NLV NLV	μg/L μg/L	<3.0 <50	<3.0 <50	<3.0 <50	<3.0 <50	3.3	6.4 75	29 240	24 <50	11 54	<3.0 <50	<3.0 <50	<3.0 <50	3.1 190	<3.0 <50	<3.0 <50	4.5 330
rcury, Total	7439-97-6	2.0 (A)	0.0013	56 (S)	μg/L μg/L	<0.20	<0.20	0.098	<0.20	<0.20	<0.20	0.139	0.20	<0.20	<0.20	0.096	<0.20	<0.20	<0.20	<0.025	<0.2
ckel	7440-02-0	100 (A)	(G)	NLV	μg/L	<20	<20	35	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
lenium	7782-49-2	50 (A)	5	NLV	μg/L	<5.0	<5.0	9.0	<5.0	6.4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
ver	7440-22-4	98	0.2 (M); 0.06	NLV	μg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.63	<0.20	<0.20	<0.20	<0.20	<0.2
anadium	7440-62-2	62	27	NLV	μg/L	<4.0	<4.0	<4.0	<4.0	12	13	15	16	<4.0	<4.0	<4.0	<4.0	4	<4.0	<4.0	12
nc	7440-66-6	5,000 (E)	(G)	NLV	μg/L	<50	<50	<50	<50	<50	<50	60	<50	<50	<50	<50	<50	<50	<50	<50	<50
rcury, Low Level Analysis	7439-97-6	2.0 (A)	0.0013	56 (S)	μg/L	~	~	0.110	0.045	~	~	0.424	~	~	~	0.012	0.014	~	~	0.00088	0.008
i Volatile Organic Compounds																					
naphthene	83-32-9	3,800	38	4,200 (S)	μg/L	<5.0	<5.0	6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
enaphthylene	208-96-8	150	ID	3,900 (S)	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
iline	62-53-3	220	4.0 (M); 3.0	NLV	μg/L	<4.0	<4.0	7.3	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<5.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
chracene Obenzene	120-12-7 103-33-3	43 (S) 94	ID ID	43 (S) 6,400 (S)	μg/L μg/L	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
izo(a)anthracene (Q)	56-55-3	8.5	ID	6,400 (5) NLV	μg/L μg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1	<1.0	<1.0	<5.0 <5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
nzo(a)pyrene (Q)	50-32-8	5.0 (A)	ID	NLV	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
nzo(b)fluoranthene (Q)	205-99-2	1.5 (S, AA)	ID	ID	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
nzo(g,h,i)perylene	191-24-2	1.0 (M); 0.26 (S)	ID	NLV	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
nzo(k)fluoranthene (Q)	207-08-9	1.0 (M); 0.8 (S)	NA	NLV	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
nzyl alcohol	100-51-6	29,000	NA	NLV	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
romophenyl Phenylether yl benzyl phthalate	101-55-3 85-68-7	2,700 (S)	67 (X)	- NLV	μg/L ug/l	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
bazole	86-74-8	350	10 (M); 4.0	NLV	μg/L μg/L	<5.0	<5.0	7.8	<5.0	12	7.1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
hloro-3-methylphenol	59-50-7	420	7.4	NLV	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-chloroethoxy)methane	111-91-1	-	=	=	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Chloroethyl)ether (I)	111-44-4	8.3	1.0 (M); 0.79	210,000	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-chloroisopropyl) Ether	108-60-1	-	-	-	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
a-Chloronaphthalene	91-58-7	5,200	NA	ID	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
hlorophenol	95-57-8	130	18	1,100,000	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
hlorophenyl Phenylether	7005-72-3	- (6)	- ID	-	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
rysene (Q)	218-01-9	1.6 (S)	ID ID	ID NIV	μg/L	<1.0	<1.0	<1.0 <2.0	<1.0	<1.0	<1.0 <2.0	<1.0 <2.0	<1.0 <2.0	<1.0	<5.0 <5.0	<1.0 <2.0	<1.0	<1.0 <2.0	<1.0	<1.0	<1.0 <2.0
penzo(a,h)anthracene (Q) penzofuran	53-70-3 132-64-9	2.0 (M); 0.85 ID	4.0	NLV 10,000 (S)	μg/L μg/L	<2.0 <4.0	<2.0 <4.0	4.2	<2.0 <4.0	<2.0 <4.0	<4.0	<4.0	<4.0	<2.0 <4.0	<5.0	<4.0	<2.0 <4.0	<4.0	<2.0 <4.0	<2.0 <4.0	<4.0
1-Dichlorophenol	120-83-2	210	11	NLV	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
thyl phthalate	84-66-2	16,000	110	NLV	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
-Dimethylphenol	105-67-9	1,000	380	NLV	μg/L	18	29	39	30	24	14	7.2	7.1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
nethyl phthalate	131-11-3	210,000	NA	NLV	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
n-butyl phthalate	84-74-2	2,500	9.7	NLV	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
-Dinitrophenol	51-28-5	-	-	-	μg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<100	<20	<20	<20	<20	<20	<20
-Dinitrotoluene	121-14-2	32	NA	NLV	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
-Dinitrotoluene n-octyl phthalate	606-20-2 117-84-0	380	ID	NLV	μg/L μg/L	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
(2-Ethylhexyl)phthalate	117-84-0	6.0 (A)	14	NLV	μg/L μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
oranthene	206-44-0	210 (S)	1.6	210 (S)	μg/L	1.1	<1.0	1.1	1.2	1.9	1.6	3.1	1.7	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
orene	86-73-7	2,000 (S)	12	2,000 (S)	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
rachlorobenzene (C-66)	118-74-1	1.0 (A)	0.2 (M); 0.0003	3,000	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
achlorobutadiene (C-46)	87-68-3	42	0.053	3,200 (S)	μg/L	<5.0	<5.0	~	~	<5.0	<5.0	~	~	<5.0	<25	~	~	<5.0	<5.0	~	~
achlorocyclopentadiene (C-56)	77-47-4	50 (A)	ID	420	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
kachloroethane	67-72-1	21	6.7 (X)	50,000 (S)	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
eno(1,2,3-cd)pyrene (Q)	193-39-5	2.0 (M); 0.022 (S)	ID	NLV	μg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
phorone lethyl-4,6-dinitrophenol	78-59-1	3,100	1,300 (X) NA	NLV NI V	μg/L	<5.0 <20	<5.0 <20	<5.0	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <50	<5.0 <20	<5.0 <20	<5.0 <20	<5.0	<5.0 <20	<5.0 <20
1etnyl-4,6-dinitrophenol 1ethylnaphthalene	534-52-1 91-57-6	20 (M); 7.3 750	NA 19	25,000 (S)	μg/L ug/l	<20 <5.0	<20 <5.0	<20 7.3	<20 5.4	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0
thylphenol, 2-	91-57-6 95-48-7	-	19 82		μg/L μg/L	<5.0 <5.0	<5.0 <5.0	7.3 8.9	5.4 <5.0	<5.0 18	<5.0 18	13	<5.0 15	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
hylphenol, 3- and 4-	MEPH1314	-	25	-	μg/L μg/L	17	45	150	46	110	48	31	33	<10	<10	<10	<10	<10	<10	<10	<10
itroaniline	88-74-4	-	-	Ē	μg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
itroaniline	99-09-2	-	-	-	μg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
troaniline	100-01-6	-	=	=	μg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
bbenzene (I)	98-95-3	9.6	180 (X)	550,000	μg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.
trophenol	88-75-5	58	ID	NLV	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.
trophenol	100-02-7	-	=	-	μg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<20	<20	<20	<20	<20	<20
trosodimethylamine	62-75-9	E O (M): 0.33	- N:A	-	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.
troso-di-n-propylamine	621-64-7	5.0 (M); 0.77 1,100	NA NA	NLV	μg/L	<5.0	<5.0	<5.0	<5.0 <5.0	<5.0 <5.0	<5.0	<5.0	<5.0 <5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 <5.0	<5. <5.
itrosodiphenylamine tachlorophenol	86-30-6 87-86-5	1,100 1.0 (A)	NA (G,X)	NLV NLV	μg/L ug/l	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <100	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5. <20
tacniorophenoi nanthrene	87-86-5 85-01-8	1.0 (A) 150	(G,X) 2.0 (M); 1.7	1,000 (S)	μg/L μg/L	<20 4.4	<20 4.1	<20 5.8	<20 5.4	3.4	<20 3.5	<20 4.4	<20 4	<2.0 <2.0	<100 <5.0	<2.0 <2.0	<2.0 <2.0	<2.0 <2.0	<2.0 <2.0	<2.0 <2.0	<2 <2.
nol	108-95-2	13,000	450	1,000 (5) NLV	μg/L μg/L	12	23	5.8	23	77	3.5 44	24	29	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2. <5.
ene	129-00-0	140 (S)	ID	140 (S)	μg/L μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.
idine (I)	110-86-1	21	NA NA	12,000	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.
,5-Trichlorophenol	95-95-4	2,100	NA	NLV	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.
,6-Trichlorophenol	88-06-2	470	5.0	NLV	μg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<5.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.
										<u> </u>											
ychlorinated biphenyls (PCBs)	1336-36-3	0.5 (A)	0.2 (M); 2.5E-5	45 (S)	μg/L	<0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.2

Table 4 Summary of Groundwater Analytical Results RTRR - Riverview 18251 W. Jefferson, Riverview, MI ASTI Project No. 10860

		Nonresidential	Groundwater	Groundwater Volatilization to	Well ID		NA\A	V-100S		1	NAVA.	/-100i			MA	V-101		T	AANA	/-102D	
		Drinking Water	Surface Water Interface	Indoor Air Inhalation	Sample ID Date	MW-100S-121019 12/10/2019		0 MW-100s-052720 5/27/2020	MW-100s-073020 7/30/2020	MW-100i-121019 12/10/2019		MW-100i-052720 5/27/2020	MW-100i-073020 7/30/2020	MW-101-121219 12/12/2019			7/31/2020	0 MW-102D-121219 12/12/2019			MW-102D-07 7/30/202
Parameters	CAS Number ⁽¹⁾	Criteria*	Criteria	Criteria*	Units	12/10/2013	3/13/2020	3/2//2020	775072020	12/10/2015	3, 13, 2020	3,27,2020	7,50,2020	12/12/2013	3/10/2020	3,20,2020	7,51,2020	12,12,2013	3/13/2020	3/2//2020	
Volatile Organic Compounds Acetone (I)	67-64-1	2,100	1,700	1,000,000,000 (D,S)	μg/L	<50	<50	57	<200	<50	<50	<100	<200	<50	<50	<50	<200	<50	<50	<50	<50
Acrylonitrile (I)	107-13-1	11	2.0 (M); 1.2	190,000	μg/L	<5.0	<2.0	<10	<40	<5.0	<10	<40	<40	<2.0	<2.0	<2.0	<40	<2.0	<2.0	<2.0	<2.0
Benzene (I)	71-43-2	5.0 (A)	200 (X) NA	35,000	μg/L	13	18	76	19	38	26	24	20	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Bromobenzene (I) Bromochloromethane	108-86-1 74-97-5	50 -	NA -	390,000	μg/L μg/L	<5.0 <2.5	<1.0 <1.0	<2.5 <5.0	<10 <20	<5.0 <2.5	<5.0 <5.0	<10 <20	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
Bromodichloromethane	75-27-4	80 (A,W)	ID	37,000	μg/L	<5.0	<1.0	<2.5	<10	<2.5	<5.0	<10	<10	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Bromoform	75-25-2	80 (A,W)	ID 5.0 (M); 4.2	3,100,000 (S)	μg/L	<5.0	<1.0	<5.0	<20	<5.0	<10	<20	<20	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0	<1.0
Bromomethane 2-Butanone (MEK) (I)	74-83-9 78-93-3	29 38,000	2,200	9,000 240,000,000 (S)	μg/L μg/L	<25 <25	<5.0 <25	<25 <25	<100 <40	<10 <25	<20 <25	<100 <100	<100 <40	<5.0 <25	<5.0 <25	<5.0 <25	<100 <40	<5.0 <25	<5.0 <25	<5.0 <25	<5.0 <25
n-Butylbenzene	104-51-8	230	ID	ID	μg/L	<5.0	<1.0	<2.5	<10	<2.5	<5.0	<10	<10	3.2	2.7	3.3	<10	<1.0	<1.0	<1.0	<1.0
sec-Butylbenzene tert-Butylbenzene (I)	135-98-8 98-06-6	230 230	ID ID	ID ID	μg/L	<5.0 <2.5	<1.0 <1.0	<2.5 <2.5	<10 <10	<2.5 <2.5	<5.0 <5.0	<10 <10	<10 <10	1.9 <1.0	1.7 <1.0	1.8 <1.0	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
Carbon disulfide (I,R)	75-15-0	2,300	ID	550,000	μg/L μg/L	<5.0	<5.0	9.6	<20	34	25	<20	<20	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0
Carbon tetrachloride	56-23-5	5.0 (A)	38 (X)	2,400	μg/L	<5.0	<1.0	<2.5	<10	<5.0	<10	<10	<10	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Chlorobenzene (I) Chloroethane	108-90-7 75-00-3	100 (A) 1,700	25 1,100 (X)	470,000 (S) 5,700,000 (S)	μg/L μg/L	<5.0 <5.0	<1.0 <5.0	<2.5 <5.0	<10 <40	<2.5 <5.0	<5.0 <5.0	<10 <20	<10 <40	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<10 <40	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0
Chloroform	67-66-3	80 (A,W)	350	180,000	μg/L μg/L	<2.5	<1.0	<2.5	<10	<5.0	<5.0	<10	<10	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Chloromethane (I)	74-87-3	1,100	ID	45,000	μg/L	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<20	<20	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0
o-Chlorotoluene (I) Dibromochloromethane	95-49-8 124-48-1	420 80 (A,W)	ID ID	370,000 (S) 110,000	μg/L	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<10 <20	<5.0 <5.0	<5.0 <5.0	<10 <20	<10 <20	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<10 <20	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
Dibromochloropropane	96-12-8	0.2 (A)	I ID	1,200 (S)	μg/L μg/L	<5.0	<1.0	<2.5	<10	<2.5	<5.0	<10	14	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Dibromomethane	74-95-3	230	NA	ID	μg/L	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	<10	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0
1,2-Dichlorobenzene	95-50-1 541-72-1	600 (A) 19	13 28	160,000 (S)	μg/L	<2.5	1.8	5.7	<10 <10	<2.5	<5.0	<10	<10 <10	<1.0	<1.0	<1.0	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0	<1.0
1,3-Dichlorobenzene 1,4-Dichlorobenzene	541-73-1 106-46-7	19 75 (A)	28 17	41,000 74,000 (S)	μg/L μg/L	<2.5 <5.0	<1.0 <1.0	<2.5 <5.0	<10 <20	<2.5 <2.5	<5.0 <5.0	<10 <20	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
Dichlorodifluoromethane	75-71-8	4,800	ID	300,000 (S)	μg/L	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	<10	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethane	75-34-3 107-06-2	2,500	740 360 (X)	2,300,000	μg/L	<5.0	<1.0	<2.5	<10 <10	<2.5	<5.0	<10	<10 <10	<1.0 <1.0	<1.0	<1.0 <1.0	<10 <10	<1.0 <1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane (I) cis-1,2-Dichloroethylene	107-06-2 156-59-2	5.0 (A) 70 (A)	360 (X) 620	59,000 210,000	μg/L μg/L	<5.0 5.5	<1.0 3.3	<2.5 5.3	<10 <10	<2.5 21	<5.0 20	<10 20	<10 22	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
trans-1,2-Dichloroethylene	156-60-5	100 (A)	1,500 (X)	200,000	μg/L	<2.5	<1.0	<2.5	<20	<2.5	<5.0	<10	<20	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene (I) 1,2-Dichloropropane (I)	75-35-4 78-87-5	7.0 (A) 5.0 (A)	130 230 (X)	1,300 36,000	μg/L	<2.5 <2.5	<1.0 <1.0	<2.5 <2.5	<10 <10	<2.5 <2.5	<5.0 <5.0	<10 <10	<10 <10	<1.0	<1.0	<1.0 <1.0	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
cis-1,3-Dichloropropylene	78-87-5 10061-01-5	5.0 (A)	230 (X)	36,000	μg/L μg/L	<2.5 <2.5	<0.50	<2.5 <2.5	<10	<2.5	<5.0 <5.0	<10	<10	<1.0 <0.50	<1.0 <0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50
trans-1,3-Dichloropropylene	10061-02-6	-	-	-	μg/L	<2.5	<0.50	<2.5	<10	<2.5	<5.0	<10	<10	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50
Ethylbenzene (I)	100-41-4	74 (E)	18	170,000 (S)	μg/L	<2.5	2.2	9.3	<10	3.1	<5.0	<10	<10	5.9	5.1	5.2	<10	<1.0	<1.0	<1.0	<1.0
Ethylene dibromide Hexachloroethane	106-93-4 67-72-1	0.05 (A) 21	5.7 (X) 6.7 (X)	15,000 50,000 (S)	μg/L μg/L	<2.5 <5.0	<1.0 <5.0	<2.5 <5.0	<10 <5.0	<2.5 <5.0	<5.0 <5.0	<10 <5.0	<10 <5.0	<1.0 <5.0	<1.0 <25	<1.0 <5.0	<10 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0
2-Hexanone	591-78-6	2,900	ID	8,700,000	μg/L	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50	<50	<50	<50	<50	<50	<50
Isopropyl benzene	98-82-8	2,300	28	56,000 (S)	μg/L	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	<10	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-pentanone (MIBK) (I) Methylene chloride	108-10-1 75-09-2	5,200 5.0 (A)	ID 1,500 (X)	20,000,000 (S) 1,400,000	μg/L μg/L	<50 <5.0	<50 <5.0	<50 <5.0	<100 <20	<50 <5.0	<50 <5.0	<50 <10	<100 <20	<50 <5.0	<50 <5.0	<50 <5.0	<100 <20	<50 <5.0	<50 <5.0	<50 <5.0	<50 <5.0
Methyl-tert-butyl ether (MTBE)	1634-04-4	40 (E)	7,100 (X)	47,000,000 (S)	μg/L	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	<10	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0
Naphthalene	91-20-3	1,500	11	31,000 (S)	μg/L	42	42	240	61	25	11	<20	75	11	7.6	8.7	<20	<5.0	<5.0	<5.0	<5.0
n-Propylbenzene (I) Styrene	103-65-1 100-42-5	230 100 (A)	ID 80 (X)	ID 310,000 (S)	μg/L μg/L	<2.5 <5.0	1.9 <1.0	<2.5 <5.0	<10 <20	<2.5 <2.5	<5.0 <5.0	<10 <20	<10 <20	4.3 <1.0	4.1 <1.0	4.4 <1.0	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
1,1,1,2-Tetrachloroethane	630-20-6	320	ID	96,000	μg/L	<2.5	<1.0	<5.0	<20	<2.5	<5.0	<20	<20	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	79-34-5	35	78 (X)	77,000	μg/L	<5.0	<1.0	<2.5	<10	<2.5	<5.0	<10	11	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Tetrachloroethylene Toluene (I)	127-18-4 108-88-3	5.0 (A) 790 (E)	60 (X) 270	170,000 530,000 (S)	μg/L μg/L	<2.5 4	<1.0 5	<2.5 20	<10 <10	<2.5 7.5	<5.0 5.9	<10 <10	<10 <10	<1.0 1.7	<1.0 1.6	<1.0 1.6	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
1,2,4-Trichlorobenzene	120-82-1	70 (A)	99 (X)	300,000 (S)	μg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<25	<5.0	<20	<5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	71-55-6	200 (A)	89	1,300,000 (S)	μg/L	<2.5	<1.0	<2.5	<10	<2.5	<5.0	<10	<10	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane Trichloroethylene	79-00-5 79-01-6	5.0 (A) 5.0 (A)	330 (X) 200 (X)	110,000 4,900	μg/L μg/L	<2.5 <2.5	<1.0 <1.0	<5.0 <2.5	<20 <10	<2.5 5.0	<5.0 <5.0	<20 <10	<20 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
Trichlorofluoromethane	75-69-4	7,300	NA NA	1,100,000 (S)	μg/L	<5.0	<1.0	<2.5	<10	<2.5	<5.0	<10	<10	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<2.0
1,2,3-Trichloropropane	96-18-4 526-73-8	120	NA	18,000	μg/L	<5.0	<1.0	<5.0	<20 <10	<5.0	<5.0	<20	<20	<1.0 29	<1.0 25	<1.0 30	<20 28	<1.0	<1.0	<1.0	<1.0
1,2,3-Trimethylbenzene 1,2,4-Trimethylbenzene	95-63-6	63 (E)	17	56,000 (S)	μg/L μg/L	3.3 <5.0	4.6	9.9 15	<10	8	<5.0 5.6	<10 <10	<10 <10	51	40	50	42	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
1,3,5-Trimethylbenzene	108-67-8	72 (E)	45	61,000 (S)	μg/L	4.8	4.4	12	<10	12	8.7	<10	<10	13	11	13	13	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	75-01-4	2.0 (A)	13 (X)	13,000	μg/L	7.5	4.5	7.6	<10	29	21	22	22	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0
m&p-Xylene o-Xylene	136777-61-2 95-47-6	-	-	-	μg/L μg/L	9.9 4.7	13 6.2	55 29	<20 <10	17 7.8	12 5.6	<20 <10	<20 <10	28 13	23 10	25 11	24 12	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0
Xylenes	1330-20-7	280 (E)	49	190,000 (S)	μg/L	15	19	84	<30	25	17	<30	<30	41	33	36	36	<3.0	<3.0	<3.0	<3.0
Ammonia	7664-41-7	10,000 (N)	(CC)	7,100,000	μg/L	9,000	9,100	29,000	8,100	33,000	21,000	23,000	25,000	3,800	3,200	3,400	3,100	100	61	58	150
Chloride Total dissolved solids	16887-00-6 TDS	250,000 (E) 500,000 (E)	50,000 500,000	NLV ID	μg/L	54,000 1,300,000	79,000 1,400,000	290,000 2,900,000	86,000 1,700,000	200,000 2,100,000	110,000 2,400,000	140,000 2,600,000	120,000 2,800,000	55,000 500,000	64,000 520,000	68,000 490,000	58,000 440,000	15,000 350,000	16,000 320,000	17,000 300,000	16,000 370,000
pH	PH	6.5 to 8.5 (E)	6.5 to 9.0	ID	μg/L S.U. ⁽³⁾	1,300,000	1,400,000	12.6	1,700,000	11.7	10.7	10.7	9.8	11.3	11.7	11.5	11.5	8.18	8.08	8.25	8.42
pH Notes: (1) "CAS Number - Chemical Abstract Number (2) "µg/L" - micrograms per liter or parts per billion (3) "S,U" - standard units (4) - Samples collected from TMW-27 were labeled as " "Per R299.44, June 25, 2018 "Parameter not tested for at his location. ID-Insufficient data to develop criterion. NA-Not available.		6.5 to 8.5 (E)	6.5 to 9.0	ID	S.U. ⁽³⁾	12.4	12.4	12.6	12.4	11.7	10.7	10.7	9.8	11.3	11.7	11.5	11.5	8.18	8.08	8.25	
	ndard established pursuant d to 100% or 1.0e+9 ppb. juired by Section 20120a(5) depends on the pH or wat d model, as allowed for unn as and assumptions specific tection limit, therefore, the -pritogen (e.g., ammonia- hi c water solubility limit. shall be added together to rion shown in the generic or crot an evaluation of whether than evaluation of whether	of the act. er hardness, or both, of f der Section 20120a(10) ed in pathway-specific ru er irterion defaults to the N, nitriteN, nitrate-N) in g determine compliance w cleanup criteria tables is r the hazardous substance	iles. target detection limit. groundwater that is used as with the Michigan not protective as are adsorbed		r																
for surface water that is used as drinking water sou AA-Comparison of these criteria may take into account to particulates rather than dissolved in water and w CC-The generic GSI criteria are based on the toxicity of	t an evaluation of whether hether filtered groundwat																				

Table 4 Summary of Groundwater Analytical Results RTRR - Riverview 18251 W. Jefferson, Riverview, MI ASTI Project No. 10860

ASTI Project No. 10860				Nonresidential Groundwater					1				1				1			
		Nonresidential Drinking	Groundwater Surface Water	Volatilization to Indoor Air	MW-103-121219		V-103 MW-103-052720	MW-103-073020	MW-104-121119	MW-104-031820		MW-104-073020	MW-105-121119		W-105 MW-105-052820	MW-105-073020	MW-106-121019		/-106 MW-106-052820	MW-106-073
	40	Water	Interface	Inhalation	12/12/2019	3/19/2020	5/27/2020	7/30/2020	12/11/2019	3/18/2020	5/27/2020	7/30/2020	12/11/2019	3/18/2020	5/28/2020	7/30/2020	12/10/2019	3/19/2020	5/28/2020	7/30/2020
erameters etals	CAS Number ⁽¹⁾	Criteria*	Criteria	Criteria*	+															
rsenic	7440-38-2	10 (A)	10	NLV	<5.0	<5.0	<5.0	<5.0	33	18	9.2	50	8.4	7.3	<5.0	11	<5.0	<5.0	<5.0	<5.0
arium	7440-39-3	2,000 (A)	(G)	NLV	440	400	450	380	<100	<100	<100	<100	<100	<100	<100	<100	250	200	180	240
nromium, Total	7440-47-3	100 (A)	11	NLV	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	17	19	43	14
opper ead	7440-50-8 7439-92-1	1,000 (E) 4.0 (L)	(G) (G,X)	NLV NLV	6.4 3.4	<4.0 <3.0	<4.0 5.9	<4.0 <3.0	<4.0 <3.0	<4.0 <3.0	<4.0 <3.0	<4.0 <3.0	<4.0 3.4	<4.0 <3.0	<4.0 <3.0	4.6 7.1	6.4 4.7	12 4.3	5.1 6.2	6.9 <3.0
langanese	7439-96-5	50 (E)	(G,X)	NLV	110	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
lercury, Total	7439-97-6	2.0 (A)	0.0013	56 (S)	<0.20	<0.20	<0.025	<0.20	<0.20	<0.20	<0.025	<0.2	<0.20	<0.20	<0.025	<0.2	<0.20	<0.20	<0.025	<0.20
ickel elenium	7440-02-0 7782-49-2	100 (A) 50 (A)	(G)	NLV NLV	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<0.2 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<20 <5.0
lver	7440-22-4	98	0.2 (M); 0.06	NLV	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.36	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
/anadium	7440-62-2	62	27	NLV	4.2	4.2	<4.0	<4.0	4.6	<4.0	4.6	7.4	9.3	<4.0	30	<4.0	<4.0	<4.0	<4.0	<4.0
inc	7440-66-6	5,000 (E)	(G)	NLV	<50	<50	<50	<50	<50	<50	<50	120	<50	<50	<50	<50	<50	<50	<50	<50
ercury, Low Level Analysis	7439-97-6	2.0 (A)	0.0013	56 (S)	~	~	0.027	0.04	~	~	0.022	0.018	~	~	0.0056	0.026	~	~	0.00082	0.0013
mi Volatile Organic Compounds				(-)																
cenaphthene cenaphthylene	83-32-9 208-96-8	3,800 150	38 ID	4,200 (S) 3,900 (S)	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
niline	62-53-3	220	4.0 (M); 3.0	NLV	<4.0	<5.0	<4.0	<4.0	<4.0	<4.0	<5.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
nthracene	120-12-7	43 (S)	ID	43 (S)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
zobenzene enzo(a)anthracene (Q)	103-33-3 56-55-3	94 8.5	ID ID	6,400 (S) NIV	<5.0	<5.0 <5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
enzo(a)pyrene (Q)	50-32-8	5.0 (A)	ID	NLV	<1.0 <1.0	<5.0 <5.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<5.0 <5.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
enzo(b)fluoranthene (Q)	205-99-2	1.5 (S, AA)	ID	ID	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
enzo(g,h,i)perylene enzo(k)fluoranthene (Q)	191-24-2 207-08-9	1.0 (M); 0.26 (S) 1.0 (M); 0.8 (S)	ID NA	NLV NLV	<1.0 <1.0	<5.0 <5.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<5.0 <5.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
enzo(k)nuoranthene (Q) enzyl alcohol	100-51-6	29,000	NA NA	NLV NLV	<5.0	<5.0 <25	<1.0 <5.0	<5.0	<5.0	<5.0	<5.0 <25	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<5.0	<5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0
-Bromophenyl Phenylether	101-55-3	-	=	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
utyl benzyl phthalate	85-68-7	2,700 (S)	67 (X)	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
arbazole Chloro-3-methylphenol	86-74-8 59-50-7	350 420	10 (M); 4.0 7.4	NLV NLV	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
s(2-chloroethoxy)methane	111-91-1	-	-	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
s(2-Chloroethyl)ether (I)	111-44-4	8.3	1.0 (M); 0.79	210,000	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
s(2-chloroisopropyl) Ether	108-60-1	- F 200	- NA	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
eta-Chloronaphthalene -Chlorophenol	91-58-7 95-57-8	5,200 130	NA 18	ID 1,100,000	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
-Chlorophenyl Phenylether	7005-72-3	-	-	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
hrysene (Q)	218-01-9	1.6 (S)	ID	ID	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
ibenzo(a,h)anthracene (Q)	53-70-3	2.0 (M); 0.85 ID	ID 4.0	NLV	<2.0	<5.0	<2.0	<2.0	<2.0	<2.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
ibenzofuran ,4-Dichlorophenol	132-64-9 120-83-2	210	4.0	10,000 (S) NLV	<4.0 <5.0	<5.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<5.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0
iethyl phthalate	84-66-2	16,000	110	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
,4-Dimethylphenol	105-67-9	1,000	380	NLV	60	30	26	36	630	360	340	430	34	21	<5.0	20	<5.0	<5.0	<5.0	<5.0
imethyl phthalate	131-11-3	210,000	NA 0.7	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
i-n-butyl phthalate ,4-Dinitrophenol	84-74-2 51-28-5	2,500	9.7	NLV -	<5.0 <20	<5.0 <100	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <25	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20	<5.0 <20
,4-Dinitrotoluene	121-14-2	32	NA	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
,6-Dinitrotoluene	606-20-2	=	=	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
i-n-octyl phthalate is(2-Ethylhexyl)phthalate	117-84-0 117-81-7	380 6.0 (A)	ID 14	NLV NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
luoranthene	206-44-0	210 (S)	1.6	210 (S)	<5.0 1.2	<5.0 <5.0	<5.0 <1.0	<5.0 1.1	<5.0 <1.0	<5.0 <1.0	<5.0 <5.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0
luorene	86-73-7	2,000 (S)	12	2,000 (S)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
exachlorobenzene (C-66)	118-74-1	1.0 (A)	0.2 (M); 0.0003	3,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
exachlorobutadiene (C-46)	87-68-3 77-47-4	42	0.053 ID	3,200 (S) 420	<5.0 <5.0	<25	~ <5.0	~ <5.0	<5.0 <5.0	<5.0 <5.0	~	~ <5.0	<5.0 <5.0	<5.0 <5.0	~ <5.0	~ <5.0	<5.0 <5.0	<5.0 <5.0	~ <5.0	~ <5.0
exachlorocyclopentadiene (C-56) exachloroethane	67-72-1	50 (A) 21	6.7 (X)	50,000 (S)	<5.0	<25 <25	<5.0 <5.0	<5.0	<5.0	<5.0	<25 <25	<5.0 <5.0	<5.0	<5.0 <5.0	<5.0	<5.0 <5.0	<5.0	<5.0	<5.0 <5.0	<5.0
ideno(1,2,3-cd)pyrene (Q)	193-39-5	2.0 (M); 0.022 (S)	ID	NLV	<2.0	<5.0	<2.0	<2.0	<2.0	<2.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
ophorone	78-59-1	3,100	1,300 (X)	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl-4,6-dinitrophenol Methylnaphthalene	534-52-1 91-57-6	20 (M); 7.3	NA 10	NLV	<20	<50 14	<20	<20	<20	<20	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methylphenol, 2-	91-57-6 95-48-7	750 -	19 82	25,000 (S)	15 <5.0	<5.0	15 <5.0	12 <5.0	<5.0 10	<15 10	<5.0 8	<5.0 8.8	<5.0 6.6	<5.0 6.3	<5.0 <5.0	<5.0 5.9	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
ethylphenol, 3- and 4-	MEPH1314	=	25	=	<10	<10	<10	<10	70	98	95	78	29	30	<10	28	<10	<10	<10	<10
Nitroaniline	88-74-4	-	-	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Nitroaniline	99-09-2	-	-	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Nitroaniline trobenzene (I)	100-01-6 98-95-3	9.6	180 (X)	550,000	<20 <3.0	<20 <5.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <5.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0
Nitrophenol	88-75-5	58	ID	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Nitrophenol	100-02-7	=	=	=	<20	<25	<20	<20	<20	<20	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20
-Nitrosodimethylamine	62-75-9	- 	- N: A	-	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
-Nitroso-di-n-propylamine -Nitrosodiphenylamine	621-64-7 86-30-6	5.0 (M); 0.77 1,100	NA NA	NLV NLV	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
entachlorophenol	87-86-5	1.0 (A)	(G,X)	NLV	<20	<100	<20	<20	<20	<20	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20
henanthrene	85-01-8	150	2.0 (M); 1.7	1,000 (S)	4.7	<5.0	4.4	5.2	<2.0	<2.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
henol	108-95-2	13,000	450 ID	NLV 140 (5)	7.3	9.6	5.7	6.3	<5.0	<5.0	<5.0	<5.0	30	36	<5.0	17	<5.0	<5.0	<5.0	<5.0
yrene yridine (I)	129-00-0 110-86-1	140 (S) 21	ID NA	140 (S) 12,000	<5.0 <5.0	<5.0 <25	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <25	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
,4,5-Trichlorophenol	95-95-4	2,100	NA NA	NLV	<5.0	<25 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
,4,6-Trichlorophenol	88-06-2	470	5.0	NLV	<4.0	<5.0	<4.0	<4.0	<4.0	<4.0	<5.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
olychlorinated biphenyls (PCBs)	1336-36-3	0.5 (A)	0.2 (M); 2.5E-5	45 (S)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	1330 30 3	5.5 (A)	J.L (), L.JL J	-5 (5)	-0.20	-0.20	-5.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-5.20	-5.20	-0.20	-0.20	10.20

Table 4 Summary of Groundwater Analytical Results RTRR - Riverview 18251 W. Jefferson, Riverview, MI ASTI Project No. 10860

ASTI Project No. 10860				Nonresidential Groundwater																
		Nonresidential Drinking	Groundwater Surface Water	Volatilization to Indoor Air	MW-103-121219		W-103 0 MW-103-052720	MW-103-073020	MW-104-121119	MW-104-031820	-104 MW-104-052720	MW-104-073020	MW-105-121119		/-105 MW-105-052820	MW-105-073020	MW-106-121019		/-106 MW-106-052820	MW-106-07302
	(1)	Water	Interface	Inhalation	12/12/2019	3/19/2020	5/27/2020	7/30/2020	12/11/2019	3/18/2020	5/27/2020	7/30/2020	12/11/2019	3/18/2020	5/28/2020	7/30/2020	12/10/2019	3/19/2020	5/28/2020	7/30/2020
Parameters Volatile Organic Compounds	CAS Number ⁽¹⁾	Criteria*	Criteria	Criteria*					-											
Acetone (I)	67-64-1	2,100	1,700	1,000,000,000 (D,S)	<50	<50	<50	<200	<50	<50	<50	<200	<50	<50	<50	<50	<50	<50	<50	<200
Acrylonitrile (I) Benzene (I)	107-13-1 71-43-2	11 5.0 (A)	2.0 (M); 1.2 200 (X)	190,000 35,000	<2.0 <1.0	<2.0 <1.0	<10 <2.5	<40 <10	<5.0 <2.5	<5.0 <2.5	<20 <5.0	<40 <10	<2.0 1.1	<2.0 1.1	<2.0 <1.0	<2.0 1.1	<5.0 <2.5	<2.0 <1.0	<2.0 <1.0	<40 <10
Bromobenzene (I)	108-86-1	50	NA	390,000	<1.0	<1.0	<2.5	<10	<5.0	<2.5	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<10
Bromochloromethane Bromodichloromethane	74-97-5 75-27-4	- 80 (A,W)	- ID	- 37,000	<1.0 <1.0	<1.0 <1.0	<5.0 <2.5	<20 <10	<2.5 <2.5	<2.5 <2.5	<10 <5.0	<20 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<2.5 <5.0	<1.0 <1.0	<1.0 <1.0	<20 <10
Bromoform	75-25-2	80 (A,W)	ID	3,100,000 (S)	<1.0	<1.0	<5.0	<20	<5.0	<5.0	<10	<20	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<20
Bromomethane	74-83-9 78-93-3	29 38,000	5.0 (M); 4.2	9,000 240,000,000 (S)	<5.0 <25	<5.0	<25 <25	<100 <40	<10 <25	<10 <25	<50 <50	<100 <40	<5.0 <25	<5.0 <25	<5.0 <25	<5.0 <25	<25 <25	<5.0 <25	<5.0 <25	<100 <40
2-Butanone (MEK) (I) n-Butylbenzene	78-93-3 104-51-8	230	2,200 ID	240,000,000 (S) ID	<1.0	<25 <1.0	<2.5 <2.5	<40 <10	<2.5	<2.5	<5.0	<40 <10	<1.0	<1.0	<1.0	<1.0	<5.0	<25 <1.0	<25 <1.0	<10 <10
sec-Butylbenzene	135-98-8	230	ID	ID	<1.0	<1.0	<2.5	<10	<2.5	<2.5	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<10
tert-Butylbenzene (I) Carbon disulfide (I,R)	98-06-6 75-15-0	230 2,300	ID ID	ID 550,000	<1.0 <5.0	<1.0 <5.0	<2.5 <5.0	<10 <20	<2.5 <5.0	<2.5 <5.0	<5.0 <10	<10 <20	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<2.5 <5.0	<1.0 <5.0	<1.0 <5.0	<10 <20
Carbon tetrachloride	56-23-5	5.0 (A)	38 (X)	2,400	<1.0	<1.0	<2.5	<10	<5.0	<5.0	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<10
Chlorobenzene (I) Chloroethane	108-90-7 75-00-3	100 (A) 1,700	25 1,100 (X)	470,000 (S) 5,700,000 (S)	<1.0 <5.0	<1.0 <5.0	<2.5 <5.0	<10 <40	<2.5 <5.0	<2.5 <5.0	<5.0 <10	<10 <40	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<5.0 <5.0	<1.0 <5.0	<1.0 <5.0	<10 <40
Chloroform	67-66-3	80 (A,W)	350	180,000	<1.0	<1.0	<2.5	<10	<5.0	<2.5	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<2.5	<1.0	<1.0	<10
Chloromethane (I) o-Chlorotoluene (I)	74-87-3 95-49-8	1,100 420	ID ID	45,000 370,000 (S)	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<20 <10	<5.0 <5.0	<5.0 <5.0	<10 <5.0	<20 <10	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<20 <10
Dibromochloromethane	124-48-1	80 (A,W)	ID	110,000	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<10	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20
Dibromochloropropane	96-12-8	0.2 (A)	ID	1,200 (S)	<1.0	<1.0	<2.5	<10	<2.5	<2.5	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<10
Dibromomethane 1,2-Dichlorobenzene	74-95-3 95-50-1	230 600 (A)	NA 13	ID 160,000 (S)	<5.0 <1.0	<5.0 <1.0	<5.0 <2.5	<10 <10	<5.0 <2.5	<5.0 <2.5	<5.0 <5.0	<10 <10	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <2.5	<5.0 <1.0	<5.0 <1.0	<10 <10
1,3-Dichlorobenzene	541-73-1	19	28	41,000	<1.0	<1.0	<2.5	<10	<2.5	<2.5	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<2.5	<1.0	<1.0	<10
1,4-Dichlorobenzene Dichlorodifluoromethane	106-46-7 75-71-8	75 (A) 4,800	17 ID	74,000 (S) 300,000 (S)	<1.0 <5.0	<1.0 <5.0	<5.0 <5.0	<20 <10	<2.5 <5.0	<2.5 <5.0	<10 <5.0	<20 <10	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<5.0 <5.0	<1.0 <5.0	<1.0 <5.0	<20 <10
1,1-Dichloroethane	75-34-3	2,500	740	2,300,000	4.7	3.7	<2.5	<10	15	21	27	17	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<10
1,2-Dichloroethane (I) cis-1,2-Dichloroethylene	107-06-2 156-59-2	5.0 (A) 70 (A)	360 (X) 620	59,000 210,000	<1.0 <1.0	<1.0 <1.0	<2.5 <2.5	<10 <10	<2.5 <2.5	<2.5 <2.5	<5.0 <5.0	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<5.0 <2.5	<1.0 <1.0	<1.0 <1.0	<10 <10
trans-1,2-Dichloroethylene	156-59-2 156-60-5	100 (A)	1,500 (X)	200,000	<1.0 <1.0	<1.0 <1.0	<2.5 <2.5	<10 <20	<2.5 <2.5	<2.5 <2.5	<5.0 <5.0	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<2.5 <2.5	<1.0 <1.0	<1.0 <1.0	<10 <20
1,1-Dichloroethylene (I)	75-35-4	7.0 (A)	130	1,300	<1.0	<1.0	<2.5	<10	<2.5	<2.5	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<2.5	<1.0	<1.0	<10
1,2-Dichloropropane (I) cis-1,3-Dichloropropylene	78-87-5 10061-01-5	5.0 (A)	230 (X)	36,000	<1.0 <0.50	<1.0 <0.50	<2.5 <2.5	<10 <10	<2.5 <2.5	<2.5 <2.5	<5.0 <5.0	<10 <10	<1.0 <0.50	<1.0 <0.50	<1.0 <0.50	<1.0 <0.50	<2.5 <2.5	<1.0 <0.50	<1.0 <0.50	<10 <10
trans-1,3-Dichloropropylene	10061-02-6	-	-	=	<0.50	<0.50	<2.5	<10	<2.5	<2.5	<5.0	<10	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<10
Ethylbenzene (I) Ethylene dibromide	100-41-4 106-93-4	74 (E) 0.05 (A)	18 5.7 (X)	170,000 (S) 15,000	<1.0 <1.0	<1.0 <1.0	<2.5 <2.5	<10 <10	<2.5 <2.5	<2.5 <2.5	<5.0 <5.0	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<2.5 <2.5	<1.0 <1.0	<1.0 <1.0	<10 <10
Hexachloroethane	67-72-1	21	6.7 (X)	50,000 (S)	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Hexanone	591-78-6 98-82-8	2,900 2,300	ID 28	8,700,000 56,000 (S)	<50 <5.0	<50 <5.0	<50 <5.0	<50 <10	<50 <5.0	<50 <5.0	<50 <5.0	<50 <10	<50 <5.0	<50 <5.0	<50 <5.0	<50 <5.0	<50 <5.0	<50 <5.0	<50 <5.0	<50 <10
Isopropyl benzene 4-Methyl-2-pentanone (MIBK) (I)	108-10-1	5,200	ID	20,000,000 (S)	<50	<50	<50	<100	<50	<50	<50	<100	<50	<50	<50	<50	<50	<50	<50	<100
Methylene chloride	75-09-2 1634-04-4	5.0 (A) 40 (E)	1,500 (X) 7,100 (X)	1,400,000 47,000,000 (S)	<5.0	<5.0	<5.0	<20 <10	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20
Methyl-tert-butyl ether (MTBE) Naphthalene	91-20-3	1,500	7,100 (X)	31,000 (S)	<5.0 52	<5.0 18	<5.0 18	22	<5.0 <5.0	<5.0 <5.0	<5.0 <10	<10 <20	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<10 <20
n-Propylbenzene (I)	103-65-1	230	ID	ID	<1.0	<1.0	<2.5	<10	<2.5	<2.5	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<2.5	<1.0	<1.0	<10
Styrene 1,1,1,2-Tetrachloroethane	100-42-5 630-20-6	100 (A) 320	80 (X) ID	310,000 (S) 96,000	<1.0 <1.0	<1.0 <1.0	<5.0 <5.0	<20 <20	<2.5 <2.5	<2.5 <2.5	<10 <10	<20 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<5.0 <2.5	<1.0 <1.0	<1.0 <1.0	<20 <20
1,1,2,2-Tetrachloroethane	79-34-5	35	78 (X)	77,000	<1.0	<1.0	<2.5	<10	<2.5	<2.5	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<10
Tetrachloroethylene Toluene (I)	127-18-4 108-88-3	5.0 (A) 790 (E)	60 (X) 270	170,000 530,000 (S)	<1.0 <1.0	<1.0 <1.0	<2.5 <2.5	<10 <10	<2.5 <2.5	<2.5 <2.5	<5.0 <5.0	<10 <10	<1.0 4.7	<1.0 4.7	<1.0 <1.0	<1.0 5.8	<2.5 <2.5	<1.0 <1.0	<1.0 <1.0	<10 <10
1,2,4-Trichlorobenzene	120-82-1	70 (A)	99 (X)	300,000 (S)	<5.0	<25	<5.0	<20	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20
1,1,1-Trichloroethane	71-55-6	200 (A)	89	1,300,000 (S)	<1.0	<1.0	<2.5	<10 <20	<2.5	<2.5 <2.5	<5.0	<10 <20	<1.0	<1.0	<1.0	<1.0	<2.5	<1.0	<1.0	<10 <20
1,1,2-Trichloroethane Trichloroethylene	79-00-5 79-01-6	5.0 (A) 5.0 (A)	330 (X) 200 (X)	110,000 4,900	<1.0 1.1	<1.0 1	<5.0 <2.5	<10	<2.5 <2.5	<2.5	<10 <5.0	<10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<2.5 <2.5	<1.0 <1.0	<1.0 <1.0	<10
Trichlorofluoromethane	75-69-4	7,300	NA	1,100,000 (S)	<1.0	<1.0	<2.5	<10	<2.5	<2.5	<5.0	<10	<1.0	<1.0	<1.0	<2.0	<5.0	<1.0	<1.0	<10
1,2,3-Trichloropropane 1,2,3-Trimethylbenzene	96-18-4 526-73-8	120	NA -	18,000	<1.0 <1.0	<1.0 <1.0	<5.0 <2.5	<20 <10	<5.0 <2.5	<2.5 <2.5	<10 <5.0	<20 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<5.0 <2.5	<1.0 <1.0	<1.0 <1.0	<20 <10
1,2,4-Trimethylbenzene	95-63-6	63 (E)	17	56,000 (S)	1.4	<1.0	<2.5	<10	<2.5	<2.5	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<10
1,3,5-Trimethylbenzene Vinyl chloride	108-67-8 75-01-4	72 (E) 2.0 (A)	45 13 (X)	61,000 (S) 13,000	<1.0 <1.0	<1.0 <1.0	<2.5 <2.5	<10 <10	<2.5 <5.0	<2.5 <2.5	<5.0 <5.0	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<2.5 <5.0	<1.0 <1.0	<1.0 <1.0	<10 <10
m&p-Xylene	136777-61-2	2.0 (A)		-	<2.0	<2.0	<5.0	<20	<5.0	<5.0	<10	<20	<2.0	<2.0	<2.0	<2.0	<5.0	<2.0	<2.0	<20
o-Xylene	95-47-6 1330-20-7	- 280 (E)	49	- 190,000 (S)	<1.0 <3.0	<1.0 <3.0	<2.5 <7.5	<10 <30	<2.5 <7.5	<2.5 <7.5	<5.0 <15	<10 <30	<1.0 <3.0	<1.0 <3.0	<1.0 <3.0	<1.0 <3.0	<2.5 <7.5	<1.0 <3.0	<1.0 <3.0	<10 <30
Xylenes	1330-20-7	280 (E)	49	190,000 (5)	₹3.0	<3.0	<7.5	<30	<7.5	<7.5	<15	<30	<3.0	<3.0	<3.0	₹3.0	<7.5	<3.0	<3.0	<30
Ammonia	7664-41-7	10,000 (N)	(CC) 50,000	7,100,000	4,100	2,500	2,800	3,600	24,000	19,000	19,000	16,000	8,000	3,900	830	5,500	2,000	990	1,000	2,200
Chloride Total dissolved solids	16887-00-6 TDS	250,000 (E) 500,000 (E)	500,000	NLV ID	25,000 1,500,000	25,000 1,500,000	24,000 1,600,000	22,000 1,400,000	300,000 860,000	310,000 920,000	220,000 800,000	240,000 860,000	40,000 610,000	24,000 620,000	<10,000 450,000	29,000 690,000	43,000 1,500,000	38,000 1,300,000	37,000 1,300,000	47,000 1,500,000
рН	PH	6.5 to 8.5 (E)	6.5 to 9.0	ID	12.4	12.4	12.4	12.4	11	11	10.9	11	11.7	11.9	11.2	11.9	12.5	12.4	12.3	12.4
Notes: (1) "CAS Number - Chemical Abstract Number (2) "ug/L" - micrograms per liter or parts per billion (3) - "S.U." - standard units (4) - Samples collected from TMW-27 were labeled at """ No standard "Per R299.44, June 25, 2018 "Parameter not tested for at his location. ID-Insufficient data to develop criterion. NA-Not available. NV-Hazardous substance is not likely to volatilize u	nder most conditions.																•			
A-Criterion is the State of Michigan drinking water s D-Calculate criterion exceeds 100%, hence it is redu E-Criterion is the aesthetic drinking water value, as I G-Groundwater Surface Water Interface (GSI) criteri L-Criteria for lead are derived using a biologically ba of the act, and are not calculated using the algorif M-Calculated criterion is below the analytical target N-The concentrations of all potential sources of nitr S-Criterion defaults to the hazardous substance-spe W-Concentrations of trihalomethanes in groundwat drinking water standard of 100 ug/L. X-The Groundwater Surface Water Interface (GSI) cr for surface water that is used as drinking water s AA-Comparison of these criteria may take into according to the surface of the surface water than dissolved in water and the wat	tandard established pursuan ced to 100% or 1.0e+9 ppb. required by Section 201208(s) on depends on the pH or was sed model, as allowed for ur thms and assumptions specif detection limit, therefore, that are hitrogen (e.g., ammoniacific water solubility limit. er shall be added together to titerion shown in the generic ource. unt an evaluation of whether	6) of the act. ter hardness, or both, of older Section 20120a(10) ied in pathway-specific r ec riterion defaults to th N, nitriteN, nitrate-N) in o determine compliance v cleanup criteria tables is r the hazardous substance	ules. e target detection limit. groundwater that is used as with the Michigan not protective es are adsorbed		r															
CC-The generic GSI criteria are based on the toxicity			•																	

Table 4 Summary of Groundwater Analytical Results RTRR - Riverview 18251 W. Jefferson, Riverview, MI ASTI Project No. 10860

Series Se	ASTI Project No. 10860				Nonresidential Groundwater	_				1								_			
Service Servic						MW-107S-121219			MW-107S-073020	MW-107D-121219			MW-107D-073020	MW-108-121219			MW-108-073120	MW-109D-121219			MW-109D-073020
TATE	Parameters	CAS Number ⁽¹⁾				12/12/2019	3/19/2020	5/27/2020	7/30/2020	12/12/2019	3/19/2020	5/27/2020	7/30/2020	12/12/2019	3/19/2020	5/28/2020	7/31/2020	12/12/2019	3/18/2020	5/28/2020	7/30/2020
And Markey 1969 1979 1979 1989 1989 1999 1999 1999 199	Metals	CA3 Number	Citteria	Citeria	Criteria																
Secretary (1965) William (1965) Will	Arsenic			10																<5.0	
We will be wil	Barium Changing Tatal			1-7																	
Series (1964) (1	Copper																				
TABLE STATE OF THE PARTY OF THE	Lead					<3.0								-							
Series (1966) 1966	Manganese																				
SACRE MARIE	Mercury, Total Nickel																				
Series (March 1987) 1988 1989 1	Selenium																				
THE COLOR OF THE C	Silver		98																		
THE CONTROL OF THE CO	Vanadium Zinc																				
Confidence 415	Mercury, Low Level Analysis	7439-97-6	2.0 (A)		56 (S)	~	~	0.047	0.038	~	~	<0.00050	0.00097	~	~	0.00078	0.0032	~	~	0.0012	0.0021
Confidence 415	Semi Volatile Organic Compounds																				
Tries (1974) 201 439, 50 Will 40 40 40 40 40 40 40 40 40 40 40 40 40	Acenaphthene	83-32-9	3,800	38	4,200 (S)	<5.0	5.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
THE STATE OF THE S	Acenaphthylene																				
Series (1987) 1987 1988 1989 19	Aniline																				
Second Continue	Anthracene Azobenzene																				
Secretary (1985)	Benzo(a)anthracene (Q)																				
mail minimal m	Benzo(a)pyrene (Q)					<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
March Marc	Benzo(b)fluoranthene (Q)																				
well and services																					
Second company Seco	Benzyl alcohol			****																	
Figure 1974 126 127 1394 126 127 1394 127 127 127 127 127 127 127 127 127 127	4-Bromophenyl Phenylether			-	-																
Clies 1987 1997	Butyl benzyl phthalate																				
Comprehensional Property of the Comprehensional Property of th	Carbazole																				
22 Consensitive 111-164 13 10 10 10 10 10 10 10			420	7.4	NLV																
22 de la composition de la com	bis(2-Chloroethyl)ether (I)		8.3	1.0 (M): 0.79	210.000																
Charaphare 3577 139 13 1100000 43 43 43 43 43 43 43	Bis(2-chloroisopropyl) Ether		-	-	-															<5.0	
Change C	beta-Chloronaphthalene																				
present 1,000	2-Chlorophenol		130	18	1,100,000																
Sementy (1) 137-32 20 (Mig 18) 0 NV			1.6.(5)	- ID	- ID																
Seanchain 11264 B 1	Dibenzo(a,h)anthracene (Q)			· -																	
cell principalizate 8.45-67 11,000 113 NLV 5.0 420 4	Dibenzofuran	132-64-9		4.0	10,000 (S)	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Filesthephend 196-27 1000 180 NV 10 10 19 170 40 40 40 40 40 40 40	2,4-Dichlorophenol																				
refly plinhalize 13-13-13 20,000 MA NV 4.3 4.3 4.3 4.3 4.3 4.3 4.3 4.																					
Company Comp	Di-n-butyl phthalate																				
is controllation (6,000) 172 kg 18 kg 1	2,4-Dinitrophenol		-	-	-							<20	<20	<20						<20	
medylephilable 17940 380 10 NEV <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0.0 <0	2,4-Dinitrotoluene		32	NA	NLV																
September 17.41			380	- ID	NI.V																
promethene () 2004-04 210 (S) 18 210 (S) -10	bis(2-Ethylhexyl)phthalate																				
submiorbatement (-66) 115-74 1.0 (A) 0.2 (M), 50003 3,000 5.0	Fluoranthene			1.6																	
seach-incondatableme (C-46) FF -96-3 FF -96-	Fluorene		2,000 (S)			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		<5.0
suschioropropermatemene (c-66)	Hexachlorobenzene (C-66)							<5.0 ~	<5.0 ~			<5.0 ~	<5.0			<5.0 ~	<5.0			<5.0 ~	<5.0 ~
Semble G-72-1 21								<5.0	<5.0			<5.0	<5.0			<5.0	<5.0			<5.0	<5.0
Semilar Semi	Hexachloroethane																				
Methyl-(4-finitrophenol S34-52-1 20 (M); 7.3 NA NIV < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 2	Indeno(1,2,3-cd)pyrene (Q)	193-39-5	2.0 (M); 0.022 (S)	ID	NLV	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methylanely 15.76 750 19 25,000 (s) 5.4 8.9 6.7 9.1 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Isophorone																				
ethylphenol, 2	2-Methyl-4,6-dinitrophenol			****																	
ethylenol, 3 and 4- MPH 134 - 25 - 110 88 30 69 40 40 40 40 40 40 40 40 40 40 40 40 40	Methylphenol, 2-		-						5.1												
Nitrosolline 88-744	Methylphenol, 3- and 4-		-		-		83	30	69												
Nitrogaline 100-01-6	2-Nitroaniline	88-74-4	-		-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Trobenzee (f) 98-95-3 9.6 180 (X) 550,000 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	3-Nitroaniline		-	Ē	Ē																
Nitrophenol 88-75-5 58 ID NLV < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0	4-Nitroparine		-	- 100 (V)	-																
Nitroplenol 100-02-7	2-Nitrophenol																				
Nitrosodimetrylamine 62-75-9 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 <	4-Nitrophenol			-	-																
Nitrosoliphenylamine 86-30-6 1,100 NA NLV <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0	N-Nitrosodimethylamine	62-75-9	. -	=	=	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Intachlorophenol 87-86-5 1.0 (A) (G,X) NLV <20 <20 <20 <20 <20 <20 <20 <20 <20 <20	n-Nitroso-di-n-propylamine																				
Penanthrene 85-01-8 150 2.0 (M); 1.7 1,000 (S) < 2.0 2.5 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2																					
lenol 108-95-2 13,000 450 NLV 24 37 9.3 19 <5,0 <5,0 <5,0 <5,0 <5,0 <5,0 <5,0 <5,0	Phenanthrene																				
rene 129-00-0 140 (5) ID 140 (5) < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5	Phenol	108-95-2																			
45-Trichlorophenol 95-95-4 2,100 NA NLV <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0	Pyrene	129-00-0	140 (S)	ID		<5.0		<5.0	<5.0	<5.0	<5.0	<5.0			<5.0	<5.0	<5.0		<5.0	<5.0	<5.0
4,6-Trichlorophenol 88-06-2 470 5.0 NLV <4.0 <4.0 <4.0 <4.0 <4.0 <4.0 <4.0 <4.0	Pyridine (I)																				
Nychlorinated biphenyls (PCBs) 1336-36-3 0.5 (A) 0.2 (M); 2.5E-5 45 (S) <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20																					
	Polychlorinated biphenyls (PCBs)	1336-36-3	0.5 (A)	0.2 (M); 2.5E-5	45 (S)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Table 4 Summary of Groundwater Analytical Results RTRR - Riverview 18251 W. Jefferson, Riverview, MI ASTI Project No. 10860

ASTI Project No. 10860				Nonresidential Groundwater																
		Nonresidential Drinking	Groundwater Surface Water	Volatilization to Indoor Air	MW-107S-121219		-107s MW-107s-052720	MW-107S-073020	MW-107D-121219	MW- MW107D-031920	107D MW-107D-052720	MW-107D-073020	MW-108-121219	MW-108-031920		MW-108-073120	MW-109D-121219		-109D MW-109D-052820	MW-109D-073020
Paramatan.	CAS N(1)	Water	Interface	Inhalation	12/12/2019	3/19/2020	5/27/2020	7/30/2020	12/12/2019	3/19/2020	5/27/2020	7/30/2020	12/12/2019	3/19/2020	5/28/2020	7/31/2020	12/12/2019	3/18/2020	5/28/2020	7/30/2020
Parameters Volatile Organic Compounds	CAS Number ⁽¹⁾	Criteria*	Criteria	Criteria*																
Acetone (I)	67-64-1	2,100	1,700	1,000,000,000 (D,S)	<50	<50	<50	<200 <40	<50	<50	<50	<50	<50	<50 <2.0	<50	<200	<50	<50	<50	<200 <40
Acrylonitrile (I) Benzene (I)	107-13-1 71-43-2	11 5.0 (A)	2.0 (M); 1.2 200 (X)	190,000 35,000	<2.0 1.6	<2.0 1.7	<2.0 1.4	<10	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<1.0	<2.0 <1.0	<40 <10	<5.0 <2.5	<5.0 <2.5	<10 <2.5	<10
Bromobenzene (I)	108-86-1	50	NA	390,000	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<5.0	<2.5	<2.5	<10
Bromochloromethane Bromodichloromethane	74-97-5 75-27-4	- 80 (A,W)	- ID	37,000	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <10	<2.5 <2.5	<2.5 <2.5	<5.0 <2.5	<20 <10
Bromoform	75-27-4 75-25-2	80 (A,W)	ID	3,100,000 (S)	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<5.0	<5.0	<5.0	<20
Bromomethane	74-83-9	29	5.0 (M); 4.2	9,000	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<100	<10	<10	<25	<100
2-Butanone (MEK) (I) n-Butylbenzene	78-93-3 104-51-8	38,000 230	2,200 ID	240,000,000 (S) ID	<25 <1.0	<25 <1.0	<25 <1.0	<40 <10	<25 <1.0	<25 <1.0	<25 <1.0	<25 <1.0	<25 <1.0	<25 <1.0	<25 <1.0	<40 <10	<25 <2.5	<25 <2.5	<25 <2.5	<40 <10
sec-Butylbenzene	135-98-8	230	ID	ID	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
tert-Butylbenzene (I)	98-06-6	230	ID	ID	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
Carbon disulfide (I,R) Carbon tetrachloride	75-15-0 56-23-5	2,300 5.0 (A)	ID 38 (X)	550,000 2,400	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<20 <10	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<20 <10	<5.0 <5.0	<5.0 <5.0	<5.0 <2.5	<20 <10
Chlorobenzene (I)	108-90-7	100 (A)	25	470,000 (S)	1	1.1	1.4	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
Chloroethane	75-00-3	1,700	1,100 (X)	5,700,000 (S)	<5.0	<5.0	<5.0	<40	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<40	<5.0	<5.0	<5.0	<40
Chloroform Chloromethane (I)	67-66-3 74-87-3	80 (A,W) 1,100	350 ID	180,000 45,000	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<10 <20	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<10 <20	<5.0 <5.0	<2.5 <5.0	<2.5 <5.0	<10 <20
o-Chlorotoluene (I)	95-49-8	420	ID	370,000 (S)	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10
Dibromochloromethane	124-48-1	80 (A,W)	ID ID	110,000	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<20
Dibromochloropropane Dibromomethane	96-12-8 74-95-3	0.2 (A) 230	ID NA	1,200 (S)	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<10 <10	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<10 <10	<2.5 <5.0	<2.5 <5.0	<2.5 <5.0	<10 <10
1,2-Dichlorobenzene	95-50-1	600 (A)	13	160,000 (S)	4.3	4.5	7.6	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
1,3-Dichlorobenzene 1,4-Dichlorobenzene	541-73-1 106-46-7	19 75 (A)	28 17	41,000 74,000 (S)	<1.0 <1.0	<1.0 <1.0	<1.0 1.3	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	1.3 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20	<2.5 <2.5	<2.5 <2.5	<2.5 <5.0	<10 <20
Dichlorodifluoromethane	75-71-8	4,800	ID	300,000 (S)	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10
1,1-Dichloroethane	75-34-3	2,500	740	2,300,000	3.2	4.4	3.1	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
1,2-Dichloroethylane	107-06-2 156-59-2	5.0 (A) 70 (A)	360 (X) 620	59,000 210,000	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <10	<2.5 <2.5	<2.5	<2.5 <2.5	<10 <10
cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene	156-59-2 156-60-5	70 (A) 100 (A)	1,500 (X)	210,000	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20	<2.5 <2.5	<2.5 <2.5	<2.5 <2.5	<10 <20
1,1-Dichloroethylene (I)	75-35-4	7.0 (A)	130	1,300	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
1,2-Dichloropropane (I)	78-87-5 10061-01-5	5.0 (A)	230 (X)	36,000	<1.0 <0.50	<1.0 <0.50	<1.0 <0.50	<10 <10	<1.0 <0.50	<1.0 <0.50	<1.0 <0.50	<1.0 <0.50	<1.0 <0.50	<1.0 <0.50	<1.0 <0.50	<10 <10	<2.5 <2.5	<2.5 <2.5	<2.5 <2.5	<10 <10
cis-1,3-Dichloropropylene trans-1,3-Dichloropropylene	10061-01-5	-	-	-	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<2.5	<2.5	<2.5	<10
Ethylbenzene (I)	100-41-4	74 (E)	18	170,000 (S)	<1.0	1.1	1.1	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
Ethylene dibromide Hexachloroethane	106-93-4 67-72-1	0.05 (A) 21	5.7 (X) 6.7 (X)	15,000 50,000 (S)	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<10 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<1.0 <5.0	<10 <5.0	<2.5 <5.0	<2.5 <5.0	<2.5 <5.0	<10 <5.0
2-Hexanone	591-78-6	2,900	ID	8,700,000	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Isopropyl benzene	98-82-8	2,300	28	56,000 (S)	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10
4-Methyl-2-pentanone (MIBK) (I) Methylene chloride	108-10-1 75-09-2	5,200 5.0 (A)	ID 1,500 (X)	20,000,000 (S) 1,400,000	<50 <5.0	<50 <5.0	<50 <5.0	<100 <20	<50 <5.0	<50 <5.0	<50 <5.0	<50 <5.0	<50 <5.0	<50 <5.0	<50 <5.0	<100 <20	<50 <5.0	<50 <5.0	<50 <5.0	<100 <20
Methyl-tert-butyl ether (MTBE)	1634-04-4	40 (E)	7,100 (X)	47,000,000 (S)	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10
Naphthalene	91-20-3	1,500	11	31,000 (S)	110	140	120	96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<20
n-Propylbenzene (I) Styrene	103-65-1 100-42-5	230 100 (A)	ID 80 (X)	ID 310,000 (S)	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20	<2.5 <2.5	<2.5 <2.5	<2.5 <5.0	<10 <20
1,1,1,2-Tetrachloroethane	630-20-6	320	ID	96,000	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<2.5	<2.5	<5.0	<20
1,1,2,2-Tetrachloroethane	79-34-5	35	78 (X)	77,000	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
Tetrachloroethylene Toluene (I)	127-18-4 108-88-3	5.0 (A) 790 (E)	60 (X) 270	170,000 530,000 (S)	<1.0 3.1	<1.0 3.4	<1.0 3.2	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <10	<2.5 <2.5	<2.5 <2.5	<2.5 <2.5	<10 <10
1,2,4-Trichlorobenzene	120-82-1	70 (A)	99 (X)	300,000 (S)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20
1,1,1-Trichloroethane	71-55-6	200 (A)	89	1,300,000 (S)	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
1,1,2-Trichloroethane Trichloroethylene	79-00-5 79-01-6	5.0 (A) 5.0 (A)	330 (X) 200 (X)	110,000 4,900	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <10	<2.5 <2.5	<2.5 <2.5	<5.0 <2.5	<20 <10
Trichlorofluoromethane	75-69-4	7,300	NA NA	1,100,000 (S)	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
1,2,3-Trichloropropane	96-18-4	120	NA	18,000	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<5.0	<2.5	<5.0	<20
1,2,3-Trimethylbenzene 1,2,4-Trimethylbenzene	526-73-8 95-63-6	63 (E)	17	56,000 (S)	4.6 3.8	4.9 4.2	5.4 4.3	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <10	<2.5 <2.5	<2.5 <2.5	<2.5 <2.5	<10 <10
1,3,5-Trimethylbenzene	108-67-8	72 (E)	45	61,000 (S)	1.4	1.6	1.5	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10
Vinyl chloride	75-01-4	2.0 (A)	13 (X)	13,000	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<5.0	<2.5	<2.5	<10
m&p-Xylene o-Xylene	136777-61-2 95-47-6	-	-	-	2.9	3.3 3.1	3.2 2.9	<20 <10	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<20 <10	5.6 <2.5	6.3 2.8	6.9 2.9	<20 <10
Xylenes	1330-20-7	280 (E)	49	190,000 (S)	5.9	6.4	6	<30	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<30	<7.5	9.1	9.8	<30
Autorialia	7664 44 7	10 000 (N)	(00)	7 400 000	42.000	11.000	0.400	11 000	550	420	400	22	2.000	1.500	1.500	1.000	2.000	2.000	2 400	2 700
Ammonia Chloride	7664-41-7 16887-00-6	10,000 (N) 250,000 (E)	(CC) 50,000	7,100,000 NLV	13,000 24,000	11,000 28,000	8,400 21,000	11,000 24,000	560 22,000	430 24,000	480 24,000	32 27,000	2,000 27,000	1,500 28,000	1,500 28,000	1,800 26,000	3,600 30,000	2,900 32,000	3,400 32,000	3,700 30,000
Total dissolved solids	TDS	500,000 (E)	500,000	ID	670,000	840,000	810,000	730,000	360,000	380,000	350,000	390,000	1,200,000	1,200,000	1,300,000	1,100,000	2,000,000	2,000,000	1,900,000	2,000,000
рН	PH	6.5 to 8.5 (E)	6.5 to 9.0	ID	12	12.1	12.1	12	8.54	8.12	8.06	8.02	12.4	12.3	12.3	12.3	12.6	12.6	12.5	12.5
(1) "CAS Number - Chemical Abstract Number (2) "µg/U" - micrograms per liter or parts per billion (3) - "S.U." - standard units (4) - Samples collected from TMW-27 were labeled as "TN" - No standard "Per R299.44, June 25, 2018 "Parameter not tested for at his location. ID-Insufficient data to develop criterion. NA-Not available. NU-Hazardous substance is not likely to volatilize under A-Criterion is the State of Michigan drinking water standa D-Calculate criterion exceeds 100%, hence it is reduced to E-Criterion is the aesthetic drinking water value, as require G-Groundwater Surface Water Interface (GSI) criterion de L-Criteria for lead are derived using a biologically based or of the act, and are not calculated using the algorithms: M-Calculated criterion is below the analytical target deter. S-Criterion defaults to the hazardous substance-specific w W-Concentrations of filip potential sources of nitrate-in S-Criterion defaults to the hazardous substance-specific w W-Concentrations of trihalomethanes in groundwater shi drinking water standard of 100 ug/L. X-The Groundwater Surface Water Interface (GSI) criterio for surface water that is used as drinking water source	most conditions. Ird established pursuar 5 to 100% or 1.0e+9 ppb. ed by Section 20120a('spends on the pH or wa nodel, as allowed for ur and assumptions specification limit, therefore, it trogen (e.g., ammonia- vater solubility limit. all be added together to n shown in the generic	5) of the act. Inter hardness, or both, of Inder Section 20120a(10) Ified in pathway-specific ro Increase and defaults to the N, nitriteN, nitrate-N) in o determine compliance	ules. te target detection limit. groundwater that is used a with the Michigan		r															
AA-Comparison of these criteria may take into account ar to particulates rather than dissolved in water and whe CC-The generic GSI criteria are based on the toxicity of un	ther filtered groundwa																			

Table 4 Summary of Groundwater Analytical Results RTRR - Riverview 18251 W. Jefferson, Riverview, MI ASTI Project No. 10860

ASTI Project No. 10860				Nonresidential Groundwater									,		10	
		Nonresidential Drinking	Groundwater Surface Water	Volatilization to	MW 1105 121210		-110s MW-110s-052820	M/W/ 1105 072120	MW/ 110D 121210		-110D MW-110D-052820	I MANA/ 110D 072120	TMW-26-121219		W-27 ⁽⁴⁾ TMW-26-052720	TMM 26 072020
		Water	Surface Water Interface	Indoor Air Inhalation	12/12/2019	3/19/2020	5/28/2020	7/31/2020	12/12/2019	3/19/2020	5/28/2020	7/31/2020	12/12/2019	3/18/2020	5/27/2020	7/30/2020
Parameters	CAS Number ⁽¹⁾	Criteria*	Criteria	Criteria*												
Metals		40 (4)	40													
Arsenic Barium	7440-38-2 7440-39-3	10 (A) 2,000 (A)	10 (G)	NLV NLV	<5.0 290	<5.0 310	<5.0 330	<5.0 390	<5.0 520	<5.0 510	<5.0 540	<5.0 530	<5.0 140	<5.0 <100	<5.0 <100	<5.0 <100
Chromium, Total	7440-47-3	100 (A)	11	NLV	45	48	52	52	16	17	32	34	33	20	22	14
Copper	7440-50-8	1,000 (E)	(G)	NLV	4.2	5.6	<4.0	5.9	4	4.5	9.4	5.8	12	9.4	11	11
Lead	7439-92-1 7439-96-5	4.0 (L)	(G,X)	NLV NLV	<3.0 <50	<3.0 <50	<3.0 <50	<3.0 <50	<3.0 <50	7.2	14	10	<3.0 <50	<3.0 <50	<3.0 <50	<3.0 <50
Manganese Mercury, Total	7439-96-5	50 (E) 2.0 (A)	(G,X) 0.0013	56 (S)	<0.20	<0.20	0.103	<0.20	<0.20	<50 <0.20	<50 0.105	<50 <0.20	<0.20	<0.20	0.031	<0.20
Nickel	7440-02-0	100 (A)	(G)	NLV	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Selenium	7782-49-2	50 (A)	5	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Silver Vanadium	7440-22-4 7440-62-2	98 62	0.2 (M); 0.06 27	NLV NLV	<0.20 <4.0	<0.20 <4.0	<0.20 <4.0	<0.20 <4.0	<0.20 <4.0	<0.20 <4.0	<0.20 <4.0	<0.20 <4.0	<0.20 <4.0	<0.20 4.1	<0.20 9.1	<0.20 14
Zinc	7440-66-6	5,000 (E)	(G)	NLV	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Mercury, Low Level Analysis	7439-97-6	2.0 (A)	0.0013	56 (S)	~	~	0.00069	0.00090	~	~	0.0018	0.0036	~	~	0.020	0.03
Semi Volatile Organic Compounds																
Acenaphthene	83-32-9	3,800	38	4,200 (S)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acenaphthylene	208-96-8	150	ID	3,900 (S)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Aniline Anthracene	62-53-3 120-12-7	220 43 (S)	4.0 (M); 3.0 ID	NLV 43 (S)	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<5.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0	<4.0 <5.0
Azobenzene	103-33-3	45 (5) 94	ID	6,400 (S)	<5.0	<5.0 <5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 <5.0	<5.0
Benzo(a)anthracene (Q)	56-55-3	8.5	ID	NLV	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene (Q) Benzo(b)fluoranthene (Q)	50-32-8 205-99-2	5.0 (A) 1.5 (S, AA)	ID ID	NLV ID	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<5.0 <5.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
Benzo(g,h,i)perylene	191-24-2	1.0 (M); 0.26 (S)	ID ID	NLV	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene (Q)	207-08-9	1.0 (M); 0.8 (S)	NA	NLV	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0
Benzyl alcohol	100-51-6	29,000	NA	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0
4-Bromophenyl Phenylether Butyl benzyl phthalate	101-55-3 85-68-7	2,700 (S)	67 (X)	- NLV	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
Carbazole	86-74-8	350	10 (M); 4.0	NLV	<5.0	<5.0	<5.0	<5.0 <5.0	<5.0	<5.0	<5.0 <5.0	<5.0	<5.0	<5.0 <5.0	<5.0	<5.0 <5.0
4-Chloro-3-methylphenol	59-50-7	420	7.4	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bis(2-chloroethoxy)methane	111-91-1	-	-	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
bis(2-Chloroethyl)ether (I)	111-44-4	8.3	1.0 (M); 0.79	210,000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0
Bis(2-chloroisopropyl) Ether beta-Chloronaphthalene	108-60-1 91-58-7	5,200	NA	- ID	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
2-Chlorophenol	95-57-8	130	18	1,100,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Chlorophenyl Phenylether	7005-72-3	=	=	=	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chrysene (Q)	218-01-9	1.6 (S)	ID	ID	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenzo(a,h)anthracene (Q) Dibenzofuran	53-70-3 132-64-9	2.0 (M); 0.85 ID	1D 4.0	NLV 10,000 (S)	<2.0 <4.0	<2.0 <4.0	<2.0 <4.0	<2.0 <4.0	<2.0 <4.0	<2.0 <4.0	<2.0 <4.0	<5.0 <5.0	<2.0 <4.0	<2.0 <4.0	<2.0 <4.0	<2.0 <5.0
2,4-Dichlorophenol	120-83-2	210	11	10,000 (3) NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Diethyl phthalate	84-66-2	16,000	110	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2,4-Dimethylphenol	105-67-9	1,000	380	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dimethyl phthalate Di-n-butyl phthalate	131-11-3 84-74-2	210,000 2,500	NA 9.7	NLV NLV	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
2,4-Dinitrophenol	51-28-5	-	-	-	<20	<20	<20	<20	<20	<20	<20	<100	<20	<20	<20	<100
2,4-Dinitrotoluene	121-14-2	32	NA	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2,6-Dinitrotoluene	606-20-2		÷	÷	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Di-n-octyl phthalate bis(2-Ethylhexyl)phthalate	117-84-0 117-81-7	380 6.0 (A)	ID 14	NLV NLV	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
Fluoranthene	206-44-0	210 (S)	1.6	210 (S)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<5.0 <5.0
Fluorene	86-73-7	2,000 (S)	12	2,000 (S)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Hexachlorobenzene (C-66)	118-74-1	1.0 (A)	0.2 (M); 0.0003	3,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Hexachlorocyclopentadiene (C-56)	87-68-3 77-47-4	42 50 (A)	0.053 ID	3,200 (S) 420	<5.0 <5.0	<5.0 <5.0	~ <5.0	~ <5.0	<5.0 <5.0	<5.0 <5.0	~ <5.0	~ <25	<5.0 <5.0	<5.0 <5.0	~ <5.0	~ <25
Hexachlorocyclopentadiene (C-56) Hexachloroethane	77-47-4 67-72-1	50 (A) 21	6.7 (X)	420 50,000 (S)	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<25 <25	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<25 <5.0
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	2.0 (M); 0.022 (S)	ID	NLV	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<2.0	<2.0	<2.0	<2.0
Isophorone	78-59-1	3,100	1,300 (X)	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methyl-4,6-dinitrophenol	534-52-1 91-57-6	20 (M); 7.3 750	NA 19	NLV 25,000 (S)	<20 <5.0	<20 <5.0	<20 <5.0	<20	<20 <5.0	<20 <5.0	<20 <5.0	<25 <5.0	<20 <5.0	<20 <5.0	<20 <5.0	<25 <5.0
2-Methylnaphthalene Methylphenol, 2-	91-57-6 95-48-7	/5U -	19 82	25,000 (5)	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
Methylphenol, 3- and 4-	MEPH1314	-	25	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Nitroaniline	88-74-4	-	-	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
3-Nitroaniline	99-09-2	-	-	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20 <30	<20
4-Nitrobenzene (I)	100-01-6 98-95-3	9.6	180 (X)	550,000	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <5.0	<20 <3.0	<20 <3.0	<20 <3.0	<20 <3.0
2-Nitrophenol	88-75-5	58	ID	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Nitrophenol	100-02-7	-	=	=	<20	<20	<20	<20	<20	<20	<20	<25	<20	<20	<20	<25
N-Nitrosodimethylamine	62-75-9	- E O (NA): O 33	-	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0
n-Nitroso-di-n-propylamine N-Nitrosodiphenylamine	621-64-7 86-30-6	5.0 (M); 0.77 1,100	NA NA	NLV NLV	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
Pentachlorophenol	87-86-5	1.0 (A)	(G,X)	NLV	<20	<20	<20	<20	<20	<20	<20	<25	<20	<20	<20	<25
Phenanthrene	85-01-8	150	2.0 (M); 1.7	1,000 (S)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<2.0	<2.0	<2.0	<5.0
Phenol	108-95-2	13,000	450	NLV	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Pyrene Pyridine (I)	129-00-0 110-86-1	140 (S) 21	ID NA	140 (S) 12,000	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <25	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
2,4,5-Trichlorophenol	95-95-4	2,100	NA NA	NLV	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0	<5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
2,4,6-Trichlorophenol	88-06-2	470	5.0	NLV	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<5.0	<4.0	<4.0	<4.0	<5.0
Polychlorinated biphenyls (PCBs)	1336-36-3	0.5 (A)	0.2 (M); 2.5E-5	45 (S)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
			<u> </u>		<u> </u>		<u> </u>		<u> </u>							

Table 4 Summary of Groundwater Analytical Results RTRR - Riverview 18251 W. Jefferson, Riverview, MI ASTI Project No. 10860

				Nonresidential Groundwater												
		Nonresidential Drinking	Groundwater Surface Water	Volatilization to Indoor Air	MW-110S-121219	MW- 110S-031920		MW-110S-073120	MW-110D-121219		110D MW-110D-052820	MW-110D-073120	TMW-26-121219		V-27 ⁽⁴⁾ TMW-26-052720	TMW-26-07
	(1)	Water	Interface	Inhalation	12/12/2019	3/19/2020	5/28/2020	7/31/2020	12/12/2019	3/19/2020	5/28/2020	7/31/2020	12/12/2019	3/18/2020	5/27/2020	7/30/202
arameters olatile Organic Compounds	CAS Number ⁽¹⁾	Criteria*	Criteria	Criteria*												
cetone (I)	67-64-1	2,100	1,700	1,000,000,000 (D,S)	<50	<50	<50	<200	<50	<50	<50	<200	<50	<50	<50	<200
crylonitrile (I)	107-13-1	11	2.0 (M); 1.2	190,000	<2.0	<2.0	<2.0	<40	<5.0	<5.0	<10	<40	<2.0	<2.0	<2.0	<40
enzene (I) romobenzene (I)	71-43-2 108-86-1	5.0 (A)	200 (X) NA	35,000 390,000	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <10	<2.5 <5.0	<2.5 <2.5	<2.5 <2.5	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <10
romochloromethane	74-97-5	50	INA -	-	<1.0	<1.0	<1.0	<20	<2.5	<2.5	<5.0	<20	<1.0	<1.0	<1.0	<20
romodichloromethane	75-27-4	80 (A,W)	ID	37,000	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
romoform	75-25-2	80 (A,W)	ID	3,100,000 (S)	<1.0	<1.0	<1.0	<20	<5.0	<5.0	<5.0	<20	<1.0	<1.0	<1.0	<20
romomethane	74-83-9 78-93-3	29 38,000	5.0 (M); 4.2 2,200	9,000 240,000,000 (S)	<5.0 <25	<5.0 <25	<5.0 <25	<100 <40	<10 <25	<10 <25	<25 <25	<100 <40	<5.0 <25	<5.0 <25	<5.0 <25	<100 <40
-Butanone (MEK) (I) -Butylbenzene	78-93-3 104-51-8	230	2,200 ID	240,000,000 (S) ID	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5 <2.5	<40 <10	<1.0	<25 <1.0	<1.0	<10
ec-Butylbenzene	135-98-8	230	ID	ID	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
ert-Butylbenzene (I)	98-06-6	230	ID	ID	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
arbon disulfide (I,R)	75-15-0	2,300	ID	550,000	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<20
arbon tetrachloride hlorobenzene (I)	56-23-5 108-90-7	5.0 (A) 100 (A)	38 (X) 25	2,400 470,000 (S)	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <10	<5.0 <2.5	<5.0 <2.5	<2.5 <2.5	<10 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <10
hloroethane	75-00-3	1,700	1,100 (X)	5,700,000 (S)	<5.0	<5.0	<5.0	<40	<5.0	<5.0	<5.0	<40	<5.0	<5.0	<5.0	<40
hloroform	67-66-3	80 (A,W)	350	180,000	<1.0	<1.0	<1.0	<10	<5.0	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
hloromethane (I)	74-87-3	1,100	ID	45,000	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<20
-Chlorotoluene (I) ibromochloromethane	95-49-8 124-48-1	420 80 (A,W)	ID ID	370,000 (S) 110,000	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<10 <20	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<10 <20	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<10 <20
ibromochloropropane	96-12-8	0.2 (A)	ID	1,200 (S)	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
ibromomethane	74-95-3	230	NA	ID	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10
,2-Dichlorobenzene	95-50-1	600 (A)	13	160,000 (S)	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
,3-Dichlorobenzene ,4-Dichlorobenzene	541-73-1 106-46-7	19 75 (A)	28 17	41,000 74,000 (S)	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20	<2.5 <2.5	<2.5 <2.5	<2.5 <5.0	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20
ichlorodifluoromethane	75-71-8	4,800	ID	300,000 (S)	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10
,1-Dichloroethane	75-34-3	2,500	740	2,300,000	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
2-Dichloroethane (I)	107-06-2	5.0 (A)	360 (X)	59,000	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
s-1,2-Dichloroethylene	156-59-2 156-60-5	70 (A) 100 (A)	620 1,500 (X)	210,000 200,000	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20	<2.5 <2.5	<2.5 <2.5	<2.5 <2.5	<10 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <20
ans-1,2-Dichloroethylene ,1-Dichloroethylene (I)	75-35-4	100 (A) 7.0 (A)	1,500 (X) 130	1,300	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <10	<2.5 <2.5	<2.5 <2.5	<2.5 <2.5	<20 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <10
,2-Dichloropropane (I)	78-87-5	5.0 (A)	230 (X)	36,000	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
s-1,3-Dichloropropylene	10061-01-5	-	-	-	<0.50	<0.50	<0.50	<10	<2.5	<2.5	<2.5	<10	<0.50	<0.50	<0.50	<10
rans-1,3-Dichloropropylene	10061-02-6	- 74 (E)	- 10	- 170 000 (C)	<0.50	<0.50	<0.50	<10	<2.5	<2.5 <2.5	<2.5	<10 <10	<0.50	<0.50	<0.50	<10 <10
thylbenzene (I) thylene dibromide	100-41-4 106-93-4	74 (E) 0.05 (A)	18 5.7 (X)	170,000 (S) 15,000	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10 <10	<2.5 <2.5	<2.5 <2.5	<2.5 <2.5	<10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<10
exachloroethane	67-72-1	21	6.7 (X)	50,000 (S)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0
-Hexanone	591-78-6	2,900	ID	8,700,000	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
opropyl benzene	98-82-8	2,300	28	56,000 (S)	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10
-Methyl-2-pentanone (MIBK) (I) 1ethylene chloride	108-10-1 75-09-2	5,200 5.0 (A)	1D 1,500 (X)	20,000,000 (S) 1,400,000	<50 <5.0	<50 <5.0	<50 <5.0	<100 <20	<50 <5.0	<50 <5.0	<50 <5.0	<100 <20	<50 <5.0	<50 <5.0	<50 <5.0	<100 <20
1ethyl-tert-butyl ether (MTBE)	1634-04-4	40 (E)	7,100 (X)	47,000,000 (S)	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<10
aphthalene	91-20-3	1,500	11	31,000 (S)	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<20
-Propylbenzene (I)	103-65-1	230	ID ao (v)	ID 210 000 (5)	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
tyrene ,1,1,2-Tetrachloroethane	100-42-5 630-20-6	100 (A) 320	80 (X) ID	310,000 (S) 96,000	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <20	<2.5 <2.5	<2.5 <2.5	<5.0 <5.0	<20 <20	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <20
,1,2,2-Tetrachloroethane	79-34-5	35	78 (X)	77,000	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
etrachloroethylene	127-18-4	5.0 (A)	60 (X)	170,000	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
oluene (I)	108-88-3	790 (E)	270	530,000 (S)	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
,2,4-Trichlorobenzene ,1,1-Trichloroethane	120-82-1 71-55-6	70 (A) 200 (A)	99 (X) 89	300,000 (S) 1,300,000 (S)	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<20 <10	<10 <2.5	<5.0 <2.5	<5.0 <2.5	<25 <10	<5.0 <1.0	<5.0 <1.0	<5.0 <1.0	<20 <10
1,2-Trichloroethane	79-00-5	5.0 (A)	330 (X)	110,000	<1.0	<1.0	<1.0	<20	<2.5	<2.5	<5.0	<20	<1.0	<1.0	<1.0	<20
richloroethylene	79-01-6	5.0 (A)	200 (X)	4,900	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
richlorofluoromethane	75-69-4	7,300	NA	1,100,000 (S)	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
,2,3-Trichloropropane ,2,3-Trimethylbenzene	96-18-4 526-73-8	120	NA -	18,000	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <10	<5.0 <2.5	<2.5 <2.5	<5.0 <2.5	<20 <10	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<20 <10
,2,4-Trimethylbenzene	95-63-6	63 (E)	17	56,000 (S)	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
3,5-Trimethylbenzene	108-67-8	72 (E)	45	61,000 (S)	<1.0	<1.0	<1.0	<10	<2.5	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
inyl chloride	75-01-4	2.0 (A)	13 (X)	13,000	<1.0	<1.0	<1.0	<10	<5.0	<2.5	<2.5	<10	<1.0	<1.0	<1.0	<10
1&p-Xylene -Xylene	136777-61-2 95-47-6	-	-	-	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<20 <10	<5.0 <2.5	<5.0 <2.5	<5.0 <2.5	<20 <10	<2.0 <1.0	<2.0 <1.0	<2.0 <1.0	<20 <10
ylenes	1330-20-7	280 (E)	49	190,000 (S)	<3.0	<3.0	<3.0	<30	<7.5	<7.5	<7.5	<30	<3.0	<3.0	<3.0	<30
,				.,,												
mmonia	7664-41-7	10,000 (N)	(CC)	7,100,000	4,300	3,700	3,400	4,000	3,600	3,100	3,100	3,500	2,700	1,900	2,100	3,300
hloride otal dissolved solids	16887-00-6 TDS	250,000 (E) 500,000 (E)	50,000 500,000	NLV ID	47,000 1,200,000	46,000 1,300,000	51,000 1,500,000	42,000 1,500,000	38,000 1,700,000	39,000 1,800,000	39,000 1,700,000	37,000 1,800,000	<10,000 710,000	<10,000 640,000	<10,000 560,000	<10,000 540,000
H	PH	6.5 to 8.5 (E)	6.5 to 9.0	ID	12.3	12.4	12.4	12.4	12.5	12.5	12.5	12.5	11.7	12.1	12	12
otes: 1) "CAS Number - Chemical Abstract Number 1) "µg/I" - micrograms per liter or parts per billion 3) - "S.U." - standard units 1) - Samples collected from TMW-27 were labeled as "TMW-2" "- No standard Per R299.44, June 25, 2018	26".															
Parameter not tested for at his location. -Insufficient data to develop criterion. A-Not available. LV-Hazardous substance is not likely to volatilize under most -Criterion is the State of Michigan drinking water standard e -Calculate criterion exceeds 100%, hence it is reduced to 100	stablished pursuan	t to Section 5.														

Table 5 Groundwater Flow Calculations RTRR - Riverview 18251 W. Jefferson, Riverview

18251 W. Jefferson, Riverview ASTI Project No.: 10860

Purpose: To calculate groundwater flow from the Subject Property to the

Monguagon Creek and Trenton Channel.

Equation: Q = K A i

Where: $Q = groundwater flow (ft^3/day)$

K = hydraulic conductivity (ft/day)

A = cross-sectional area of groundwater flow (ft ²⁾ (height of saturated zone (w) * length of GSI (l))

i = hydraulic gradient (unitless)

Northern Flow Zone			Note						
wells: TMW-27 and MW-1	.00s/i								
Hydraulic conductivity K = 1.8 ft/day			Maximum K value for MW-100s & MW-100i						
height of GW	w =	24.3 ft	height of saturated zone in MW-100s/MW-100i						
	I =	1,810 ft	northern property line at Monguagon Creek and north end of sheet pile wall						
	Area	43,983 ft ²	cross-sectional area of groundwater flow to the stream						
	i =	0.01	hydraulic gradient between TMW-27 & MW-100s/i						
	Q =	792 ft³/day							
	Q =	5,922 gal/day							
	Q =	4.11 gpm							
	Q =	3.27 gpd/ft							
Southern Flow Zone			Note						
wells: MW-101, MW-107s		•							
Hydraulic conductivity	K =	12.8 ft/day	Maximum K value in Southern Flow Zone						
height of GW	w =	12.7 ft	height of saturated zone (average height in GSI wells)						
	I =	3,230 ft	Southern end of sheet-pile wall to the southern property line at the Trenton Channnel						
	Area	41,021 ft ²	cross-sectional area of groundwater flow to the stream						
	i =	0.0005	maximum hydraulic gradient between MW-106 and MW107s						
	Q =	263 ft ³ /day							
	Q =	1,964 gal/day							
	Q =	1.36 gpm							
	Q =	0.61 gpd/ft							

Table 6
Representative Concentrations
Chemicals Exceeding the Groundwater Surface Water Interface Criteria
RTRR Property
18251 W. Jefferson, Riverview

ASTI Project No.: 10860

Northern Flow Zone Groundwater/Surface Water Interface (GSI) Wells: MW-100s and MW-100i

		Number of	Number of	Maximum Detected	Representative	Groundwater Surface Water	
Parameter	CAS Number ⁽¹⁾	Samples	Detections	Concentration (µg/L) ⁽¹⁾	Concentration (µg/L)(2,3)	Interface Criteria (µg/L)	
Arsenic	7440-38-2	8	8	470	283.1	10	
Total Chromium ⁽⁴⁾	7440-47-3	8	1	12	12	11	
Selenium	7782-49-2	8	2	9	6.942	5	
Mercury	7439-97-6	8	4	0.424	0.233	0.0013	
Aniline ⁽⁴⁾	62-53-3	8	1	7.3	7.3	4.0 (M); 3.0	
Carbazole ⁽⁴⁾	86-74-8	8	1	12	12	10 (M); 4.0	
Dibenzofuran ⁽⁴⁾	132-64-9	8	1	4.2	4.2	4.0	
Fluoranthene	206-44-0	8	7	3.1	2.057	1.6	
Methylphenol, 3- and 4-	MEPH1314	8	8	150	117.8	25	
Phenanthrene	85-01-8	8	8	5.8	4.942	2.0 (M); 1.7	
Naphthalene	91-20-3	8	7	240	187.5	11	
Vinyl chloride	75-01-4	8	7	29	21.43	13 (X)	
Xylenes	1330-20-7	8	5	84	64.18	49	
Chloride	16887-00-6	8	8	290,000	186,278	50,000	
Total Dissolved Solids	TDS	8	8	2,900,000	2,569,077	500,000	

Southern Flow Zone GSI Wells: MW-101, MW-107s, MW-108, MW-110s, and MW-100D

	CAC Normalism	Number of	Number of	Maximum Detected	Representative	Groundwater Surface Water	
Parameter	CAS Number	Samples	Detections	Concentration (µg/L) ⁽¹⁾	Concentration (µg/L) ⁽²⁾	Interface Criteria (µg/L)	
Total Chromium	7440-47-3	20	12	52	29.51	10	
Mercury	7439-97-6	20	10	0.113	0.0784	0.0013	
Silver ⁽³⁾	7440-22-4	20	1	0.63	0.63	0.2 (M); 0.06	
Methylphenol, 3- and 4-	MEPH1314	20	4	110	35.24	25	
Phenanthrene ⁽⁴⁾	85-01-8	20	1	2.5	2.5	2.0 (M); 1.7	
Naphthalene	91-20-3	20	7	140	46.83	11	
1,2,4-Trimethylbenzene	95-63-6	20	7	51	17.99	17	
Total Dissolved Solids	TDS	20	20	1,800,000	1,294,677	500,000	

Notes:

- (1) CAS Number Chemical Abstract Service Number
- (2) "µg/L" micrograms per liter or parts per billion
- (3) The Representative Concentration is the 95% UCL
- (4) A 95% UCL could not be calculated from the dataset. Therefore, the maximum concentration was used as a conservative measure.

Table 7a
Chemical Mass Loading - Northern Flow Zone
RTRR - Riverview

18251 W. Jefferson, Riverview ASTI Project No.: 10860

Northern Flow Zone

		Wells withm Groundwater to Surface	Length of GSI	Total Flow	Total Flow	Flow per Foot	Representative	Chemical Load to
Parameter	CAS Number ⁽¹⁾	Water Interface Criteria Exceedance(s)		(gpd) ⁽²⁾	(L/day) ⁽³⁾	(gpd/ft) ⁽⁴⁾	Concentration (µg/L) ⁽⁵⁾	Stream (g/day) ⁽⁶⁾
Arsenic	7440-38-2	MW-100s, MW-100i	1,785	5,837	22,093	3.27	283.1	6.25
Total Chromium	7440-47-3	MW-100i	1,785	5,837	22,093	3.27	12	0.27
Selenium	7782-49-2	MW-100s, MW-100i	1,785	5,837	22,093	3.27	6.942	0.15
Total Mercury	7439-97-6	MW-100s, MW-100i	1,785	5,837	22,093	3.27	0.233	0.01
Aniline	62-53-3	MW-100s	1,785	5,837	22,093	3.27	7.3	0.16
Carbazole	86-74-8	MW-100i	1,785	5,837	22,093	3.27	12	0.27
Dibenzofuran	132-64-9	MW-100s	1,785	5,837	22,093	3.27	4.2	0.09
Fluoranthene	206-44-0	MW-100i	1,785	5,837	22,093	3.27	2.057	0.05
Methylphenol, 3- and 4-	MEPH1314	MW-100s, MW-100i	1,785	5,837	22,093	3.27	117.8	2.60
Phenanthrene	85-01-8	MW-100s, MW-100i	1,785	5,837	22,093	3.27	4.942	0.11
Naphthalene	91-20-3	MW-100s, MW-100i	1,785	5,837	22,093	3.27	187.5	1.00
Vinyl chloride	75-01-4	MW-100s, MW-100i	1,785	5,837	22,093	3.27	21.43	0.47
Xylenes	1330-20-7	MW-100s	1,785	5,837	22,093	3.27	64.18	1.42
Chloride	16887-00-6	MW-100s, MW-100i	1,785	5,837	22,093	3.27	186,278	4,115
Total Dissolved Solids	TDS	MW-100s, MW-100i	1,785	5,837	22,093	3.27	2,569,077	56,758

Notes:

Northern Flow Zone defined as point where Monguagon Creek enters the property to the northern end of the sheet-pile wall. MW-100s and MW-100i screen the same water-bearing zone.

- (1) CAS Number Chemical Abstract Service Number
- (2) "gpd" gallons per day
- (3) "L/day" liters per day
- (4) "gpd/ft" gallons per day per linear foot of GSI
- (5) "μg/L" micrograms per liter or parts per billion
- (6) "g/day" grams per day

Table 7b

Chemical Mass Loading - Southern Flow Zone

RTRR - Riverview

18251 W. Jefferson, Riverview ASTI Project No.: 10860

Southern Flow Zone

			Length of	Flow per Foot	Total Flow	Total Flow	Representative	Chemical Load to
Parameter	CAS Number ⁽¹⁾	Wells withm Groundwater to Surface Water Interface Criteria Exceedance(s)	GSI (ft) ⁽¹⁾	(gpd/ft) ⁽²⁾	(gpd) ⁽³⁾	(L/day) ⁽⁴⁾	Concentration (µg/L) ⁽⁵⁾	Stream (g/day) ⁽⁶⁾
Total Chromium	7440-47-3	MW-108, MW-110s, MW-110D	2,720	0.61	1,659	6,280	29.51	0.19
Total Mercury	7439-97-6	MW-101, MW-108, MW-110s, MW-110D	3,230	0.61	1,970	7,458	0.0784	5.8E-04
Silver	7440-22-4	MW-101	480	0.61	293	1,108	0.63	7.0E-04
Methylphenol, 3- and 4-	MEPH1314	MW-107s	1,000	0.61	610	2,309	35.24	0.08
Phenanthrene	85-01-8	MW-107s	1,000	0.61	610	2,309	2.5	0.006
Naphthalene	91-20-3	MW-107s	1,000	0.61	610	2,309	46.83	0.11
1,2,4-Trimethylbenzene	95-63-6	MW-101	480	0.61	293	1,108	17.99	0.02
Total Dissolved Solids	TDS	MW-101, MW-107s, MW-108, MW-110s, MW-110D	3,230	0.61	1,970	7,458	1,294,677	9,655

Notes:

Northern Flow Zone defined as the southern end of the sheet-pile wall to the southern property line at the Trenton Channel.

MW-110s and MW-110D screen the same water-bearing zone.

- (1) The length of the GSI accounts for the distance between wells with GSI exceedances, halfway to the nearest well without GSI exceedances, or to the flow zone boundry.
- (2) "gpd/ft" gallons per day per linear foot of GSI
- (3) "gpd" gallons per day
- (4) "L/day" liters per day
- (5) "μg/L" micrograms per liter or parts per billion
- (6) "g/day" grams per day

ATTACHMENTS



Attachment A

Soil Boring and Well Construction Logs





GROUNDWATER MONITORING WELL MW-100S & MW-100i

PROJECT NUMBER 10860 **PROJECT NAME RTRR - Riverview**

CLIENT Riverview-Trenton Rail Road Company

ADDRESS 18521 W. Jefferson City, State Riverview, MI

DRILLING DATE 10/14/2019 - 10/15/2019

TOTAL DEPTH 30 ft. bgs **DIAMETER** 6 inches CASING 2- in. dia. PVC

SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448499.446, 248577.372

COORD SYS 2113 - Michigan South **COMPLETION** Stick-up Steel Casing **GROUND SURFACE ELEVATION 578.4**

WELL TOC MW-100s = 581.97, MW-100i = 581.92

COMMENTS Driller: Cascade Drilling using rotosonic.Near the northern property boarder, in former LOGGED BY GSO stream bed, MW-100s screened at top of upper water-bearing zone, MW-100i screened at bottom of

		, MVV-1005 S r-bearing zor I	creened at top of upper water-bearing zone, MW-100i screened at bottom o nee I	'I 				
PID	Depth (ft)	Graphic Log	Material Description	nscs	100s		Vell Diagram	Elevation (ft)
					_			- - 582
	- 3							_
	=							581
	2							- - 580
	- 1							- 560
	E - '							_ _ 579
	0		SILT & GRAVEL, brown, sandy silt and gravel, fine to coarse sand, fine	GM	\square			
	.	9.000	to coarse gravel, sub-angular to angular, moist	Own	\bowtie		concrete cement grout	- 578 -
2.0	1 							- - 577
	_ _ 2						bentonite	
8.0	_	0 0						- 576
	- 3	0.000						- 575
9.6	- - 4							
	-	9.000	- cobbles present at about 4 ft. bgs. - saturated at about 4 ft. bgs		╠┋			574
	5	0. 6.0	SAND & GRAVEL, brown, clayey sand and cobbles, slag fill present,	GC	┟╢┋			- - - 573
1.1	- - 6	0.0000	shards of metal, saturated					575
								572
12.4	7							F
	- - - 8							571
	E	1. 2 2	GRAVEL, brown, cobble-size slag fill, little clay, moist	GC				570
	9		COBBLES, brown, slag cobbles, little sand and silt, wet, fill	GM	╂╠┋			
	- 40	9.000	CODDELEG, DIGHT, Gray CODDICC, INIC CAINS AND GRAY, WO, III				filter pack	- 569 -
3.7	- 10 -	0000	SAND & GRAVEL, brown, silty sand and gravel, fine to coarse sand, fine to coarse gravel, sub-rounded to angular gravel and cobbles, wood	GW	1::[_ _ 568
	_ 11		fragments, slag, metal shard, fill					
	_	2000						<u> </u>
160	<u> </u>							- 566
100	13	000						
	E	0000						565
	14					1::		_ _ 564
	- - 15	0011.0						
72.2	ļ .							563
	16	20,00			<u> </u>	<u>.∷.</u>	<u> ::: </u>	F



GROUNDWATER MONITORING WELL MW-100S & MW-100i

PID	Depth (ft)	Graphic Log	Material Description	nscs	100s	Well [Diagram	Elevation (ft)
).9	- - - - - - 17	600000 6000000000000000000000000000000						- - - - - - - 56
237	- - 18 - -		SAND, black, clayey fine to coarse sand, little gravel, rounded to sub-angular gravel, metal shards, wet	SW				56
4	- 19 - - - - 20							55
	21		CLAY with GRAVEL, black, sandy clay and gravel, cobbles, saturated, fill - brick fragments at 22 ft. bgs	GC				- - - 55
5	22		SAND, black, clayey sand, little angular fine gravel, wet	sc			filter pack	- 55 -
	_ 23							- 55 - - - 55
0	24 		CLAY, black, soft, sandy clay, high plasticity, fine to medium sand, moist	SC/CH				- - - - 5
	25							5:
6	26 27							5:
9	28		CLAY, black, soft clay, high plasticity moist - grades to gray at 29 ft. bgs	СН	7777777			- - - - -
	_ _ _ 29						bentonite back	- 55 - - - 54
	- - - - -		Total depth: 30 ft. bgs					5,
	31 							5
	32							5-
	- 33 - - - - 34							54
	- 34 - - - - 35							5-
	_ _ _ 36							5
	_ 37							- 54 54
	38							5.
	39							- - - - 50



PROJECT NUMBER 10860
PROJECT NAME RTRR - Riverview
CLIENT Riverview-Trenton Rail Road Company
ADDRESS 18521 W. Jefferson

City, State Riverview, MI

DRILLING DATE 10/21/2019
TOTAL DEPTH 30 ft. bgs
DIAMETER 6 inches
CASING 2- in. dia. PVC

SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448459.271, 244290.332 COORD SYS 2113 - Michigan South COMPLETION Stick-up Steel Casing GROUND SURFACE ELEV. 589.5 ft. AMSL WELL TOC MW-101: 593.15 ft. AMSL

COMMENTS Driller: Cascade Drilling using rotosonic. Near the southwest corner of the property. MW-101 screens the upper water-bearing zone.

LOGGED BY GSO

			per water-bearing zone.	ı	1	
PID	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram	Elevation (ft)
3.5 6.5 15.8 6.3 3.8			SAND & GRAVEL, brown silty sand and gravel, loose, trace cobbles, dry CLAY, soft, sandy clay, little gravel, moist SAND, brown, silty sand, little gravel and cobbles, brick fragments and slag, fill	SC SM	concrete -cement grout -bentonite -filter pack	593 593 592 591 590 588 588 587 586 586 588 588 583 583 584 583 583 584 583 584 583 583 584 583 584 588
53.0	15	28	CLAY, soft, sandy clay, fine to medium sand, little angular gravel, saturated			- - - - - - - - 574



	· · · · · ·	ONMENTA	\			
PID	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram	Elevation (ft)
	- 17 - 17					573 - - - - - - - -
	18 - - 19		CLAY, brown/tan, stiff clay, medium/high plasticity, little sand, wet	CL		 571
	20	9 X 9	SAND, gray, loose, clayey coarse sand, little gravel and fine to medium sand,	SC		- - - 570 - - - - - - - - - - - - - - - - - - -
13.3	E		saturated			- - - - - - 568
10.0	22 23		SAND, brown, silty fine sand, loose, moist SAND, white, loose, clayey fine sand, moist	SM SC	filter pack	_ _ 567 _
12.8	- - - 24					- 566
9.6	25		CLAY, gray, soft clay, brick fragments, saturated	СН		
	- 26 - - - 27					- 563
	28					- 562 - - - - 561
	29					560
	30 - - - - - 31		Total depth: 30 ft. bgs			- - 559 -
	32					- 558 - - - - 557
	33					- - - - 556
	34					_ _ 555 _
	36					- - - 554 - - - - 553
	37					552
	38					551
						_ _ 550 _



PROJECT NUMBER 10860
PROJECT NAME RTRR - Riverview
CLIENT Riverview-Trenton Rail Road Company
ADDRESS 18521 W. Jefferson

City, State Riverview, MI

DRILLING DATE 10/22/2019 TOTAL DEPTH 60 ft. bgs DIAMETER 6 inches CASING 2- in. dia. PVC

SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448148.742, 247771.931 COORD SYS 2113 - Michigan South COMPLETION Stick-up Steel Casing GROUND SURFACE ELEV. 589.4 ft. AMSL WELL TOC MW-102D: 592.05 ft. AMSL

COMMENTS Driller: Cascade Drilling using rotosonic. Near the southwest corner of the property. MW-101 screens the upper water-bearing zone.

LOGGED BY AJR

IVIVV-	lu i sc	Teeris trie up	per water-bearing zone.	1		
PID	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram	Elevation (ft)
	-					- - 592
	-2					502
						591
	1 					_ _ 590
	0	///////////////////////////////////////	OLAV array along with sound and array a		concrete	- 330
	Ē		CLAY, gray, clay, with sand and gravel SAND, dark brown, fine to coarse sand, with gravel and brick fragments	CL SW	cement	589
0.3	<u> </u>		o, 1.2, a.m. 2.01.1, to 000.00 00.12, grano. 0.12 2.101 1.2g	"	grout	F 500
	- - 2					<u> </u>
0.5	-					587
0.5	3					
	- 4					- 586 -
0.6	<u> </u>					_ _ 585
	5					E
	_ 6					<u> </u>
3.6			Sand, brown with white mottling, fine to coarse sand, with concrete, brick fragments, and cobbles			- - 583
	7		- orange mottling at 6.5 ft. bgs - becomes brown			E
			- becomes brown			582
6.8	- 8		SAND, dark brown, clayey fine to coarse sand, with gravel and cobbles, slag, dry]		- 581
	9		ury		bentonite	-
3.4	<u> </u>					580
	- 10					- - 579
0.1	_ 11		SAND, dark brown, fine to coarse sand, with gravel and cobbles, moist	-		
	_		SAND, dark brown, line to coarse sand, with graver and cobbies, moist			578
0.2.	<u> </u>					- - 577
	13	777777777	OLAV harring resolutions also little and little			- 377
	E		CLAY, brown, very dense, clay, little sand and gravel, dry	CL		576
0.2	14					-
	- - 15			1		- 575
0.3	<u> </u>		CLAY, brown, very dense, clay, little subrounded to subangular cobbles and gravel			574
0.3	16					<u> </u>
	- - 17					<u> </u>



		ONMENTA	\				
PID	Depth (ft)	Graphic Log	Material Description	nscs	Well D	iagram	Elevation (ft)
0.2	- ''						- - 572
	- - 18						5/2
	- 10						_ _ 571
	- - 19						F 3/1
0.3	_ 19						- 570
	20						- 370
	F 20		No returns				_ _ 569
	- - 21						_ 309
	F 21						- 568
	- - 22						500
	_ 22						F67
	23						- 567
	23						- 566
	<u>ار</u> م						- 300
	_ 24		CLAY, dense, clay, little sand and gravel, high plasticity, wet	СН			- 565
	- 25						- 505
	25						F64
	-						564
	26						-
	F 0.7						_ 563
	<u> </u>						
	F						562
	28						504
	F					-bentonite	561
	_ 29					- bentonite	F00
	F		abla				560
0.2	30						
	F 04						_ 559 _
	- 31						
0.1	F						_ 558 _
	32						<u> </u>
	F						557
	33						
0.2	F						_ 556 _
	34						
	<u>ہ۔</u>				\///.		_ 555 _
	35						-
	F 32						554
0.1	36						
	<u>ہ</u> ۔						_ 553 _
	- 37						
	F						_ 552 _
	38						F 554
	F						_ 551 _
0.1	39						F 550
	<u>ا</u> ۔ ۔						550
	- 40						F 40
	<u> </u>			<u></u>			549
_					 		



		ONMENTA				
PID	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram	Elevation (ft)
0.1	- 41					- - 548
0.2	42					-
0.2	-					547
	43					- 546
	44					E
0.3	- - 45				bentonite	_ 545 _
	F 43					- - 544
0.1	46					E
	47					- 543 -
	F ''					542
0.1	48					-
	- - 49					<u> </u>
	-					540
	50					F 500
	- - 51					539
0.2	Ē				filter pack	538
	52		COBBLES, with sand and gravel, wet	GW		- - - 537
	- - 53					- 557
0.4	E	0000				536
	- 54 -		CLAY, grey, dense, clay, little sand and gravel, high plasticity, wet	СН		_ _ _ 535
	_ _ 55					533
4.5	E					534
	<u>-</u> 56 -		CLAY and SAND, very sandy clay, with cobbles and gravel, dry	CL		- - 533
	57					
	<u> </u>				sand backfill	532
1.2	- 58					- 531
	59					F
10.5	F					530
	60		Total depth: 60 ft. bgs			- - - 529
	61					E
	- - 62					- 528 -
	02					- - 527
	63					F
	64					- 526 -
	F • • • • • • • • • • • • • • • • • • •					_ _ 525
	⊢	<u> </u>		<u> </u>	1	L



PROJECT NUMBER 10860
PROJECT NAME RTRR - Riverview
CLIENT Riverview-Trenton Rail Road Company

ADDRESS 18521 W. Jefferson **City, State** Riverview, MI

DRILLING DATE 10/17/2019 TOTAL DEPTH 30 ft. bgs DIAMETER 6 inches CASING 2- in. dia. PVC

SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448472.443, 247545.746
COORD SYS 2113 - Michigan South
COMPLETION Stick-up Steel Casing

GROUND SURFACE ELEV. 588.8 WELL TOC MW-103: 592.11

COMMENTS Driller: Cascade Drilling using rotosonic. Located near near the center of the site in the former stream bed. Screened in the upper water-bearing zone.

LOGGED BY AJR

	1				1		
PID	Depth (ft)	Graphic Log	Material Description	nscs	103 ^	Vell Diagram	Elevation (ft)
	- - 3					1	_ _ 593
							- - 592
							_ _ 591
	1 						590
	0	9.000	SAND, dark brown, silty fine to coarse sand, little subrounded gravel	GM		concrete	- - - 589
4.0	- 1 -					grout	- - - 588
	_ 2	1400	SAND, dark brown, fine to coarse sand, little subrounded to subangular gravel and cobbles, brick fragments	SW			- - - 587
	3						_ _ _ 586
1.0	<u>-</u> 4						_ _ _ _ 585
	_ _ 5						- - - - 584
4.1	6						- 583
	- - 7						E
2.5	8		CLAY, grey with white mottling, sandy clay, little	CL		bentonite	- 582 - - - -
	9		subrounded to subangular gravel and cobbles SAND, dark brown, clayey sand, fine to coarse sand, little subrounded to	SM			- 581 - - -
	- - 10	<i>77777777</i>	subangular gravel and cobbles	CL			<u> </u>
3.0	- - - 11		CLAY, sandy clay, moderate plasticity, little subrounded gravel	CL			- - 579 -
	_ _ _ 12						- - - - -
3.7	13		SAND, silty sand, fine to coarse sand, little subrounded to subangular gravel and cobbles	SM			_ _ 577 _
			SAND, clayey sand, fine to coarse sand, little subrounded to subangular gravel and cobbles	sc			_ _ 576
9.3	- 14 - - -						_ _ 575
	- 15 - -					filter pack	574
Ь	1 16	1			11	1	



	VIK	ONMENTA	AL		1	
PID	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram	Elevation (ft)
11.0	F '					- - 573
	17		CLAY, dark brown, sandy clay, little gravel and cobbles	CL		- - - - 572
16.3	18					_ 571
3.5	_ 19 _ _					_ _ 570
0.5	- 20 - - -	<i>(////////////////////////////////////</i>	SAND, dark brown, coarse sand, little gravel and cobbles, metal shards, wood fragments, wet	SW		_ _ 569
	- 21 - - - 22	00000	GRAVEL, dark brown, gravel and cobbles, metal shards, wood fragments, wet	GW	filter pack	_ _ 568 _
0.5	23	00000000000000000000000000000000000000				_ _ 567 _
	24					566
1.2	25		CLAY, sandy clay, fine to coarse sand, little gravel, dry	CL		565
0.5	26		CLAY, grey with brown mottling, little gravel	-		- 564 - - - -
	27					- 563 - - - 562
3.0	28				sand backfill	_ _ _ _ 561
1.4	29				Dackiiii	560
	30		Total depth: 30 ft. bgs		<u> </u>	-
	31					- 559 - - - 558
	32					_ _ _ _ 557
	33					556
	- 34 - - -					- - - - 555
	35					554
	30					_ _ 553 _
	38					552
	39					551
						550



PROJECT NUMBER 10860
PROJECT NAME RTRR - Riverview
CLIENT Riverview-Trenton Rail Road Company
ADDRESS 18521 W. Jefferson

City, State Riverview, MI

DRILLING DATE 10/16/2019 TOTAL DEPTH 55 ft. bgs DIAMETER 6 inches CASING 2- in. dia. PVC

SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448716.549, 247573.896 COORD SYS 2113 - Michigan South COMPLETION Stick-up Steel Casing GROUND SURFACE ELEV. 588.4

WELL TOC MW-104: 591.68

COMMENTS Driller: Cascade Drilling using rotosonic. Located down gradient of WMU-27. Screened in the upper water-bearing zone.

LOGGED BY GSO

			•		1		1
PID	Depth (ft)	Graphic Log	Material Description	nscs	\	Well Diagram	Elevation (ft)
							- - 592
	- 3					7	E
	Ė						591
	2						_
	E						590
	-1						Ē
							- 589 -
	- 0		SAND, brown, loose, silty sand, fine to coarse, little fine to medium gravel,	SM		concrete	- 588
	<u> </u>		moist			cement	
1.8	E'		SAND, orange, loose, fine sand, little medium sand and fine gravel, dry	SP			_ - 587
	2	: 0°0	SAND & GRAVEL, brown, loose, silty sand, fine to coarse sand and sub-rounded to sub-angular gravel, brick fragments, metal shards, dry	GP			E
			sub rounded to sub angular graver, brisk ragments, metal situads, dry				586
2.2	_ 3	0.000					
2.2	E	0.0000					<u> </u>
	- 4	0.00				bentonite	_ _ 584
7.9	F _	0.0000					564
	- 5 -	0 0000					- - 583
	<u> </u>	000					
	Ė						582
40.4	- 7	0.0000					_
12.1	E						581
	- 8	0.000					Ē
16		0.0000					580
	- 9	5.000					- - 579
914.	- - 10	00000					E 073
	F 10		- little gravel and sub-angular cobbles				_ _ 578
	- - 11	0.0000					E
9.0		///	SAND, black, clayey sand, fine to coarse sand, little sub-angular to rounded cobbles, wood fragments	SC		filter pack	577
	12		SAND, dark grey, clayey sand, some gravel, metal shards	-			E _
12.2	Ė		orano, dank groy, dayor dana, domo gravor, metar sharas				- 576 -
	13		CLAY, brown, very stiff, sandy clay, fine to coarse sand	CL	::: <u> </u>] ::::	_ _ 575
	- 44		CLAY, dark grey, sandy clay, high plasticity, some gravel and cobbles, wet	1			3/3
4.5	<u> </u>					: ::::	- 574
	- - 15						<u> </u>
							573
	16	<u> </u>			.::: <u> </u>	<u> </u>	



	V 11 X	ONMENTA	AL	1			
PID	Depth (ft)	Graphic Log	Material Description	nscs	Well Di	agram	Elevation (ft)
1.5	- 10 - - - 17						- - - 572
3.1	18		SAND, dark brown, clayey sand, fine to coarse sand	SC		-filter pack	- 571 - 570
	19		CLAY, dark brown, medium stiff, clay, high plasticity	СН			_ _ _ 569
3.3	20		CLAY, grey, very stiff, clay, little fine sand, high plasticity, moist				- - - 568
	- 21 - - -						_ _ 567
0.9	<u>22</u>						566
1.0	<u> 23 </u>						_ _ 565
2.1	24						_ _ 564
5.2	_ 25 _ _						563
2.8	26						_ _ 562
6.4	27						561
	28						560
5.1	29						_ _ 559
	30		CLAY, grey, soft, clay, little fine sand, trace fine gravel, high plasticity, wet	CL		_bentonite backfill	_ _ 558
0.4	31						_ _ 557
0.8	32						_ _ 556
	33						_ _ 555
0.5	34						_ _ 554
1.3	35						_ _ 553
	36						- - 552
	37						_ _ 551
	38						_ _ 550
2.5	39						_ _ 549 _



_	VIK	ONMENTA	AL		-		
PID	Depth (ft)	Graphic Log	Material Description	nscs	Well D	agram	Elevation (ft)
1.2	- 40 - - - - 41 -						548 - - - - - - - 547
	42						- - - 546
0.4	43						- - 545
1.5	44						_ _ _ _ 544
1.2	- 45						- - - - 543
	46						- 542
0.9	47					bentonite	541
	48					backfill	540
	- - 49						- - - - - 539
5.7	- 50						- 538
	51						E
	52						537
	53		LIMESTONE, bedrock				536
	54						535
	55 55		Total depth: 55 ft. bgs				534
	- - - 56		Total depth. 35 ft. 193				533
	- - - 57						532
	- - - 58						531
	- - - 59						530
	60						529 -
	61						528
	- - - 62						527
	- - - 63						526
							_ _ 525 _



PROJECT NUMBER 10860
PROJECT NAME RTRR - Riverview
CLIENT Riverview-Trenton Rail Road Company
ADDRESS 18521 W. Jefferson

City, State Riverview, MI

DRILLING DATE 10/16/2019
TOTAL DEPTH 30 ft. bgs
DIAMETER 6 inches
CASING 2- in. dia. PVC

SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448776.156, 247457.881
COORD SYS 2113 - Michigan South
COMPLETION Stick-up Steel Casing
GROUND SURFACE ELEV. 588.7
WELL TOC MW-105: 592.15

COMMENTS Driller: Cascade Drilling using rotosonic. Located down gradient of WMU-29. Screened in the upper water-bearing zone.

LOGGED BY GSO

	ı		,		T	
PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram	Elevation (ft)
	3 2					592
	1 0 	0.000	SAND & GRAVEL, brown, silty sand and gravel, moist	GM	concrete -cement grout	_ 590 _ _ _ 589 _ _ _ 588
0.8	- 2 - 2 - 3		- cobbles present		bentonite	587 - 586
0.7	- 4 - 5					585 - - 584 - - - - - - - - - - - - - - - - - - -
	- 6 - 7 - 7 - 8		CLAY, brown, dense, sandy clay, little gravel, medium plasticity, moist	CL	filter pack	582 - - - - - - - - - - - - - - - - - - -
2.0	9		SAND & GRAVEL, grey, loose, clayey sand and gravel, fine to coarse sand and sub-rounded to sub-angular gravel, some cobbles, wet (drilling water)	GC		580 - 579
0.4	- 11 - 12		CLAY, black, medium dense, sandy clay, some rounded gravel, moist	CL		- - 578 - - - - 577
	- 13 - 13 14		CLAY, grey with orange mottling, hard clay, little rounded gravel, dry	_	sand backfill	576 - - - - - - - 575
	15 15 				bentonite backfill	574 - 573



		ONMENTA	1 L	1	I	
PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram	Elevation (ft)
	17					- 572 - 571
	19					570
	20					569
	21					- 568 - - 567
	22				bentonite backfill	- - - 566
	24					565
	25 					- 564 - - - 563
	26 - - - 27					_ _ _ 562
	28					_ _ 561 _
	_ _ 29					- 560 - - - 559
	30	///////////////////////////////////////	Total double, 20 ft have		(/////////	000
	31		Total depth: 30 ft. bgs			- - 558 -
	32					- 557 - - - 556
	33					_ 555
	34					_ _ _ 554
	36					553
	37					552
	38					_ 551 _ _ _ 550
	39					530 549



PROJECT NUMBER 10860
PROJECT NAME RTRR - Riverview
CLIENT Riverview-Trenton Rail Road Company
ADDRESS 18521 W. Jefferson
City, State Riverview, MI

DRILLING DATE 10/17/2019
TOTAL DEPTH 30 ft. bgs
DIAMETER 6 inches
CASING 2- in. dia. PVC
SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448256.357, 246609.325 COORD SYS 2113 - Michigan South COMPLETION Stick-up Steel Casing GROUND SURFACE ELEV. 590.7 WELL TOC MW-106: 593.87

COMMENTS Driller: Cascade Drilling using rotosonic. Upgradient well located in the former stream **LOGGED BY** GSO bed. Screens the upper water-bearing zone.

					1	
PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram	Elevation (ft)
2.0 9.6 42.6 2.3		1000 10 01 10 10 10 10 10 10 10 10 10 10	SAND, dark brown, silty sand, fine to coarse, some sub-rounded gravel and cobbles SAND & GRAVEL, grey, sand and gravel, sub-angular gravel SAND, dark brown sand, some sub-rounded gravel and cobbles SAND, light grey, sand, very fine, with gravel SAND, dark brown, silty sand, some sub-rounded to sub-angular gravel and cobbles, wet	GM GW GW	Well Diagram Borehole	(t) uoite (see) 1
	13		no returns		collapse	578



$\overline{}$		KONMEN		ı	T	
PID (ppm)	Depth (ft)	Graphic Log	Material Description	SOSO	Well Diagram	Elevation (ft)
1.5	- 17 - 18 - 19 - 20		SLAG, with sub-angular gravel, fill	GP	Borehole collapse	- 574 - 573 - 572 - 571 - 570
3.0	- 22 - 23 - 24 - 25		SAND, dark grey, clayey sand, some gravel CLAY, sandy clay, some gravel, high plasticity	GC CL	iller pack	569 - 568 - 567 - 566
	- 26 - 27 - 28		- reduced gravel content - little sand, wood, brick fragments, slag, fill		sand backfill	- 565 - 564 - 563
6.7	29 - 30 - 31		Total depth: 30 ft. bgs			- 562 - 561 - 561 - 560
	32					559 - - 558 - - - 557
	35					556 - - - - - - - - - - - - - - - - - -
	- 38 - 38 39 					- - - - - - - - - - - - - - - - - - -



City, State Riverview, MI

GROUNDWATER MONITORING WELL MW-107S & MW-107D

PROJECT NUMBER 10860
PROJECT NAME RTRR - Riverview
CLIENT Riverview-Trenton Rail Road Company
ADDRESS 18521 W. Jefferson

DRILLING DATE 10/17/2019
TOTAL DEPTH 30 ft. bgs
DIAMETER 6 inches
CASING 2- in. dia. PVC
SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448892.413, 246834.696
COORD SYS 2113 - Michigan South
COMPLETION Stick-up Steel Casing
GROUND SURFACE ELEV. 586.5
WELL TOC MW-107s: 590.47, MW-107D: 590.19

COMMENTS Driller: Cascade Drilling using rotosonic. Downgradient well . Screens the upper water-bearing zone and second water-bearing zone.

LOGGED BY AJR

water										
PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	1078		ell Diagram	Elevation (ft)		
	- - -					1 [7	590		
	-3							- - - - 589		
	- 2							- 589 - -		
								- - 588 -		
	1 - - -							- - 587		
	0	0000	SAND & GRAVEL, dark brown, fine to coarse sand and gravel, sub-rounded	GW			concrete	-		
	_ _ 1	900000	gravel, cobbles, slag, dry - becomes light grey				grout	586 		
	-	000	- becomes brown					- - 585 -		
2.2	- 2 - -	2000						- - - 584		
4.4	_ _ 3 _	000						-		
	_ _ 4						bentonite	583 		
	<u> </u>							- - 582 -		
12.4	- 5 - - -		CLAY & GRAVEL, brown, sandy, clay and gravel, sub-angular gravel GRAVEL, yellow, gravel, some sand, brick fragments	CL GP				_ _ 581		
	6		GIVAVEE, yellow, graver, some same, blick magments	Gr				-		
7.0	- - 7	0,000	SAND, dark grey, fine to coarse sand, some gravel	_				- 580 - - -		
7.6	-		SAND, dark grey, line to coarse sand, some graver					- - 579 -		
4.8	8 	5 0000 d	GRAVEL, yellow, gravel, some sand, brick fragments					- - - 578		
28.8	- - 9 -	0,000	SAND, grey fine to coarse sand, with gravel and cobbles, wood fragments,	-				- - -		
	10		slag - brick fragments					577 		
	-	15 00 00 0	- blok flagfileties					- - 576		
6.1	11 						filter pack	_ _ 575		
	12	0.000						- - - -		
E 0	_ _ 13		SAND, clayey sand, with gravel, brick fragments, moist					574 		
5.9	-		or are, slayey same, when graver, blick flagificates, moist					- - 573 -		
7.2	- 14 - - -		CLAY, dark brown, sandy clay, some gravel, low plasticity, moist	CL				- - 572		
	_ _ 15		SAND and GRAVEL, fine to coarse sand, some gravel, wood, cloth material,	GW				- - - -		
	16		brick fragments, wet					571 - ore 1 of 3		



GROUNDWATER MONITORING WELL MW-107S & MW-107D

_	IVVII	KONMEN	IAL	ı			
PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	Mell C	Diagram	Elevation (ft)
0.1	- - -						- - 570
	_ _ 17	300000					
	_						569
	<u> </u>		CLAY, clay, some sand and gravel	CL			
	- - - 19					filter pack	- 568 -
2.5	_ 13						_ _ 567
	20		CLAY, grey clay, some gravel, high plasticity, dry			:	
	E		CLAT, grey day, some graver, high plasticity, dry				566
0.8	<u> </u>						
	- - 22						- 565 -
							_ _ 564
0.5	_ 23		- brown mottling				
0.5	_		- brown motaling				563
	- 24 -						-
	_ _ 25						- 562 -
0.4							_ _ 561
	_ 26						_
							560
1.0	<u> </u>						-
	- - - 28						- 559 -
			- becomes stiff				_ _ 558
	_ 29						-
	<u>-</u> -						_ _ 557
0.9	- 30		- grey			bentonite	_ _ 556
	_ _ 31						_ 550
1.6	<u> </u>						_ _ 555
1.0	32						
	-						- 554 -
	- 33 -		- sand present				- - - 553
0.5	_ _ 34						
0.5	E						552
	_ 35 _						Ē
	_ _ _ 36						- 551 -
1.2	F 30						_ _ 550
	_ _ 37						-
	_						_ _ 549
0.4	- 38						F40
	- 39						_ 548 _
	<u> </u>						_ _ 547
0.4	<u> </u>	<u> </u>		<u> </u>	<u> </u>	7	



GROUNDWATER MONITORING WELL MW-107S & MW-107D

	1 V III	RONMEN	IAL			
PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram SZ 02 01	Elevation (ft)
0.1	- 40 - - - - 41 - - - - - - - -				bentonite	546
0.1	- - - - - - - - - - - - - - - - - - -		CAND along and fine to correspond come gravel and cabbles	SC		- 544 - 543
0.1	45		SAND, clayey sand, fine to coarse sand, some gravel and cobbles	SC	-filter pack	- 542 - 541 - 541
0.1	- - - - - - - - - - - - - - - - - - -		CLAY, grey, very stiff, clay, some sand, high plasticity	СН		- 540 - - - 539
0.1	- - - - - - - - - - - - - - - - - - -		Total depth: 50 ft. bgs		sand backfill	- 538 - 537 - 537
	- - 51 - - - - 52					- 536 - - - 535
	- 53 - 54					- 534 - 533
	- - 55 - - - - - 56					- 532 - 531 - 530
	- 57 - 57 58					- 529 - 529 - 528
	- 59 - 60					- 527 527 526
	- - 61 - - - - 62					- 525 525 524
	- 63 					524 - 523



City, State Riverview, MI

GROUNDWATER MONITORING WELL MW-108

PROJECT NUMBER 10860
PROJECT NAME RTRR - Riverview
CLIENT Riverview-Trenton Rail Road Company
ADDRESS 18521 W. Jefferson

DRILLING DATE 10/17/2019
TOTAL DEPTH 30 ft. bgs
DIAMETER 6 inches
CASING 2- in. dia. PVC
SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448926.796, 245839.708
COORD SYS 2113 - Michigan South
COMPLETION Stick-up Steel Casing
GROUND SURFACE ELEV. 592.1
WELL TOC MW-108: 595.18

COMMENTS Driller: Cascade Drilling using rotosonic. Downgradient well. Screens the upper water-bearing zone.

LOGGED BY AJR

SAND, fine to coarse sand, with sub-rounded to sub-angular gravel and cobbies, slag, brick fragments, metal shards 2			1		1	1		
SAND, fine to coarse sand, with sub-rounded to sub-angular gravel and cobbles, slag, brick fragments, metal shards Concrete coment grout SAND, fine to coarse sand, with sub-rounded to sub-angular gravel and cobbles, slag, brick fragments, metal shards SW SAND, slity sand, fine to coarse, some slag gravel and cobbles SM SAND, light grey, wood fragments Is SAND, light grey, sand, with gravel, wood and slag SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist GRAVEL, cobble-size slag fill, some fine to coarse sand GW SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill	PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	١	Well Diagram	Elevation (ft)
SAND, fine to coarse sand, with sub-rounded to sub-angular gravel and cobbles, sig., brick fragments, metal shards SAND, fine to coarse sand, with sub-rounded to sub-angular gravel and cobbles, sig., brick fragments, metal shards - light grey, wood fragments - light grey, wood fragments SAND, light grey, sand, fine to coarse, some slag gravel and cobbles SM SAND, light grey, sand, with gravel, wood and slag SAND, light grey, sand, with gravel, wood and slag SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist GRAVEL, cobble-size slag fill, some fine to coarse sand GW -bentonite SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill		_						- 596 -
SAND, fine to coarse sand, with sub-rounded to sub-angular gravel and cobbles, slag, brick fragments, metal shards SAND, slight grey, wood fragments - light grey, wood fragments - light grey, wood fragments SAND, slight grey, sand, with gravel, wood and slag SAND, slight grey, sand, with gravel, wood and slag SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist SAND, and shape and slag SAND, dark brown, slight, sand, and gravel, cobbles, fine to coarse SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill		3					7	- - - 595
SAND, fine to coarse sand, with sub-rounded to sub-angular gravel and cobbles, slag, brick fragments, metal shards SAND, slight grey, wood fragments SAND, slight grey, wood fragments SAND, slight grey, sand, with gravel, wood and slag SAND, slight grey, sand, with gravel, wood and slag SAND, slight grey, sand, with gravel, wood and slag SAND, slight grey, sand, with gravel, wood and slag SAND, dark brown, clayey sand, line to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist SAND, dark brown, clayey sand, line to coarse sand SC/GC SAND, dark brown, silty sand and gravel, cobbles, fine to coarse GM SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill		- - 2						- - - 594
SAND, fine to coarse sand, with sub-rounded to sub-angular gravel and cobbles, slag, brick fragments, metal shards SAND, slipt grey, wood fragments		_ _ 1						- - -
SAND, fine to coarse sand, with sub-rounded to sub-angular gravel and cobbles, slag, brick fragments, metal shards - light grey, wood fragments - light grey, wood fragments - light grey, wood fragments - light grey, wood fragments - light grey, wood fragments - light grey, wood fragments - light grey, wood fragments - SAND, slity sand, fine to coarse, some slag gravel and cobbles - SAND, light grey, sand, with gravel, wood and slag - SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist - SAND, dark brown, clayey sand, fine to coarse sand - SAND, dark brown, slity sand and gravel, cobbles, fine to coarse sand - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill		- '						593 - - -
33.1 - light grey, wood fragments - light grey, wood fragments SAND, silty sand, fine to coarse, some slag gravel and cobbles SM SAND, light grey, sand, with gravel, wood and slag SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist SAND, dark brown, clayey sand, fine to coarse sand GRAVEL, cobble-size slag fill, some fine to coarse sand GW -bentonite SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC		- 0 - -			sw		cement	_ _ 592 _
33.1 - light grey, wood fragments - light grey, wood fragments - SAND, silty sand, fine to coarse, some slag gravel and cobbles SM - SAND, light grey, sand, with gravel, wood and slag SAND, light grey, sand, with gravel, wood and slag SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist SAND & GRAVEL, cobble-size slag fill, some fine to coarse sand GW - SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - SAND, dark brown, silty sand and gravel, cobbles, fine to coarse - SAND, dark brown, silty sand and gravel, cobbles, fine to coarse - SAND, dark brown, silty sand and gravel, cobbles, fine to coarse - SAND, dark brown, silty sand and gravel, cobbles, fine to coarse - SAND, dark brown, silty sand and gravel, cobbles, fine to coarse - SAND, dark brown, silty sand and gravel, cobbles, fine to coarse - SAND, dark brown, silty sand and gravel, cobbles, fine to coarse - SAND, dark brown, silty sand and gravel, cobbles, fine to coarse - SAND, dark brown, silty sand and gravel, cobbles, fine to coarse - SAND, dark brown, clayey sand, little gravel, sand, sa	7.9	_ _ 1					grout	_ 591
3.1 - light grey, wood fragments SAND, silty sand, fine to coarse, some slag gravel and cobbles SAND, light grey, sand, with gravel, wood and slag SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist SAND & GRAVEL, cobble-size slag fill, some fine to coarse sand GW SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND & GRAVEL, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND & GRAVEL, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND & GRAVEL, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND & GRAVEL, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND & GRAVEL, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, silty sand and gravel, cobbles, silty sand and gravel, cobbles, silty sand and gravel, cobbles, silty sand and gravel, cobbles, silty sand and gravel, cobbles, silty sand and gravel, cobbles, silt		2						_ 590
SAND, silly sand, fine to coarse, some slag gravel and cobbles SM SAND, light grey, sand, with gravel, wood and slag SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist SAND & GRAVEL, cobble-size slag fill, some fine to coarse sand GRAVEL, cobble-size slag fill, some fine to coarse sand SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand, slag SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand, slag SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill GW SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC	33.1	3						- - 589 -
SAND, light grey, sand, with gravel, wood and slag SAND, light grey, sand, with gravel, wood and slag SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist SAND & GRAVEL, cobble-size slag fill, some fine to coarse sand GW SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill GW SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC		4		'_	- CM			_ _ 588
SAND, light grey, sand, with gravel, wood and slag SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist GRAVEL, cobble-size slag fill, some fine to coarse sand GW SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand, slag SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC	5.5	- - - 5 -		SAND, Sitty Salid, fille to coarse, Soffie Stag graver and couples	SIVI			- - - - 587
sub-angular gravel and cobbles, slag, moist 4.1 8 GRAVEL, cobble-size slag fill, some fine to coarse sand GW bentonite SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand, slag SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill GW 18.4 10 10 10 10 10 10 10 10 10 1	3.0	6		SAND, light grey, sand, with gravel, wood and slag	SW			_ _ 586
GRAVEL, cobble-size slag fill, some fine to coarse sand SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand, slag SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill GW SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill - becomes tan SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC		- - 7 -		SAND, dark brown, clayey sand, fine to coarse, with sub-rounded to sub-angular gravel and cobbles, slag, moist	SC/GC			- - - - 585
SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand, slag SAND & GRAVEL, dark brown, silty sand and gravel, cobbles, fine to coarse sand, slag SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC	4.1	- - 8 -		GRAVEL, cobble-size slag fill, some fine to coarse sand	GW		bentonite	_ _ 584 _
18.4 SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill 1.0 SAND, dark brown fine to coarse sand, gravel and cobble-size slag fill 1.0 SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC		- - 9 -	0. 18.0 50.00		GM			_ _ 583
1.0 - 12 - becomes tan 1.0 - 13 - SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC	18.4	10	0 0 0 0		GW			_ _ 582
1.0 12 00000 1.4 13 SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC		- - - 11		- becomes tan	1110			_ _ _ 581
1.4 SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC	1.0	12						- - - - 580
SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards SC/GC		- - - 13	20000					- - - -
	1.4	_ _ _		SAND, clayey sand, little gravel, slag, glass, brick fragments, metal shards	SC/GC			579 - - - -
2.1 SAND, tan, fine to coarse sand, with cobbles, slag, brick fragments		<u>-</u> 14						- - - - -
1 + 10000 - 1	2.1	- 15 - - - -		SAND, tan, fine to coarse sand, with cobbles, slag, brick fragments	GW			- 577 - -



_	14411	KONMEN	IAL			
PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram	Elevation (ft)
2.2	- 17 - 17		SAND, brown, clayey sand, some gravel and slag, dry	SC	bentonite	576 575
0.8	- - - - - - - - 19		CLAY & GRAVEL, tan, clay and gravel, some sand and cobbles, moist	GC		- - 574 - - - - 573
0.1	20		SAND, clayey sand, fine to coarse, with cobbles and slag, wet	sc		- - - - 572
0.1	21					_ _ 571 _
	- 22 - - - - - 23					- - - - - - - - - - 569
0.2	_ _ _ 24					- - - - - 568
0.2	- - 25 -					- 567
	- 26 - - - - 27		CLAY, sandy clay, with cobbles, wet	CL	filter pack	- - 566 - - - - - 565
6.8	- - - 28		CLAT, Salidy day, with comples, wet	CL		_ _ _ 564
	_ 29 					_ _ 563 _ -
1.3	- 30 - - - - - 31	<i>\</i>	No returns			- 562 - - - - - 561
	32					_ _ _ 560
	33					_ _ 559 _
	- 34 - - - - - - 35		/Bedrock, no returns, driller's opinion Total depth: 30 ft. bgs			558 557
	- - - 36					_ - - - 556 -
	- - - - - - - - - - - - - - - - - - -					555 555
	- 30 - - - - - 39					554 553
	_					_ _



GROUNDWATER MONITORING WELL MW-109S & MW-109D

PROJECT NUMBER 10860
PROJECT NAME RTRR - Riverview
CLIENT Riverview-Trenton Rail Road Company
ADDRESS 18521 W. Jefferson

City, State Riverview, MI

DRILLING DATE 10/21/2019
TOTAL DEPTH 38 ft. bgs
DIAMETER 6 inches
CASING 2- in. dia. PVC

SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448543.489, 245393.964
COORD SYS 2113 - Michigan South
COMPLETION Stick-up Steel Casing
GROUND SURFACE ELEV. 596.0

WELL TOC MW-109s: 599.91, MW-109D: 599.93

COMMENTS Driller: Cascade Drilling using rotosonic. Upgradient well. Screens the upper water-bearing zone and the second water-bearing zone.

LOGGED BY GSO

PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	109.8		/ell Diagram G	Elevation (ft)
	_					7 [E
	-3							_ 599
	2							<u>-</u> - 598
	-1							_ _ 597
								500
	- 0 -	0000	SAND & GRAVEL, brown, loose, silty sand and gravel, little cobbles slag and brick fragments, fill, dry	SW			concrete	- 596 - -
12.0	1						grout	_ 595 _
	2						bentonite	- - - 594
10.5	3						· :	_ _ 593
10.0	- - 4							- - - 592
10.1		0000	SAND, red, loose, silty sand, some gravel, slag and brick fragments, moist					E
25.5	- 5		SAND & GRAVEL, brown, loose sand and gravel, little silt, cobble-size slag, metal shard, moist					_ 591 _ _
10.1	6	00,00	SAND, red, loose silty sand, little fine gravel, slag, dry	SW				590
	- - 7						filter pack	_ _ 589
259	- 8	0000	SAND & GRAVEL, tan, loose, fine to coarse sand and gravel, little silt, brick fragments, wood, dry	GW				<u> </u>
	9		3 , , 3					_ _ 587
	- - 10		CLAY, grey, sandy clay, fine to medium sand, slight plasticity, moist	CL				- - 586
44.1		0.000	SAND & GRAVEL, dark brown, loose coarse sand and gravel, little fine to medium sand and silt, saturated	GP			sand backfill	
	<u> </u>		CLAY, brown, stiff, sandy clay, little fine to coarse rounded to sub-angular gravel, dry	CL				- 585 - - -
58.3	12		SAND, grey, loose, silty sand, little fine to medium rounded gravel, dry	SM				_ _ 584 _
	13							_ 583
	- - - 14						bentonite	- - - 582
9.7			- becomes brown, slag, wood, brick fragments present					
	- 15 -							_ 581 _ _
	16						<u> </u>	590



GROUNDWATER MONITORING WELL MW-109S & MW-109D

		ONMENTA	1 L		1		1	
PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	Mell D	iagram	Elevation (ft)	
	- 17 - 18 - 19 - 20		No returns, wood stuck in tip, possible rail road tie SAND & GRAVEL, black, loose coarse sand and gravel, saturated	GP		-bentonite	578 - 577 - 577 - 576	
7.8	21 21 22		CLAY, grey, stiff, sandy clay, little gravel, trace tine sand, wood fragments, wet SAND & GRAVEL, grey, loose, silty sand and gravel, fine to coarse sand, fine to medium gravel, sub-rounded to sub-angular gravel, dry	GM			- 575 - 574	
1.4	- 23 - 23 - 24		CLAY, grey, soft, sandy clay, little angular gravel, wet SAND, grey, loose, silty sand, fine to coarse, little gravel, dry	CL SM			573 - 572	
	- - 25 - - - 26		CLAY, grey, sandy clay, little gravel, metal shards, wet SAND, black and orange, fine sand, little fine gravel, rounded gravel, moist	CL SP			571 - 570	
	27 28 29		SAND, fine sand, rail road tie and spike			-filter pack	- 569 - 568 - 567	
	- 30 - - - 31		CLAY, grey, soft, sandy clay, fine sand, rail road spike CLAY, grey with orange mottling, very stiff, clay, moist	CL		sand backfill	- 566 - - - - 565 - -	
	32						- 564 - - - 563 -	
	- 34 - - - - 35					_bentonite backfill	- 562 - - - 561 -	
	- 36 - 37		/No returns, bedrock (driller's opinion)				- 560 - - - 559	
	38 - - - - - 39	<i>(////////////////////////////////////</i>	Total depth: 38 ft. bgs		\////////////		558 - - - - - 557 - -	



City, State Riverview, MI

GROUNDWATER MONITORING WELL MW-110S & MW-110D

PROJECT NUMBER 10860
PROJECT NAME RTRR - Riverview
CLIENT Riverview-Trenton Rail Road Company
ADDRESS 18521 W. Jefferson

DRILLING DATE 10/21 - 22/2019
TOTAL DEPTH 38 ft. bgs
DIAMETER 6 inches
CASING 2- in. dia. PVC
SCREEN 2-in. dia. PVC Factory Slotted

COORDINATES 13448929.408, 244810.710
COORD SYS 2113 - Michigan South
COMPLETION Stick-up Steel Casing
GROUND SURFACE ELEV. 587.6
WELL TOC MW-110S: 591.22, MW-110D: 591.23

COMMENTS Driller: Cascade Drilling using rotosonic. Downgradient well. Screens the upper water-bearing zone and the second water-bearing zone.

LOGGED BY GSO

PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram		Elevation (ft)
2.0 3.5 3.1 16.3 0.8	3211233455678	10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SAND, brown, loose, silty sand, fine to medium, little gravel, dry SAND, black, loose, silty sand, fine to coarse, trace fine gravel, dry GRAVEL, grey, loose, silty gravel, fine to coarse, with cobbles, little sand, gravel-size slag, dry - becomes moist SAND & GRAVEL, black, loose, silty sand and gravel, little cobbles, slag, moist	GM		concrete cement grout bentonite filter pack	-589 -589 -588 -588 -586 -588 -588 -581 -583 -581 -580 -577 -578 -577 -577 -576 -577 -576 -574 -573
	- - 15 - - - - - - 16						572 - 572 age 1 of 2



GROUNDWATER MONITORING WELL MW-110S & MW-110D

	IVVIE	RONMEN	IAL		T	
PID (ppm)	Depth (ft)	Graphic Log	Material Description	nscs	Well Diagram	Elevation (ft)
2.6	- 10 - - - - 17					- 571 - -
0.8	_ _ 18				filter pa	
	_ _ _ 19 _		CLAY, tan, stiff, clay, little sand and gravel, moist	CL	sand backfill	- 569 - - -
	20		SAND & GRAVEL, grey, loose, clayey sand and gravel, fine to coarse gravel,	GC	Dackiiii	- 568 -
	_ 21		with cobbles, saturated			- 567 - - -
1.3	- - - 22 -		- increased cobble content 22 ft. bgs to 28 ft. bgs		benton	-
	_ 23					- 565 - - -
0.8	_ _ 24 _					- 564 - - -
	_ 25 					_ 563 _ _ _
1.0	_ _ 26 _					- 562 - - - -
	_ _ 27 _				-filter pa	- 561 - - - ack - 560
1.5	_ 28 					- 559
	- - 29 - -		SAND, brown, clayey sand, fine to coarse, little fine to medium angular gravel, saturated	SC		- - - - - - 558
	30	7. XX	SAND & GRAVEL, grey, sand and gravel, coarse sand, little clay, with cobbles, saturated	GC		- - - - 557
	_ _ 31	2/2 12°0	Wood (possible log)			- -
	_ 32		CLAY, grey, stiff, clay, little sand and gravel, moist	CL	sand backfill	556
	_ _ 33		LIMESTONE, bedrock			555
	_ 34				benton backfill	
	35					<u> </u>
	_ _ _ _ 36		Total depth: 35 ft. bgs			_ 552
	- - - - 37					_ 551
	_ _ _ _ 38					_ _ 550 _
	_ _ _ _ 39					_ 549
	E					548
			<u> </u>			Page 2 of 2

			Bro 5 - 4 No. 16 - 10207/	G.c.	7 / ma (11/0 7		
asset the property of the party		S CORPORATION	Project Number: 193076 Site Id: TMW27 Total Depth: 1650' Borehole Diam			Page 1 of 1	
11911 Freedom De Reston, Virginia	ve Suite 900 20190		Total Depth: 16.50' Borehole Diameter: 8.0 Elevation: 589.75' Datum: Mean Sea Levi				
703-709-6500		-	Blank Casing:		201222. 112411	DOU LATE!	
Project Name: DSC Ltd Tre	nton, Michigan	,	type: PVC dia: 2	.00in	fm: -2.67°	to: 6.00'	
Address:			Screens:		······································		
City, State: Trenton, Michigan			type: Slotted size: 0.010in	dia	: 2.00in fm: (6.00° to: 16.00°	
Logged By: K. Heine	Date Comp	oleted: 06/01/00	Annular Fill:				
Contractor: Alliance			type: Cement		fm: 0.00°	to: 3.00'	
Certified By: D. Wells	***		type: Bentonite Chips type: Fine Sand Filter		fm: 3.00' fm: 5.00'	to: 5.00° to: 16.50°	
Drilling Method: Hollow Sten				10. 1000			
Depth (feet) Blow Count Recovery (\$) Vapor Reading PID (ppm) So man Expense of the content of	Graphic Log USCS Code/ Rock Type		Material Description			Weil Construction MP. EL. 592.42	
100 4-6	CL	sorted, ~20% gravel wit in lower 0.5 ft., damp. CLAY, medium grey, n wet.	ery dark grey, fine to coarse g h angular clasts up to 15-in. di nedium to hard, medium plastic grey and light brown, hard, le	iamete	r, wood fill ace pebbles,		

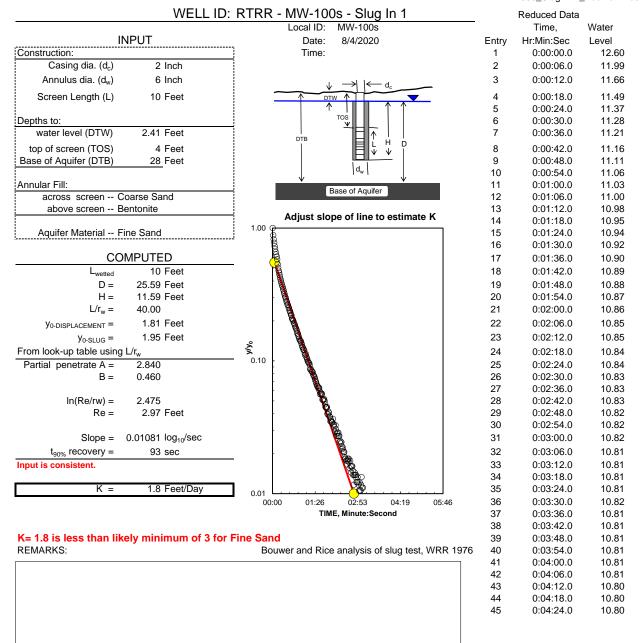
e e

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Attachment B

August 4, 2020 Slug Test Data

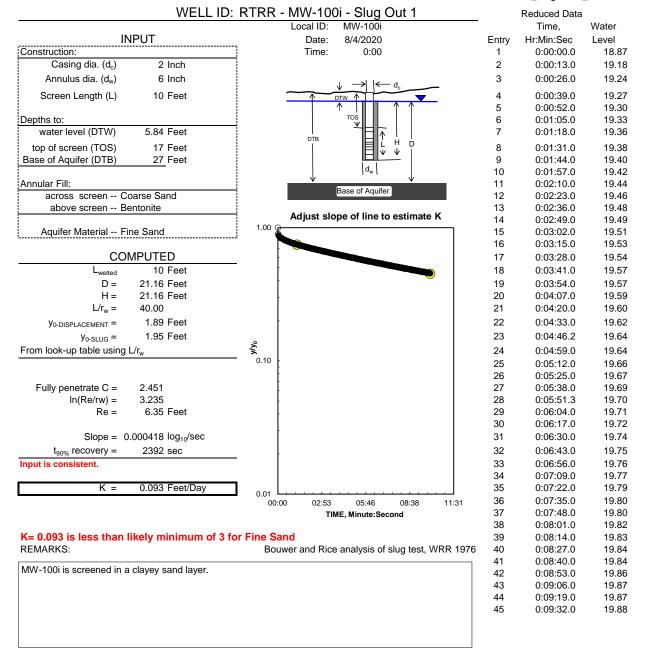


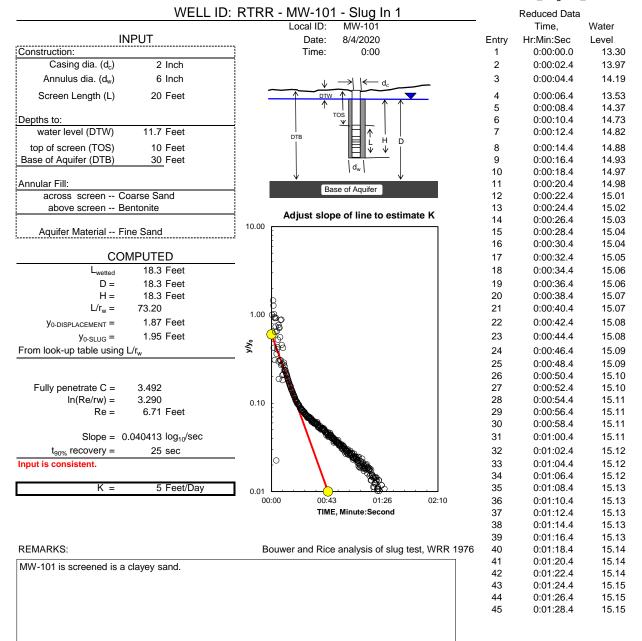


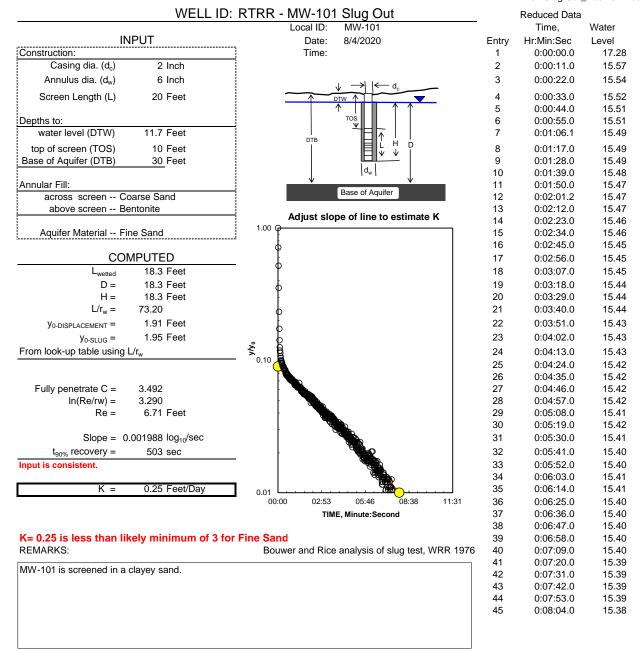
Reduced Data

Local ID: MW-100i Time, Water **INPUT** Date: 8/4/2020 Entry Hr:Min:Sec Level Construction: 0:00 22 45 Time: 0:00:00.0 1 Casing dia. (d_c) 2 Inch 2 22.41 0:00:14.0 Annulus dia. (dw) 6 Inch 3 0:00:28.0 22.32 Screen Length (L) 10 Feet 4 0:00:42.0 22.25 5 0:00:56.0 22.19 Depths to: 6 0:01:10.0 22.13 water level (DTW) 7 5.84 Feet 0:01:24.0 22.08 8 0:01:38.0 22.03 top of screen (TOS) 17 Feet Base of Aquifer (DTB) 27 Feet 9 0:01:52.0 21.98 10 0:02:06.0 21.94 Annular Fill: 11 0:02:20.0 21.89 Base of Aquifer across screen -- Coarse Sand 12 0:02:34.0 21.86 above screen -- Bentonite 13 0:02:48.0 21.82 Adjust slope of line to estimate K 0:03:02.0 21.78 14 10.00 Aquifer Material -- Fine Sand 15 0:03:16.0 21.75 16 0:03:30.0 21.71 COMPUTED 17 0:03:44.0 21.68 10 Feet 18 0:03:58.0 21.65 L_{wetted} D= 21.16 Feet 19 0:04:12.0 21.61 H= 21.16 Feet 20 0:04:26.0 21.59 $L/r_w =$ 21 40.00 0:04:40.0 21.56 1.00 1.68 Feet 22 0:04:54.0 21.52 $y_{0-DISPLACEMENT} =$ 1.95 Feet 23 0:05:08.0 21.47 $y_{0-SLUG} =$ From look-up table using L/r_w 24 0:05:22.0 21 42 25 0:05:36.0 21.39 26 0:05:50.0 21.36 Fully penetrate C = 2.451 27 0:06:04.0 21.33 ln(Re/rw) =3.235 28 0:06:18.0 21.30 0.10 Re = 6.35 Feet 29 0:06:32.0 21.27 30 0:06:46.0 21.24 Slope = $0.001174 \log_{10}/\text{sec}$ 31 0:07:00.0 21.22 t_{90%} recovery = 852 sec 32 0:07:14.0 21.20 33 0:07:28.0 Input is consistent. 21.17 34 0:07:42.0 21.15 K = 0.26 Feet/Day 35 0:07:56.0 21.14 0.01 00:00 07:12 14:24 21:36 36 0:08:10.0 21.11 37 0:08:24.0 21.10 TIME. Minute: Second 38 0:08:38.0 21.08 K= 0.26 is less than likely minimum of 3 for Fine Sand 39 0:08:52.0 21.06 Bouwer and Rice analysis of slug test, WRR 1976 REMARKS: 40 0:09:06.0 21.04 41 0:09:20.0 21.03 MW-100i is screened in a clayey sand layer. 42 0:09:34.0 21.01 43 0:09:48.0 21.00 44 #N/A #N/A 45 #N/A #N/A

WELL ID: RTRR - MW-100i - Slug In 1







WELL ID: RTRR - MW-104 Slug In 1 Reduced Data Local ID: MW-104 Time, Water **INPUT** Date: 8/4/2020 Entry Hr:Min:Sec Level Construction: 12.67 Time: 0:00:00.0 1 Casing dia. (d_c) 2 Inch 2 13.93 0:00:03.0 Annulus dia. (dw) 6 Inch 3 0:00:06.0 14.06 Screen Length (L) 10 Feet 4 0:00:09.0 14.10 5 0:00:12.0 14 12 Depths to: 6 0:00:15.0 14.13 water level (DTW) 10.96 Feet 7 0:00:18.0 14.15 8 0:00:21.0 14.15 top of screen (TOS) 9 Feet Base of Aquifer (DTB) 9 0:00:24.0 19 Feet 14.16 10 0:00:27.0 14.16 Annular Fill: 11 0:00:30.0 14.17 Base of Aquifer across screen -- Coarse Sand 12 0:00:33.0 14 17 above screen -- Bentonite 13 0:00:36.0 14.17 Adjust slope of line to estimate K 0:00:39.0 14 14.18 1.00 Aquifer Material -- Fine Sand 15 0:00:42.0 14.18 16 0:00:45.0 14.18 COMPUTED 17 0:00:48.0 14.19 8.04 Feet 18 0:00:51.0 14.19 L_{wetted} D= 8.04 Feet 19 0:00:54.0 14.19 H= 8.04 Feet 20 0:00:57.0 14.19 $L/r_w =$ 21 32.16 0:01:00.0 14.19 1.62 Feet 22 0:01:03.0 14.19 $y_{0-DISPLACEMENT} =$ 1.95 Feet 23 0:01:06.0 14.20 $y_{0-SLUG} =$ From look-up table using L/r_w 24 0:01:09.0 14.20 0.10 25 0:01:12.1 14.20 26 0:01:15.0 14.21 Fully penetrate C = 2.170 27 0:01:18.0 14.21 ln(Re/rw) =2.601 28 0:01:21.0 14.21 Re = 3.37 Feet 29 0:01:24.0 14.21 30 0:01:27.1 14.20 Slope = 0.0157 log₁₀/sec 31 0:01:30.0 14.21 t_{90%} recovery = 64 sec 32 0:01:33.0 14.21 33 0:01:36.0 Input is consistent. 14.21 34 0:01:39.0 14.21 K = 3.5 Feet/Day 35 0:01:42.1 14.21 0.01 00:00 00:43 01:26 02:10 02:53 36 0:01:45.0 14.21 37 0:01:48.0 14 22 TIME, Minute: Second 38 0:01:51.0 14.22 39 0:01:54.0 14.22 REMARKS: Bouwer and Rice analysis of slug test, WRR 1976 40 0:01:57.2 14.21 41 0:02:00.0 14.21 MW-104 is screened in clayey sand. 42 0:02:03.0 14.22 43 0:02:06.0 14.22 44 0:02:09.0 14.22 45 0:02:12.2 14.22

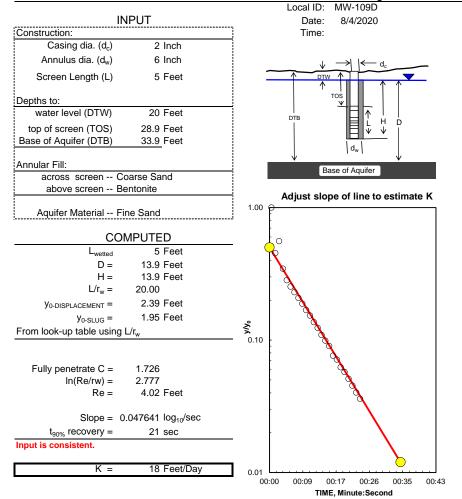
WELL ID: RTRR - MW-109D Slug In 1 Reduced Data Local ID: RTRR Time, Water **INPUT** Date: 8/4/2020 Entry Hr:Min:Sec Level Construction: 21.61 Time: 0:00:00.0 1 Casing dia. (d_c) 2 Inch 2 23.14 0:00:10.0 Annulus dia. (dw) 6 Inch 3 0:00:20.0 23.45 Screen Length (L) 5 Feet 4 0:00:30.0 23.58 5 0:00:40.0 23.64 Depths to: 6 0:00:50.0 23.67 7 0:01:00.0 water level (DTW) 20 Feet 23.71 8 0:01:10.0 23.73 top of screen (TOS) 28.9 Feet Base of Aquifer (DTB) 33.9 Feet 9 0:01:20.0 23.75 10 0:01:30.0 23.76 Annular Fill: 11 0:01:40.0 23.77 Base of Aquifer across screen -- Coarse Sand 12 0:01:50.0 23 78 above screen -- Bentonite 13 0:02:00.0 23.78 Adjust slope of line to estimate K 0:02:10.0 23.79 14 1.00 0:02:20.0 Aquifer Material -- Fine Sand 15 23.80 16 0:02:30.0 23.80 COMPUTED 17 0:02:40.0 23.80 18 0:02:50.0 23.80 L_{wetted} 5 Feet D= 13.9 Feet 19 0:03:00.0 23.80 H= 13.9 Feet 20 0:03:10.0 23.81 $L/r_w =$ 21 20.00 0:03:20.0 23.80 22 0:03:30.0 2.21 Feet 23.81 $y_{0-DISPLACEMENT} =$ 1.95 Feet 23 0:03:40.0 23.81 $y_{0-SLUG} =$ From look-up table using L/r_w 24 0:03:50.0 23.81 25 0:04:00.0 23.81 26 0:04:10.0 23.81 Fully penetrate C = 1.726 27 0:04:20.1 23.81 In(Re/rw) = 2.777 28 0:04:30.0 23.80 Re = 4.02 Feet 29 0:04:40.0 23.81 30 0:04:50.0 23.81 Slope = $0.029522 \log_{10}/\text{sec}$ 31 0:05:00.0 23.81 t_{90%} recovery = 34 sec 32 0:05:10.0 23.80 33 0:05:20.0 23 81 Input is consistent. 34 0:05:30.0 23.81 11 Feet/Dav 35 K = 0:05:40.0 23.81 0.01 00:00 02:53 05:46 08:38 36 0:05:50.0 23.81 37 0:06:00.0 23 81 TIME. Minute: Second 38 0:06:10.0 23.81 39 0:06:20.0 23.81 REMARKS: Bouwer and Rice analysis of slug test, WRR 1976 40 0:06:30.0 23.81 41 0:06:40.0 23.81 MW-109D is screened in a fine sand layer. MW-109D and MW-109s are screened in the same 42 0:06:50.0 23.81 water bearing zone. 43 0:07:00.0 23.81 44 23.81 0:07:10.0 45 0:07:20.0 23.81

Reduced Data

Local ID: MW-109D Time, Water **INPUT** Date: 8/4/2020 Entry Hr:Min:Sec Level Construction: 25.58 Time: 0:00:00.0 1 Casing dia. (d_c) 2 Inch 2 25.25 0:00:03.0 Annulus dia. (dw) 6 Inch 3 0:00:06.0 24.97 Screen Length (L) 5 Feet 4 0:00:09.0 24.75 5 0.00.12 0 24 58 Depths to: 6 0:00:15.0 24.46 water level (DTW) 7 0:00:18.0 20 Feet 24.35 8 0:00:21.0 24.28 top of screen (TOS) 28.9 Feet Base of Aquifer (DTB) 33.9 Feet 9 0:00:24.0 24.22 10 0:00:27.0 24.16 Annular Fill: 11 0:00:30.0 24.12 Base of Aquifer across screen -- Coarse Sand 12 0:00:33.0 24.09 above screen -- Bentonite 13 0:00:36.0 24.07 Adjust slope of line to estimate K 0:00:39.0 24.05 14 1.00 Aquifer Material -- Fine Sand 15 0:00:42.0 24.03 16 0:00:45.0 24.02 COMPUTED 17 0:00:48.0 24.01 18 0:00:51.0 24.01 L_{wetted} 5 Feet D= 13.9 Feet 19 0:00:54.0 23.99 H= 13.9 Feet 20 0:00:57.0 23.98 $L/r_w =$ 21 20.00 0:01:00.0 23.98 1.67 Feet 22 0:01:03.0 23.98 $y_{0-DISPLACEMENT} =$ 1.95 Feet 23 0:01:06.0 23.97 $y_{0-SLUG} =$ ý From look-up table using L/r_w 24 0:01:09.0 23.97 0.10 25 0:01:12.0 23.97 26 0:01:15.0 23.96 Fully penetrate C = 1.726 27 0:01:18.0 23.95 In(Re/rw) = 2.777 28 0:01:21.0 23.95 Re = 4.02 Feet 29 0:01:24.0 23.95 0:01:27.0 30 23.95 Slope = 0.02891 log₁₀/sec 31 0:01:30.0 23.94 t_{90%} recovery = 35 sec 32 0:01:33.0 23.94 33 0:01:36.0 23 93 Input is consistent. 34 0:01:39.1 23.94 11 Feet/Dav 35 23.93 K = 0.01.42 0 0.01 36 0:01:45.0 23.94 00:00 00:43 01:26 02:10 02:53 37 0:01:48.0 23 93 TIME, Minute: Second 38 0:01:51.0 23.94 0:01:54.0 39 23.93 REMARKS: Bouwer and Rice analysis of slug test, WRR 1976 40 0:01:57.0 23.93 41 0:02:00.0 23.93 MW-109D is screened in a fine sand layer. MW-109D and MW-109s are screened in the same 42 0:02:03.0 23.92 water bearing zone. 43 0:02:06.0 23.92 44 0:02:09.0 23.92 45 0:02:12.0 23.92

WELL ID: RTRR - MW-109D Slug Out 1

WELL ID: RTRR - MW-109D - Slug In 2



	Reduced Data	
	Time,	Water
Entry	Hr:Min:Sec	Level
1	0:00:00.0	21.41
2	0:00:01.0	22.72
3	0:00:02.0	22.47
4	0:00:03.0	22.98
5	0:00:04.0	23.13
6	0:00:05.0	23.20
7	0:00:06.0	23.25
8	0:00:07.0	23.30
9	0:80:00:0	23.35
10	0:00:09.0	23.40
11	0:00:10.0	23.44
12	0:00:11.0	23.47
13	0:00:12.0	23.51
14	0:00:13.0	23.54
15	0:00:14.0	23.56
16	0:00:15.0	23.59
17	0:00:16.0	23.62
18	0:00:17.0	23.63
19	0:00:18.0	23.65
20	0:00:19.0	23.66
21	0:00:20.0	23.68
22	0:00:21.0	23.69
23	0:00:22.0	23.70

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

MW-109D is screened in a fine sand layer. MW-109D and MW-109s are screened in the same water bearing zone.

Local ID: MW-109D **INPUT** Date: 8/4/2020 Construction: 0:00 Time: Casing dia. (d_c) 2 Inch Annulus dia. (dw) 6 Inch Screen Length (L) 5 Feet Depths to: water level (DTW) 23.94 Feet top of screen (TOS) 28.9 Feet Base of Aquifer (DTB) 33.9 Feet Annular Fill: Base of Aquifer across screen -- Coarse Sand above screen -- Bentonite Adjust slope of line to estimate K 1.00(Aquifer Material -- Fine Sand COMPUTED L_{wetted} 5 Feet D= 9.96 Feet H= 9.96 Feet A THE OWN OF THE PARTY OF THE P $L/r_w =$ 20.00 1.68 Feet $y_{0-DISPLACEMENT} =$ 1.95 Feet $y_{0-SLUG} =$ χ̈́ς From look-up table using L/r_w 0.10 Fully penetrate C = 1.726 In(Re/rw) = 2.598 Re = 3.36 Feet Slope = $0.031651 \log_{10}/\text{sec}$ t_{90%} recovery = Input is consistent. 11 Feet/Dav K = 0.01 00:00 00:17 00:35 00:52 TIME, Minute: Second

WELL ID: RTRR - MW109D Slug Out 2

Reduced Data Time, Water Entry Hr:Min:Sec Level 25.56 0:00:00.0 1 2 0:00:01.0 25.42 3 0:00:02.0 25.29 4 0:00:03.0 25.17 5 0:00:04.0 25.07 6 0:00:05.0 24.98 7 0:00:06.0 24.89 8 0:00:07.0 24.81 9 0:00:08.0 24.75 10 0:00:09.0 24.69 11 0:00:10.0 24.63 12 0:00:11.0 24.58 13 0:00:12.0 24.53 0:00:13.0 14 24.49 15 0:00:14.0 24.45 16 0:00:15.0 24.41 17 0:00:16.0 24.38 18 24.35 0:00:17.0 19 0:00:18.0 24.32 20 0:00:19.0 24.30 21 0:00:20.0 24.27 22 0:00:21.0 24.25 23 0:00:22.0 24.23 24 0:00:23.0 24.22 25 0:00:24.0 24.21 26 0:00:25.0 24.20 27 0:00:26.0 24.19 28 0:00:27.0 24.18 29 0:00:28.0 24.17 30 0:00:29.0 24.16 31 0:00:30.0 24.16 32 0:00:31.0 24.15 33 0:00:32.0 24.14 34 0:00:33.0 24.14 35 0:00:34.0 24.13 36 0:00:35.0 24.12 37 0:00:36.0 24.12 38 0:00:37.0 24.11 39 0:00:38.0 24.11

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

MW-109D is screened in a fine sand layer. MW-109D and MW-109s are screened in the same water bearing zone.

Attachment C

Laboratory Analytical Reports and Chain of Custody Forms





Thursday, December 26, 2019

Fibertec Project Number: 94159

Project Identification: 1-10860 /1-10860

Submittal Date: 12/12/2019

Ms. Allison Rogowski
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Ms. Rogowski,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Stephannie Wallace at 1:29 PM, Dec 26, 2019

Stephan. Wollan

For Daryl P. Strandbergh Laboratory Director

Enclosures



1914 Holloway Drive

11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Holt, MI 48842

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 94159 Laboratory Sample Number: 94159-001

Order: 94159 Page: 2 of 8 Date: 12/26/19

Applied Science & Technology, Chain of Custody: 184895 Client Identification: Sample Description: MW-104-121119 Inc. - Brighton 1-10860 Sample No: 12/11/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:00 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94159-001D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-104-121119 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free U mg/L 0.0050 1.0 12/17/19 PW19L17C 12/17/19 WQ19L17A VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94159-001E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-104-121119 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution A. Date Result P. Date P. Batch A. Batch 5.0 PT19L16D CJA 1. Arsenic 33 μg/L 10 12/16/19 12/17/19 T419L17A 2. Barium U 100 10 12/16/19 PT19L16D 12/17/19 T419L17A CJA μg/L 3. Chromium U μg/L 10 10 12/16/19 PT19L16D 12/17/19 T419L17A CJA 4. Copper U 4.0 10 12/16/19 PT19L16D 12/17/19 T419L17A CJA μq/L U 5. Lead 3.0 10 12/16/19 PT19L16D 12/17/19 T419L17A CJA μg/L U 10 50 12/16/19 PT19L16D 12/17/19 T419L17A CJA 6. Manganese μg/L 7. Nickel U 20 10 12/16/19 PT19L16D 12/17/19 T419L17A CJA μg/L U 8. Selenium μg/L 5.0 10 12/16/19 PT19L16D 12/17/19 T419L17A CJA 9. Silver U μg/L 0.20 10 12/16/19 PT19L16D 12/17/19 T419L17A CJA 10. Vanadium 4.6 10 PT19L16D 12/20/19 T419L20C CJA μg/L 4.0 12/16/19 U 11. Zinc μg/L 50 10 12/16/19 PT19L16D 12/17/19 T419L17A CJA Mercury by CVAAS, Total Aliquot ID: 94159-001E Matrix: Ground Water Method: EPA 7470A Description: MW-104-121119 Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94159-001 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-104-121119 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/17/19 PS19L17F 12/18/19 SA19L18A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/17/19 PS19L17F 12/18/19 SA19L18A RDK 3. Aroclor-1232 U 0.20 1.0 12/17/19 PS19L17F 12/18/19 SA19L18A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/17/19 PS19L17F 12/18/19 SA19L18A RDK μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 12/17/19 PS19L17F 12/18/19 SA19L18A RDK 6. Aroclor-1254 U 0.20 1.0 12/17/19 PS19L17F 12/18/19 SA19L18A RDK μg/L 7. Aroclor-1260 U μg/L 0.20 1.0 12/17/19 PS19L17F 12/18/19 SA19L18A RDK

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F: (231) 775-8584

T: (517) 699-0345

T: (810) 220-3300

T: (231) 775-8368



Order: 94159 3 of 8 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-104-121119 Chain of Custody:

184895

Client Project Name:

1-10860

Sample No:

Sample Matrix:

Collect Date:

12/11/19

Client Project No:

Ground Water Collect Time: 13:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Aliquot ID:

94159-001

Matrix: Ground Water

Description: MW-104-121119

						Preparation Analysis			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 8. Aroclor-1262	U		μg/L	0.20	1.0	12/17/19	PS19L17F	12/18/19	SA19L18A	RDK
‡ 9. Aroclor-1268	U		μg/L	0.20	1.0	12/17/19	PS19L17F	12/18/19	SA19L18A	RDK

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

94159-001F

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-104-121119

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
‡ 2. Acrylonitrile	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
3. Benzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
4. Bromobenzene	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
5. Bromochloromethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
6. Bromodichloromethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
7. Bromoform	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
8. Bromomethane	U		μg/L	10	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
9.2-Butanone	U		μg/L	25	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
10. n-Butylbenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ΖJ
11. sec-Butylbenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
12. tert-Butylbenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
13. Carbon Disulfide	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
14. Carbon Tetrachloride	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
15. Chlorobenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ΖJι
16. Chloroethane	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
17. Chloroform	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
18. Chloromethane	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJι
19. 2-Chlorotoluene	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ΖJ
21. Dibromochloromethane	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
22. Dibromomethane	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
23.1,2-Dichlorobenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
24. 1,3-Dichlorobenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ΖJ
25. 1,4-Dichlorobenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
26. Dichlorodifluoromethane	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
27.1,1-Dichloroethane	15		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
28.1,2-Dichloroethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJι
29.1,1-Dichloroethene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJι

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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Order: 94159 Page: 4 of 8 Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-104-121119 Chain of Custody:

184895

Client Project Name:

1-10860

Sample No:

Collect Date:

12/11/19

Client Project No:

Sample Matrix: **Ground Water** Collect Time:

13:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
--

Aliquot ID:

94159-001F

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D				Des	cription:	MW-104-121119				
						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
30. cis-1,2-Dichloroethene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
31. trans-1,2-Dichloroethene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
32.1,2-Dichloropropane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
33. cis-1,3-Dichloropropene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
34. trans-1,3-Dichloropropene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
35. Ethylbenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
36. Ethylene Dibromide	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
37.2-Hexanone	U		μg/L	50	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
38. Isopropylbenzene	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
39. 4-Methyl-2-pentanone	U		μg/L	50	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
40. Methylene Chloride	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
41.2-Methylnaphthalene	U		μg/L	15	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
42. MTBE	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
43. Naphthalene	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
44. n-Propylbenzene	U	L+	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
45. Styrene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
46. 1,1,1,2-Tetrachloroethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
47.1,1,2,2-Tetrachloroethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
48. Tetrachloroethene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
49. Toluene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
50.1,2,4-Trichlorobenzene	U		μg/L	10	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
51.1,1,1-Trichloroethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
52.1,1,2-Trichloroethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
53. Trichloroethene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
54. Trichlorofluoromethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
55. 1,2,3-Trichloropropane	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
56.1,2,3-Trimethylbenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
57. 1,2,4-Trimethylbenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
58. 1,3,5-Trimethylbenzene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
59. Vinyl Chloride	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
60. m&p-Xylene	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
61. o-Xylene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
‡ 62. Xylenes	U		μg/L	7.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJι



Order: 94159 Page: 5 of 8 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-104-121119

Ground Water

Chain of Custody:

184895

Client Project Name: 1-10860

60 Sample No:

Collect Date:
Collect Time:

12/11/19 13:00

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	94159-001	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-104-121119				
						Prepar	ation		nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
3. Aniline	U	L+	μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
4. Anthracene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
23. Chrysene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
25. Dibenzofuran	U		μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
26. 2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
28.2,4-Dimethylphenol	630		μg/L	20	20	12/16/19	PS19L16D	12/17/19	S519L17B	GJP
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
34. Fluorene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: 94159 Page: 6 of 8 Date: 12/26/19

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-104-121119

Chain of Custody:

184895

Client Project Name: 1-10

1-10860

Sample No:

Collect Date:

12/11/19

Client Project No:

1-10860

Sample Matrix: Ground Water

Collect Time:

13:00

Sample Comments:

Definitions: Q: Qualif

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS	Aliquot ID:	94159-001	Matrix: Ground Water
Method: EPA 3510C/EPA 8270E	Description	MW-104-121119	

						Prepa	ration	Analysis		
arameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
40. Isophorone	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
43.2-Methylphenol	10		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
44.3&4-Methylphenol	70		μg/L	10	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
45. Naphthalene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
46.2-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
47.3-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJ
48.4-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
49. Nitrobenzene	U		μg/L	3.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
51.4-Nitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
57. Pentachlorophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
58. Phenanthrene	U		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJ
59. Phenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
60. Pyrene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
61. Pyridine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
62.1,2,4-Trichlorobenzene	U	L-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI

pH, Electrometric Aliquot ID: 94159-001B Matrix: Ground Water

Method: EPA 9040C Description: MW-104-121119

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1.pH 11.0 -1.00 NA NA 12/18/19 14:21 WD19L18A CMB pH Units 1.0

RSN: 94159-191226132916



1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 94159 Laboratory Sample Number: 94159-001

Order: 94159 Page: 7 of 8 Date: 12/26/19

Applied Science & Technology, Sample Description: MW-104-121119 Chain of Custody: 184895 Client Identification: Inc. - Brighton 12/11/19 Client Project Name: 1-10860 Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:00 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94159-001B Matrix: Ground Water Method: EPA 9056A Description: MW-104-121119 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 300000 μg/L 10000 5.0 12/17/19 PW19L16B 12/17/19 WC19L16A SEM Residue, Filterable (TDS) Aliquot ID: 94159-001A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-104-121119 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 50000 WH19L16C 860000 12/17/19 WH19L16C AMW μg/L 1.3 12/16/19 94159-001C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-104-121119 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

50

5.0

12/17/19

PW19L17B

12/17/19

WU19L17B SEM

24000

 $\mu g/L$

RSN: 94159-191226132916



Analytical Laboratory Report Laboratory Project Number: 94159

Order: 94159 Page: 8 of 8 Date: 12/26/19

Definitions/ Qualifiers:

- A: Spike recovery or precision unusable due to dilution.
- B: The analyte was detected in the associated method blank.
- E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J: The concentration is an estimated value.
- M: Modified Method
- U: The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

H : Hold time exceeded.

L- : Recovery in the associated laboratory sample (LCS) exceeds the lower control limit. Results may be biased low.
 L+ : Recovery in the associated laboratory sample (LCS) exceeds the upper control limit. Results may be biased high.
 V- : Recovery in the associated continuing calibration verification sample (CCV) exceeds the lower control limit. Results may be biased low.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)



Thursday, December 26, 2019

Fibertec Project Number: 94161

Project Identification: 1-10860 /1-10860

Submittal Date: 12/12/2019

Ms. Allison Rogowski
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Ms. Rogowski,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

Upon receipt, the pH for sample 3's metals container exceeded criteria of ≤2 and was adjusted in the lab.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Stephannie Wallace at 1:24 PM, Dec 26, 2019

Stephan. Wallam

For Daryl P. Strandbergh Laboratory Director

Enclosures

RSN: 94161-191226131836



Order: 94161 Page: Date:

2 of 20 12/26/19

Applied Science & Technology, Chain of Custody: 184894 Client Identification: Sample Description: MW-100S-121019 Inc. - Brighton 1-10860 Sample No: 12/10/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:50 Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Cyanide, Free (without distillation) Aliquot ID: 94161-001D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-100S-121019 Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.0065 mg/L 0.0050 1.0 12/17/19 PW19L17C 12/17/19 WQ19L17C VO

Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94161-001E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-100S-121019 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch Init. 5.0 PT19L17C CJA 1. Arsenic 38 μg/L 10 12/17/19 12/19/19 T419L19B 2. Barium 120 100 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μg/L 3. Chromium U μg/L 10 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA 4. Copper U 4.0 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μq/L U 5. Lead 3.0 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μg/L U 10 50 12/17/19 PT19L17C 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μg/L U PT19L17C 8. Selenium μg/L 5.0 10 12/17/19 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA U 10. Vanadium 10 PT19L17C 12/19/19 T419L19B CJA μg/L 4.0 12/17/19 U 11. Zinc μg/L 50 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA

Mercury by CVAAS, Total Aliquot ID: 94161-001E Matrix: Ground Water Method: EPA 7470A Description: MW-100S-121019

Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18C 12/18/19 M719L18A JLH

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94161-001 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-100S-121019 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date

A. Batch Init. 1. Aroclor-1016 U G. μq/L 0.20 1.1 12/17/19 PS19L17F 12/18/19 SA19L18A RDK 2. Aroclor-1221 U Gμg/L 0.20 1.1 12/17/19 PS19L17F 12/18/19 SA19L18A RDK 3. Aroclor-1232 U G-0.20 1.1 12/17/19 PS19L17F 12/18/19 SA19L18A RDK μg/L 4. Aroclor-1242 U G-0.20 1.1 12/17/19 PS19L17F 12/18/19 SA19L18A RDK $\mu g/L$ 5. Aroclor-1248 U Gμg/L 0.20 1.1 12/17/19 PS19L17F 12/18/19 SA19L18A RDK 6. Aroclor-1254 U G-0.20 12/17/19 PS19L17F 12/18/19 SA19L18A RDK ua/L 1.1 7. Aroclor-1260 U Gμg/L 0.20 1.1 12/17/19 PS19L17F 12/18/19 SA19L18A RDK

> 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 94161 Page: 3 of 20 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100S-121019

Chain of Custody:

184894

Client Project Name: 1-1

1-10860

Sample No:

Collect Date:

12/10/19

Client Project No:

Sample Matrix: Ground Water

Collect Time:

13:50

Sample Comments:

Definitions: Q: Qualifier

Method: EPA 5030C/EPA 8260D

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A Aliquot ID:

94161-001

Matrix: Ground Water

Description: MW-100S-121019

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Ini	
‡ 8. Aroclor-1262	U	G-	μg/L	0.20	1.1	12/17/19	PS19L17F	12/18/19	SA19L18A RE	
‡ 9. Aroclor-1268	U	G-	μg/L	0.20	1.1	12/17/19	PS19L17F	12/18/19	SA19L18A RE	

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

94161-001F

Matrix: Ground Water

Description: MW-100S-121019

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	Y1	μg/L	50	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
‡ 2. Acrylonitrile	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
3. Benzene	13	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
4. Bromobenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
5. Bromochloromethane	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
6. Bromodichloromethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
7. Bromoform	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
8. Bromomethane	U	Y1	μg/L	25	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
9.2-Butanone	U	Y1	μg/L	25	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
10. n-Butylbenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
11. sec-Butylbenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
12. tert-Butylbenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
13. Carbon Disulfide	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
14. Carbon Tetrachloride	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
15. Chlorobenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
16. Chloroethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
17. Chloroform	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
18. Chloromethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
19.2-Chlorotoluene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
20.1,2-Dibromo-3-chloropropane (SIM)	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
21. Dibromochloromethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
22. Dibromomethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
23. 1,2-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
24.1,3-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
25. 1,4-Dichlorobenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
26. Dichlorodifluoromethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
27.1,1-Dichloroethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
28.1,2-Dichloroethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN
29.1,1-Dichloroethene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLN

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Order: 94161 Page: 4 of 20 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100S-121019

Ground Water

Chain of Custody:

184894

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

12/10/19

13:50

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	GC/MS			-	uot ID: cription:	94161-001F MW-100S-121019	Matrix: G	round Water		
						Prepara	tion	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	5.5	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
31. trans-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
32.1,2-Dichloropropane	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
33. cis-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
34. trans-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
35. Ethylbenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
36. Ethylene Dibromide	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
37.2-Hexanone	U	Y1	μg/L	50	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
38. Isopropylbenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
39. 4-Methyl-2-pentanone	U	Y1	μg/L	50	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
40. Methylene Chloride	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
‡ 41.2-Methylnaphthalene	5.5	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
42. MTBE	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
43. Naphthalene	42	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
44. n-Propylbenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
45. Styrene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
46.1,1,1,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
47.1,1,2,2-Tetrachloroethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
48. Tetrachloroethene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
49. Toluene	4.0	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
50.1,2,4-Trichlorobenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
51.1,1,1-Trichloroethane	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
52.1,1,2-Trichloroethane	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
53. Trichloroethene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
54. Trichlorofluoromethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
55.1,2,3-Trichloropropane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
‡ 56.1,2,3-Trimethylbenzene	3.3	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
57.1,2,4-Trimethylbenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
58.1,3,5-Trimethylbenzene	4.8	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
59. Vinyl Chloride	7.5	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
60. m&p-Xylene	9.9	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
61. o-Xylene	4.7	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
‡ 62. Xylenes	15	Y1	μg/L	7.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM

RSN: 94161-191226131836



Order: 94161 Page: 5 of 20 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100S-121019

Ground Water

Chain of Custody:

184894

Client Project Name: 1-10860

Sample No:

Collect Date:

12/10/19 13:50

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	94161-001 MW-100S-121019	Matrix: G	round Water		
						Prepara	tion	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
3. Aniline	U	L+	μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
4. Anthracene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
23. Chrysene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
25. Dibenzofuran	U		μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
28.2,4-Dimethylphenol	18		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
33. Fluoranthene	1.1		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
34. Fluorene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP



Order: 94161 Page: 6 of 20 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100S-121019

Chain of Custody:

184894

Client Project Name: 1-

1-10860

Sample No:

Sample Matrix:

Collect Date:

12/10/19

Client Project No:

Ground Water Collect Time:

13:50

Sample Comments:

Definitions: Q: Qualifier (se

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS

Aliquot ID:

94161-001

Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-100S-121019

iction. Li A 30100/Li A 02/0L				DCS	cription. W	W-1005-12101	9			
						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	Gu
40. Isophorone	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
43.2-Methylphenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
44.3&4-Methylphenol	17		μg/L	10	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
45. Naphthalene	26		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
46. 2-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
47.3-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
48.4-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
49. Nitrobenzene	U		μg/L	3.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
50. 2-Nitrophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
51.4-Nitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
57. Pentachlorophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
58. Phenanthrene	4.4		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
59. Phenol	12		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
60. Pyrene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
61. Pyridine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
62.1,2,4-Trichlorobenzene	U	L-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	G

pH, Electrometric Aliquot ID: 94161-001B Matrix: Ground Water

Method: EPA 9040C Description: MW-100S-121019

						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1.pH	12.4	Н	pH Units	-1.00	1.0	NA	NA	12/18/19 14:24	WD19L18A	CMB



Order: 94161 Page: 7 of 20 Date: 12/26/19

Applied Science & Technology, Sample Description: MW-100S-121019 Chain of Custody: 184894 Client Identification: Inc. - Brighton 12/10/19 Client Project Name: 1-10860 Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:50 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94161-001B Matrix: Ground Water Method: EPA 9056A Description: MW-100S-121019 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 54000 μg/L 10000 1.0 12/16/19 PW19L16B 12/16/19 WC19L16A SEM Residue, Filterable (TDS) Aliquot ID: 94161-001A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-100S-121019 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 50000 1300000 WH19L16C 12/17/19 WH19L16C AMW μg/L 1.3 12/16/19 94161-001C Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Matrix: Ground Water Method: SM 4500-NH3 G-2011 Description: MW-100S-121019 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N 9000 10 1.0 12/17/19 PW19L17B 12/17/19 WU19L17B SEM μg/L



Order: 94
Page: 8 0
Date: 12

94161 8 of 20 12/26/19

Applied Science & Technology, Chain of Custody: 184894 Client Identification: Sample Description: MW-100i-121019 Inc. - Brighton 1-10860 Sample No: 12/10/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:05 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94161-002D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-100i-121019 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.74 mg/L 0.050 10 12/17/19 PW19L17C 12/17/19 WQ19L17C VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94161-002E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-100i-121019 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch Init. 100 5.0 PT19L17C CJA 1. Arsenic μg/L 10 12/17/19 12/19/19 T419L19B 2. Barium U 100 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μg/L 3. Chromium U μg/L 10 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA 4. Copper U 4.0 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μq/L 5. Lead 3.3 3.0 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μg/L 10 86 50 12/17/19 PT19L17C 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μg/L PT19L17C 8. Selenium 6.4 μg/L 5.0 10 12/17/19 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA 10. Vanadium 12 10 PT19L17C 12/19/19 T419L19B CJA μg/L 4.0 12/17/19 U 11. Zinc μg/L 50 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA Mercury by CVAAS, Total Aliquot ID: 94161-002E Matrix: Ground Water Method: EPA 7470A Description: MW-100i-121019 Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18C 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94161-002 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-100i-121019 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/17/19 PS19L17F 12/18/19 SF19L18A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/17/19 PS19L17F 12/18/19 SF19L18A RDK 3. Aroclor-1232 U 0.20 1.0 12/17/19 PS19L17F 12/18/19 SF19L18A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/17/19 PS19L17F 12/18/19 SF19L18A RDK μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 12/17/19 PS19L17F 12/18/19 SF19L18A RDK 6. Aroclor-1254 U 0.20 1.0 12/17/19 PS19L17F 12/18/19 SF19L18A RDK μg/L 7. Aroclor-1260 U μg/L 0.20 1.0 12/17/19 PS19L17F 12/18/19 SF19L18A RDK

T: (517) 699-0345

T: (810) 220-3300

T: (231) 775-8368

F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

Holt, MI 48842

Brighton, MI 48116

Cadillac, MI 49601

1914 Holloway Drive

11766 E. Grand River

8660 S. Mackinaw Trail



Order: 94161 Page: 9 of 20 Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-100i-121019 Chain of Custody:

184894

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date:

12/10/19

SF19L18A RDK

SF19L18A RDK

Client Project No:

U

U

Ground Water Collect Time:

12/17/19

12/17/19

PS19L17F

PS19L17F

15:05

12/18/19

12/18/19

Sample Comments:

8. Aroclor-1262

9. Aroclor-1268

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

μg/L

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94161-002 **Matrix: Ground Water** Method: EPA 3510C/EPA 8082A Description: MW-100i-121019 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

0.20

0.20

1.0

1.0

 $\mu g/L$ Volatile Organic Compounds (VOCs) by GC/MS Matrix: Ground Water Aliquot ID: 94161-002F

Method: EPA 5030C/EPA 8260D			Des	cription:	MW-100i-121019				
					Prepa	ration	А	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acetone	U	μg/L	50	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
‡ 2. Acrylonitrile	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
3. Benzene	38	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
4. Bromobenzene	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
5. Bromochloromethane	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
6. Bromodichloromethane	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
7. Bromoform	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
8. Bromomethane	U	μg/L	10	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
9.2-Butanone	U	μg/L	25	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
10. n-Butylbenzene	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
11. sec-Butylbenzene	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
12. tert-Butylbenzene	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
13. Carbon Disulfide	34	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
14. Carbon Tetrachloride	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
15. Chlorobenzene	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
16. Chloroethane	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
17. Chloroform	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
18. Chloromethane	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
19. 2-Chlorotoluene	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
21. Dibromochloromethane	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
22. Dibromomethane	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
23.1,2-Dichlorobenzene	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
24.1,3-Dichlorobenzene	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
25.1,4-Dichlorobenzene	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
26. Dichlorodifluoromethane	U	μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
27.1,1-Dichloroethane	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
28.1,2-Dichloroethane	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ
29.1,1-Dichloroethene	U	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJ

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: 94161 10 of 20 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-100i-121019

Ground Water

Chain of Custody:

184894

1-10860 Client Project Name:

Sample No:

Collect Date:

12/10/19

Sample Comments:

Client Project No:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

1-10860

Collect Time: 15:05

Aliquot ID: 94161-002F Matrix: Ground Water

‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D Description: MW-100i-121019 Preparation Analysis

Sample Matrix:

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	21		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
31. trans-1,2-Dichloroethene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
32.1,2-Dichloropropane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
33. cis-1,3-Dichloropropene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
34. trans-1,3-Dichloropropene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
35. Ethylbenzene	3.1		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
36. Ethylene Dibromide	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
37.2-Hexanone	U		μg/L	50	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
38. Isopropylbenzene	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
39.4-Methyl-2-pentanone	U		μg/L	50	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
40. Methylene Chloride	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
‡ 41.2-Methylnaphthalene	U		μg/L	15	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
42.MTBE	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
43. Naphthalene	25		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
44. n-Propylbenzene	U	L+	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
45. Styrene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
46.1,1,1,2-Tetrachloroethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
47.1,1,2,2-Tetrachloroethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
48. Tetrachloroethene	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
49. Toluene	7.5		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
50.1,2,4-Trichlorobenzene	U		μg/L	10	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
51.1,1,1-Trichloroethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
52.1,1,2-Trichloroethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
53. Trichloroethene	5.0		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
54. Trichlorofluoromethane	U		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
55. 1,2,3-Trichloropropane	U		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
56.1,2,3-Trimethylbenzene	6.0		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
57.1,2,4-Trimethylbenzene	8.0		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
58.1,3,5-Trimethylbenzene	12	E1	μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
59. Vinyl Chloride	29		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
60. m&p-Xylene	17		μg/L	5.0	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
61. o-Xylene	7.8		μg/L	2.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ
‡ 62. Xylenes	25		μg/L	7.5	5.0	12/16/19	VM19L16A	12/16/19	VM19L16A	ZJJ



Order: 94161 Page: 11 of 20 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100i-121019

Ground Water

Chain of Custody:

184894

Client Project Name: 1-10860

60 Sample No:

Collect Date:
Collect Time:

12/10/19

15:05

Client Project No:
Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Parameter(s) Par	Base/Neutral/Acid Semivolatiles by GC/MS				•	uot ID:	94161-002	Matrix: G	round Water		
Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.	Method: EPA 3510C/EPA 8270E				Des	cription:		ation	Λ		
2. Acenaphthylene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 3. Aniline U L pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 4. Anthracene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 5. Azobenzene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 6. Benzo(a)anthracene U pg/L 1.0 1.0 1.216/19 PS19L16D 1216/19 S619L16B GJP 7. Benzo(a)pyrene U pg/L 1.0 1.0 1.216/19 PS19L16D 1216/19 S619L16B GJP 8. Benzo(b)fluoranthene U pg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 9. Benzo(b)fluoranthene U pg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 9. Benzo(b)fluoranthene U pg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 12. C-Chlororophenol Phenylether U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 12. C-Chlororophenol U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 12. C-Chlorophenol U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 12. C-Dhorophenol U pg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 1	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution					Init.
2. Acenaphthylene U L+ µg/L 3. Amiline U L+ µg/L 4.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 4. Anthracene U µg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 4. Anthracene U µg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 5. Azobenzene U µg/L 5.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 6. Benzo(a)anthracene U µg/L 1.0 1.0 1.216/19 PS19L16D 1216/19 S619L16B GJP 7. Benzo(a)gyrene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 8. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 9. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 10. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 11. Benzo(b)fluoranthene U µg/L 1.0 1.0 1216/19 PS19L16D 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP 1216/19 S619L16B GJP	1. Acenaphthene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
3. Aniline U L+ ig/L 4. Anthracene U g/L 5.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 5. Azobenzene U g/L 5.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 5. Benzo(a)anthracene U g/L 6. Benzo(a)anthracene U g/L 7. Benzo(a)pyrene U g/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 7. Benzo(a)pyrene U g/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 9. Benzo(a)pyrene U g/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 9. Benzo(a)pyrene U g/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 9. Benzo(a)pyrene U g/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 9. Benzo(a)pyrene U g/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 11. Benzo(a)foloranthene U g/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 11. Benzo(a)foloranthene U g/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 12. Bis(2-chloroethoxy)methane U g/L 1.5 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 13. Bis(2-chloroethy)ethere U g/L 13. Bis(2-chloroethy)ethere U g/L 14. Bis(2-chloroethy)ethere U g/L 15. 4-Bromophenyl Phenylether U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 15. 4-Bromophenyl Phenylether U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 15. 4-Bromophenyl Phenylether U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 15. 4-Bromophenyl Phenylether U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 15. 4-Bromophenyl Phenylether U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 15. 4-Bromophenyl Phenylether U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 16. Butyl Benzyl Phthalate U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 17. Di-haulyl Phthalate U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 18. Carbazole 19. 4-Chlororo-mentylphenol U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 21. 2-Chlororophenyl Phenylether U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 22. 4-Chlororophenyl Phenylether U g/L 15. 0 1.0 12/16/19 PS191.16D 12/16/19 S6191.18G GJP 23. Chnyemen U g/L 24. Dibenzo(uah) and thrace data an	·										
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7. Benzo(a)pyrene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 8. Benzo(p/h)poranthene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 9. Benzo(p/h)perylene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 11. Benzo/(h)fuoranthene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 11. Benzy/ Alcohol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Bis(2-chloroethoxyl)methane U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bis(2-chlyflexyl)printhalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 15. Astromophenyl Phenylether U µg/L 5.0 1.0 12/16/19 <td>6. Benzo(a)anthracene</td> <td>U</td> <td></td> <td></td> <td>1.0</td> <td>1.0</td> <td>12/16/19</td> <td>PS19L16D</td> <td>12/16/19</td> <td>S619L16B</td> <td>GJP</td>	6. Benzo(a)anthracene	U			1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
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12. Bis(2-chloroethoxy)methane	10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
13. Bis(2-chloroethyl)ether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 18. Carbazole 12 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. 3-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2-4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2-4-Dimethylphenol 24 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2-4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobutadie	11. Benzyl Alcohol	U			5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
13. Bis(2-chloroethyl)ether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 18. Carbazole 12 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. 3-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2-4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2-4-Dimethylphenol 24 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2-4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobutadie	12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 18. Carbazole 12 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. 3,6-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. 4,-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. 6,-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorone U μg/L 50 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP		U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
16. Butyl Benzyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 18. Carbazole 12 µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloronaphthalene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2.4-Dichlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2.4-Dimethylphenol 24 µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2.4-Dimitrophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2.4-Dimitrophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	14. Bis(2-ethylhexyl)phthalate	U			5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 18. Carbazole 12 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19.4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21.2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenol Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 24. Dibenzo(a,h)anthracene U μg/L 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol 24 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dimitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dimitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dimitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene 1.9 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
‡ 18. Carbazole 12 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzofuran U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19	16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
‡ 18. Carbazole 12 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloropaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U	17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
20.2-Chloronaphthalene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21.2-Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22.4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U µg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol 24 µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene 1.9 µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	‡ 18. Carbazole	12			5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
21.2-Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22.4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzofuran U µg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U µg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dimethyl Phthalate U <	19. 4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a, h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol 24 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dimitrotoluene U </td <td>20.2-Chloronaphthalene</td> <td>U</td> <td></td> <td>μg/L</td> <td>5.0</td> <td>1.0</td> <td>12/16/19</td> <td>PS19L16D</td> <td>12/16/19</td> <td>S619L16B</td> <td>GJP</td>	20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol 24 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dimitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dimitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene	21.2-Chlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U µg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol 24 µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U µg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U <td>22.4-Chlorophenyl Phenylether</td> <td>U</td> <td></td> <td>μg/L</td> <td>5.0</td> <td>1.0</td> <td>12/16/19</td> <td>PS19L16D</td> <td>12/16/19</td> <td>S619L16B</td> <td>GJP</td>	22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol 24 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	23. Chrysene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene 1.9 μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 1	24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol 24 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene 1.9 μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U	25. Dibenzofuran	U		μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
28.2,4-Dimethylphenol 24 μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene 1.9 μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D	26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene 1.9 μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene 1.9 μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene	28.2,4-Dimethylphenol	24		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene 1.9 μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene 1.9 μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
33. Fluoranthene 1.9 μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	33. Fluoranthene	1.9		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	34. Fluorene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
	35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
37. Hexachlorocyclopentadiene U V- μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
	37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: 94161 Page: 12 of 20 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100i-121019

Ground Water

Chain of Custody:

184894

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

12/10/19

15:05

Client Project No:
Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	94161-002	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-100i-121019				
B ()	D	0	11.2	B	Dil ii	Prepara			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
40. Isophorone	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
43.2-Methylphenol	18		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
‡ 44.3&4-Methylphenol	110		μg/L	10	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
45. Naphthalene	17		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
46.2-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
47.3-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
48.4-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
49. Nitrobenzene	U		μg/L	3.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
51.4-Nitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
57. Pentachlorophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
58. Phenanthrene	3.4		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
59. Phenol	77		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
60. Pyrene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
61. Pyridine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
62.1,2,4-Trichlorobenzene	U	L-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
pH, Electrometric				Aliq	uot ID:	94161-002B	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-100i-121019				
					-	Prepar			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

1.pH

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

11.7

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

NA

NA

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

12/18/19 14:25 WD19L18A CMB

-1.00



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 94161 Laboratory Sample Number: 94161-002

Order: 94161 Page: 13 of 20 Date: 12/26/19

Analysis

A. Batch

WU19L17B SEM

Init.

A. Date

12/17/19

Applied Science & Technology, Sample Description: MW-100i-121019 Chain of Custody: 184894 Client Identification: Inc. - Brighton 12/10/19 Client Project Name: 1-10860 Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:05 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94161-002B Matrix: Ground Water Method: EPA 9056A Description: MW-100i-121019 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 200000 μg/L 10000 5.0 12/17/19 PW19L16B 12/17/19 WC19L16A SEM Residue, Filterable (TDS) Aliquot ID: 94161-002A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-100i-121019 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 50000 WH19L16C 2100000 12/17/19 WH19L16C AMW μg/L 1.3 12/16/19 94161-002C Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Matrix: Ground Water Method: SM 4500-NH3 G-2011 Description: MW-100i-121019

Reporting Limit

50

Dilution

5.0

Result

33000

Q

Units

 $\mu g/L$

Preparation

P. Batch

PW19L17B

P. Date

12/17/19



11766 E. Grand River

8660 S. Mackinaw Trail

Analytical Laboratory Report Laboratory Project Number: 94161 Laboratory Sample Number: 94161-003

Order: 94161 Page: 14 of 20 Date: 12/26/19

Applied Science & Technology, Chain of Custody: 184894 Client Identification: Sample Description: MW-106-121019 Inc. - Brighton 1-10860 Sample No: 12/10/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:40 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94161-003D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-106-121019 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free U mg/L 0.0050 1.0 12/17/19 PW19L17C 12/17/19 WQ19L17C VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94161-003E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-106-121019 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch Init. U 5.0 PT19L17C CJA 1. Arsenic μg/L 10 12/17/19 12/19/19 T419L19B 2. Barium 250 100 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μg/L 3. Chromium 17 μg/L 10 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA 4. Copper 6.4 4.0 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μq/L 5. Lead 4.7 3.0 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μg/L U 10 50 12/17/19 PT19L17C 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA μg/L U PT19L17C 8. Selenium μg/L 5.0 10 12/17/19 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA U 10. Vanadium 10 PT19L17C 12/19/19 T419L19B CJA μg/L 4.0 12/17/19 U 11. Zinc μg/L 50 10 12/17/19 PT19L17C 12/19/19 T419L19B CJA Mercury by CVAAS, Total Aliquot ID: 94161-003E Matrix: Ground Water Method: EPA 7470A Description: MW-106-121019 Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18C 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94161-003 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-106-121019 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/17/19 PS19L17F 12/17/19 SA19L17A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/17/19 PS19L17F 12/17/19 SA19L17A RDK 3. Aroclor-1232 U 0.20 1.0 12/17/19 PS19L17F 12/17/19 SA19L17A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/17/19 PS19L17F 12/17/19 SA19L17A RDK μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 12/17/19 PS19L17F 12/17/19 SA19L17A RDK 6. Aroclor-1254 U 0.20 1.0 12/17/19 PS19L17F 12/17/19 SA19L17A RDK μg/L 7. Aroclor-1260 U μg/L 0.20 1.0 12/17/19 PS19L17F 12/17/19 SA19L17A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

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F: (231) 775-8584

Brighton, MI 48116

Cadillac, MI 49601



Order: 94161 15 of 20 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-106-121019 Chain of Custody:

184894

Client Project Name: 1-10860

Sample No: Sample Matrix: Collect Date:

12/10/19

Client Project No:

9. Aroclor-1268

Ground Water Collect Time: 15:40

Analysis

A. Batch Init.

SA19L17A RDK

SA19L17A RDK

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

94161-003

Description: MW-106-121019

Matrix: Ground Water

A. Date

12/17/19

12/17/19

Method: EPA 3510C/EPA 8082A

Method: EPA 5030C/EPA 8260D

Preparation Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch 8. Aroclor-1262 U μg/L 0.20 1.0 12/17/19 PS19L17F

 $\mu g/L$

U

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

1.0

0.20

94161-003F

12/17/19

Matrix: Ground Water

PS19L17F

Description: MW-106-121019

		_				Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
1. Acetone	U	Y1	μg/L	50	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JL
2. Acrylonitrile	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JL
3. Benzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	Jl
4. Bromobenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JI
5. Bromochloromethane	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JI
6. Bromodichloromethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
7. Bromoform	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JI
8. Bromomethane	U	Y1	μg/L	25	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JI
9.2-Butanone	U	Y1	μg/L	25	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
10. n-Butylbenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
11. sec-Butylbenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
12. tert-Butylbenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
13. Carbon Disulfide	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	,
14. Carbon Tetrachloride	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
15. Chlorobenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
16. Chloroethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	·
17. Chloroform	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	·
18. Chloromethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	·
19.2-Chlorotoluene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
20.1,2-Dibromo-3-chloropropane (SIM)	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	·
21. Dibromochloromethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
22. Dibromomethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
23. 1,2-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	·
24. 1,3-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	·
25. 1,4-Dichlorobenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
26. Dichlorodifluoromethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
27.1,1-Dichloroethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
28.1,2-Dichloroethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J
29.1,1-Dichloroethene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	J

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: 94161 16 of 20 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-106-121019 Chain of Custody:

184894

1-10860 Client Project Name:

Sample No:

Collect Date:

12/10/19

1-10860 Client Project No:

Ground Water

Collect Time: 15:40

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	GC/MS			•	uot ID: cription:	94161-003F MW-106-121019	Matrix: G	round Water		
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
31. trans-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
32.1,2-Dichloropropane	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
33. cis-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
34. trans-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
35. Ethylbenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
36. Ethylene Dibromide	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
37.2-Hexanone	U	Y1	μg/L	50	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
38. Isopropylbenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
39.4-Methyl-2-pentanone	U	Y1	μg/L	50	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
40. Methylene Chloride	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
‡ 41.2-Methylnaphthalene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
42. MTBE	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
43. Naphthalene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
44. n-Propylbenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
45. Styrene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
46.1,1,1,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
47.1,1,2,2-Tetrachloroethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
48. Tetrachloroethene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
49. Toluene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
50.1,2,4-Trichlorobenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
51.1,1,1-Trichloroethane	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
52.1,1,2-Trichloroethane	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
53. Trichloroethene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
54. Trichlorofluoromethane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
55. 1,2,3-Trichloropropane	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
‡ 56.1,2,3-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
57.1,2,4-Trimethylbenzene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
58.1,3,5-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
59. Vinyl Chloride	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
60. m&p-Xylene	U	Y1	μg/L	5.0	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
61. o-Xylene	U	Y1	μg/L	2.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM
‡ 62. Xylenes	U	Y1	μg/L	7.5	5.0	12/17/19	VP19L17B	12/17/19	VP19L17B	JLM



Order: 94161 Page: 17 of 20 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-106-121019

Ground Water

Sample Matrix:

Chain of Custody:

184894

Client Project Name: 1-10860

60 Sample No:

Collect Date:
Collect Time:

12/10/19

15:40

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Parameter(s) Result Q	Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	juot ID:	94161-003	Matrix: G	round Water		
Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init	Method: EPA 3510C/EPA 8270E				Des	cription:	MW-106-121019				
1. Acenaphthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 2. Acenaphthylene U L μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 3. Anilline U L μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 4. Anthracene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 5. Arcbertzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 6. Benzo(a)anthracene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 7. Benzo(a)aphtracene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 8. Benzo(b)fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 10. Benzo(k)fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 11. Benzo(k)fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12/16/19 PS19L16D 12/16/19 S619L16B GJP 13. Bisk2-chloroethyn)methane U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 13. Bisk2-chloroethynyhethane U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bisk2-chloroethynyhether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bisk2-chloroethynyhether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bisk2-chloroethynyhether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bisk2-chloroethynyhether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bisk2-chloroethynyhether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bisk2-chloroethynyhether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Chloro-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-							Prepar	ation	Ar	nalysis	
2. Acenaphthylene U µg/L 3. Aniline U L + µg/L 4.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 4. Anthracene U µg/L 5.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 4. Anthracene U µg/L 5.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 5. Azobenzene U µg/L 5.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 6. Benzo(a)anthracene U µg/L 1.0 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 7. Benzo(a)gyrene U µg/L 1.0 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 8. Benzo(b)fluoranthene U µg/L 1.0 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 9. Benzo(b)fluoranthene U µg/L 1.0 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/16/19 PS191.16D 12/16/19 S6191.16B GJP 1. Benzo(b)fluoranthene	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
3. Aniline U L+ Ig/L 4. Anthracene U JujL 5. O 1. 0 12/16/19 PS19L16D 12/16/19 PS19L	1. Acenaphthene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
4. Anthracene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 5. Azobenzene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 6. Benzo(a)anthracene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 8. Benzo(ph)prene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 9. Benzo(ph)perylene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 10. Benzo(ph)perylene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 11. Benzyl Alcohol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Bis(2-chloroethtox)methane U µg/L 5.0 1.0 12/16/19 PS19L16D 12	2. Acenaphthylene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
## 5. Azobenzene U	3. Aniline	U	L+	μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
6. Benzo(a)anthracene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 7. Benzo(a)pyrene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 8. Benzo(b)pyrene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 9. Benzo(b)pyrene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 10. Benzo(b)pyrene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 10. Benzo(b)pyrene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 11. Benzo(b)pyrene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 11. Benzo(b)pyrene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 12. Bist/2-chlorecthoxymethane U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 13. Bist/2-chlorecthoxymethane U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 14. Bist/2-chlorecthoxymethane U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 14. Bist/2-chlorecthy)pyrhphalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 14. Bist/2-chlorecthy)pyrhphalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 15. Bist/2-chlorecthy)pyrhphalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 17. Din-butyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 17. Din-butyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 18. Carboxo-3-methylphenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 19. Chlorora-3-methylphenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 20. 2-Chloronaphthalene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 21.2-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 22. 2-Chloronaphthalene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 23. Chloronaphthalene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 23. Chloronaphthalene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 23. Chloronaphthalene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 23. Chloronaphthalene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B QJP 23. Chlorotophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/	4. Anthracene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
7. Benzo(a)pyrene U µg/L 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.68 GJP 8. Benzo(phillouranthene U µg/L 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.68 GJP 9. Benzo(phillouranthene U µg/L 1.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.168 GJP 11. Benzyl Alcohol U µg/L 5.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.168 GJP 12. Bis(2-chlorechty)inethane U µg/L 5.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.168 GJP 12. Bis(2-chlorechty)iphthalate U µg/L 5.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.168 GJP 15 Bromophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS191.6D 12/16/19 S6191.68 GJP 16. Butyl Benzyl Phthalate U µg/L 5.0 1.0 12/16	‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
8. Benzo(ph)fluoranthene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 9. Benzo(gh)perylene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 10. Benzo(gh)perylene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 11. Benzy (Alcohol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Bis(2-chloroethxy)methane U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 13. Bis(2-chloroethxy)methane U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 13. Bis(2-chloroethxy)methane U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 13. Bis(2-chloroethy)teher U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bis(2-chloroethy)teher U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 16. Buly/ Benzy/ Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-bulyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-bulyl Pthhalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. 2-Chloronaphthalene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. 2-Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. 2-Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. 2-Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. 2-Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Chlorophenol U µ	6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
9. Benzo(ghi)perylene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 10. Benzo(k)(Ilucranthene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 11. Benzyl Alcohol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 13. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bis(2-chloroethy)pether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bis(2-chloroethy)pether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20.2-Chlororophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chnysene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Dibenzo(a,h)anthracene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzo(a,h)anthracene U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2-A-Dichlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2-A-Dichlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2-A-Dichlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2-A-Dichlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2-A-Dichlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2-A-Dimitrophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2-A-Dimitropheno	7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
10. Benzo(k/ifuoranthene	8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
11. Benzyl Alcohol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 12. Bis(2-chloroethxy)methane U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 13. Bis(2-chloroethyy)hether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 14. Bis(2-chlyfhexy)lphthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 15.4 Bromophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 15.4 Bromophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 18. Carbazole U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 18. Carbazole U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20.2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzoturan U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzoturan U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30.2.4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30.2.4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Chloribrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Chloribrophenol U	9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
12. Bis(2-chloroethoxy)methane	10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
13. Bis(2-chloroethyl)ether	11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 18. Carbazole U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chlorop-a-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chysene U μg/L 5.0 1.0 12/16/19 P	12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Din-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 18. Carbazole U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2-4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2-4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2-4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2-4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobenzene U μg/L 5.	13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP ‡ 18. Carbazole U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dimitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluorenthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobotuadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 18. Carbazole U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
‡ 18. Carbazole U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U	16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
19.4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 20.2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21.2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 25. Dibenzofuran U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
20.2-Chloronaphthalene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 21.2-Chlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzofuran U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L	‡ 18. Carbazole	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
21.2-Chlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 22.4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U µg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U µg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethyl Phthalate U µg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dimitrophenol U	19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U	20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
23. Chrysene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 <td>21.2-Chlorophenol</td> <td>U</td> <td></td> <td>μg/L</td> <td>5.0</td> <td>1.0</td> <td>12/16/19</td> <td>PS19L16D</td> <td>12/16/19</td> <td>S619L16B</td> <td>GJP</td>	21.2-Chlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U <td>22.4-Chlorophenyl Phenylether</td> <td>U</td> <td></td> <td>μg/L</td> <td>5.0</td> <td>1.0</td> <td>12/16/19</td> <td>PS19L16D</td> <td>12/16/19</td> <td>S619L16B</td> <td>GJP</td>	22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
25. Dibenzofuran U μg/L 4.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U <t< td=""><td>23. Chrysene</td><td>U</td><td></td><td>μg/L</td><td>1.0</td><td>1.0</td><td>12/16/19</td><td>PS19L16D</td><td>12/16/19</td><td>S619L16B</td><td>GJP</td></t<>	23. Chrysene	U		μg/L	1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
26.2,4-Dichlorophenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28.2,4-Dimethyl phenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U	24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
27. Diethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/	25. Dibenzofuran	U		μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
28.2,4-Dimethylphenol U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 29.Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30.2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31.2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32.2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33.Fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34.Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35.Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36.Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
29. Dimethyl Phthalate U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
30.2,4-Dinitrophenol U μg/L 20 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 31.2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32.2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
33. Fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
33. Fluoranthene U μg/L 1.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 34. Fluorene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
35. Hexachlorobenzene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	33. Fluoranthene	U			1.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
36. Hexachlorobutadiene U μg/L 5.0 1.0 12/16/19 PS19L16D 12/16/19 S619L16B GJP	34. Fluorene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
	35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
	36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP
	37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJP



Order: 94161 Page: 18 of 20 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-106-121019

Ground Water

Chain of Custody:

184894

15:40

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

12/10/19

Client Project No:
Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	94161-003	Matrix:	Ground Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-106-121019				
						Prepar	ation	An	alysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
40. Isophorone	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJI
43.2-Methylphenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
45. Naphthalene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
46.2-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
47.3-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
48.4-Nitroaniline	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
49. Nitrobenzene	U		μg/L	3.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
51.4-Nitrophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
57. Pentachlorophenol	U		μg/L	20	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
58. Phenanthrene	U		μg/L	2.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
59. Phenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
60. Pyrene	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
61. Pyridine	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
62.1,2,4-Trichlorobenzene	U	L-	μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/16/19	PS19L16D	12/16/19	S619L16B	GJF
pH, Electrometric				Aliq	uot ID:	94161-003B	Matrix:	Ground Water		
Method: EPA 9040C				Des	cription:	MW-106-121019				
						Prepar			alysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. pH	12.5	Е	pH Units	-1.00	1.0	NA	NA	12/18/19 14:32	WD19L18A	CM

lab@fibertec.us



Order: 94161 Page: 19 of 20 Date: 12/26/19

Applied Science & Technology, Sample Description: MW-106-121019 Chain of Custody: 184894 Client Identification: Inc. - Brighton 12/10/19 Client Project Name: 1-10860 Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:40 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94161-003B Matrix: Ground Water Method: EPA 9056A Description: MW-106-121019 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 43000 μg/L 10000 1.0 12/16/19 PW19L16B 12/16/19 WC19L16A SEM Residue, Filterable (TDS) Aliquot ID: 94161-003A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-106-121019 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 50000 WH19L16C 1500000 12/17/19 WH19L16C AMW μg/L 1.3 12/16/19 94161-003C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-106-121019 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N 2000 10 1.0 12/17/19 PW19L17B 12/17/19 WU19L17B SEM μg/L

RSN: 94161-191226131836



Analytical Laboratory Report Laboratory Project Number: 94161

Order: 94161 Page: 20 of 20 Date: 12/26/19

Definitions/ Qualifiers:

- A: Spike recovery or precision unusable due to dilution.
- B: The analyte was detected in the associated method blank.
- E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J: The concentration is an estimated value.
- M: Modified Method
- U: The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

This flag identifies compounds whose response exceed the response of the highest standard in the initial calibration range of the instrument for that specific analysis.

E1 : The reported value is estimated due to the presence of interference.

G- : Recovery of the associated Surrogate Compound exceeds the lower control limit. Results may be biased low.

H : Hold time exceeded.

L- : Recovery in the associated laboratory sample (LCS) exceeds the lower control limit. Results may be biased low.
 L+ : Recovery in the associated laboratory sample (LCS) exceeds the upper control limit. Results may be biased high.
 V- : Recovery in the associated continuing calibration verification sample (CCV) exceeds the lower control limit. Results may be biased low.

Y1 : Sample was diluted due to a sample matrix issue.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

RSN: 94161-191226131836



Thursday, December 26, 2019

Fibertec Project Number: 94192

Project Identification: 1-10860 /1-10860

Submittal Date: 12/13/2019

Ms. Allison Rogowski
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Ms. Rogowski,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

Upon receipt, the pH for samples -002, -006, and -008 metals container exceeded criteria of ≤2 and was adjusted in the lab.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Stephannie Wallace at 1:46 PM, Dec 26, 2019

Stephan. Wallam

For Daryl P. Strandbergh Laboratory Director

Enclosures

DCSID: G-610.19 (10/01/19)

RSN: 94192-191226133437



Order: 94192 Page: Date:

2 of 74 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-102D-121219 Chain of Custody:

181434

Client Project Name:

Sample No:

Collect Date:

12/12/19

Client Project No:

1-10860 1-10860

Sample Matrix:

Collect Time:

10:00

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Cyanide, Free (without distillation) Aliquot ID: 94192-001D Matrix: Ground Water

Method: ASTM D7237-10

Ground Water

Description: MW-102D-121219

					Prepa	aration		Analysis
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 1. Cyanide, Free	U	mg/L	0.0050	1.0	12/17/19	PW19L17C	12/17/19	WQ19L17C VO

Trace Elements by ICP/MS, Total Recoverable

Aliquot ID:

94192-001E

Matrix: Ground Water

Init.

M719L18A JLH

Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-102D-121219 Preparation Analysis

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	U		μg/L	5.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
2. Barium	110		μg/L	100	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
3. Chromium	U		μg/L	10	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
4. Copper	U		μg/L	4.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
5. Lead	3.1		μg/L	3.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
6. Manganese	190		μg/L	50	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
7. Nickel	U		μg/L	20	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
8. Selenium	U		μg/L	5.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
9. Silver	U		μg/L	0.20	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
10. Vanadium	4.0		μg/L	4.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
11 7inc	11		ua/l	50	10	12/18/10	PT10I 18D	12/10/10	T/10I 10B	CIA

Mercury by CVAAS, Total Aliquot ID: 94192-001E Matrix: Ground Water Method: EPA 7470A Description: MW-102D-121219

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch

0.20

1.0

12/18/19

PM19L18A

12/18/19

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-001 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-102D-121219

μg/L

U

Parameter(s)			Reporting Limit	Dilution	Preparation		Analysis	
	Result (Q Units			P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
2. Aroclor-1221	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
3. Aroclor-1232	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
4. Aroclor-1242	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
5. Aroclor-1248	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
6. Aroclor-1254	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
7. Aroclor-1260	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK

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1. Mercury



Order: 94192 Page: 3 of 74 Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-102D-121219 Chain of Custody:

181434

Client Project Name: 1-10860 Sample No:

Collect Date:

12/12/19

Client Project No: 1-10860

Sample Matrix: **Ground Water** Collect Time:

10:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 94192-001 Matrix: Ground Water Description: MW-102D-121219

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 8. Aroclor-1262 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK U 9. Aroclor-1268 $\mu g/L$ 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

94192-001F

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-102D-121219

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJu
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJu
3. Benzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJu
4. Bromobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
5. Bromochloromethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
6. Bromodichloromethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
7. Bromoform	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
8. Bromomethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJι
9.2-Butanone	U		μg/L	25	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
10. n-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
11. sec-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
12. tert-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
13. Carbon Disulfide	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
15. Chlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
16. Chloroethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
17. Chloroform	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
18. Chloromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJι
19.2-Chlorotoluene	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
21. Dibromochloromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
22. Dibromomethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ،
29. 1,1-Dichloroethene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ

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Order: 94192 4 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-102D-121219

Chain of Custody:

181434

Client Project Name:

1-10860

Sample No:

Collect Date:

12/12/19

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time:

10:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	GC/MS		•	uot ID:	94192-001F MW-102D-121219		Fround Water		
				•	Prepar		Ar	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
31. trans-1,2-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
32.1,2-Dichloropropane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
33. cis-1,3-Dichloropropene	U	μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
34. trans-1,3-Dichloropropene	U	μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
35. Ethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
36. Ethylene Dibromide	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
37.2-Hexanone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
38. Isopropylbenzene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
39.4-Methyl-2-pentanone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
40. Methylene Chloride	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 41.2-Methylnaphthalene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
42. MTBE	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
43. Naphthalene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
44. n-Propylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
45. Styrene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
46.1,1,1,2-Tetrachloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
47.1,1,2,2-Tetrachloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
48. Tetrachloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
49. Toluene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
50.1,2,4-Trichlorobenzene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
51.1,1,1-Trichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
52.1,1,2-Trichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
53. Trichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
54. Trichlorofluoromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
55. 1,2,3-Trichloropropane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 56.1,2,3-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
57. 1,2,4-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
58.1,3,5-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
59. Vinyl Chloride	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
60. m&p-Xylene	U	μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
61. o-Xylene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 62. Xylenes	U	μg/L	3.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ



Order: 94192 Page: 5 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-102D-121219

Chain of Custody:

181434

Client Project Name: 1-

1-10860 Sample No:

Collect Date:

12/12/19

Client Project No:

Sample Matrix: Ground Water

Collect Time:

10:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS	Aliquot ID:	94192-001	Matrix: Ground Water
Method: EPA 3510C/EPA 8270E	Description:	MW-102D-121219	

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
3. Aniline	U	V-	μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
4. Anthracene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
23. Chrysene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
25. Dibenzofuran	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
26. 2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
34. Fluorene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP

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Order: 94192 Page: 6 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-102D-121219

Chain of Custody:

181434

10:00

Client Project Name:

1-10860

Sample No:

Sample Matrix:

Collect Date:

12/12/19

Client Project No:

Sampi

Ground Water Collect Time:

Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Par

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	94192-001	Matrix:	Ground Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-102D-121219				
						Prepara	ation	An	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
43.2-Methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
45. Naphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
46.2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
48.4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
58. Phenanthrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
59. Phenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
64. 2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
pH, Electrometric				Aliq	uot ID:	94192-001B	Matrix:	Ground Water		
Method: EPA 9040C				Des	cription:	MW-102D-121219				
						Prepara	ation	An	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init
1. pH	8.18	Н	pH Units	-1.00	1.0	NA	NA	12/17/19 00:00	WD19L17A	CM

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Client Identification:

Applied Science & Technology,

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-001

MW-102D-121219

Description: MW-102D-121219

94192 Order: 7 of 74 Page: Date: 12/26/19

181434

Chain of Custody:

Inc. - Brighton Client Project Name: 1-10860 Collect Date: 12/12/19 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:00 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94192-001B Matrix: Ground Water Method: EPA 9056A

Sample Description:

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 15000 μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19 WC19L17A VO

Residue, Filterable (TDS) Aliquot ID: 94192-001A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-102D-121219

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 50000 350000 WH19L16C 12/17/19 WH19L16C AMW μg/L 1.3 12/16/19

94192-001C Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Matrix: Ground Water Method: SM 4500-NH3 G-2011 Description: MW-102D-121219

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N 100 10 1.0 12/17/19 PW19L17A 12/17/19 WU19L17B SEM μg/L

RSN: 94192-191226133437



5. Aroclor-1248

6. Aroclor-1254

7. Aroclor-1260

1914 Holloway Drive

11766 E. Grand River

8660 S. Mackinaw Trail

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-002

Order: 94192 Page: 8 of 74 Date: 12/26/19

181434 Client Identification: Applied Science & Technology, Sample Description: MW-103-121219 Chain of Custody: Inc. - Brighton 1-10860 Sample No: 12/12/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:15 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94192-002D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-103-121219 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.54 mg/L 0.10 20 12/17/19 PW19L17C 12/17/19 WQ19L17C VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94192-002E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-103-121219 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch Init. U 5.0 PT19L18D CJA 1. Arsenic μg/L 10 12/18/19 12/19/19 T419L19B 2. Barium 440 100 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L 3. Chromium U μg/L 10 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 4. Copper 6.4 4.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μq/L 5. Lead 3.4 3.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L 110 10 50 12/18/19 PT19L18D 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 8. Selenium μg/L 5.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 10. Vanadium 4.2 10 PT19L18D 12/19/19 T419L19B CJA μg/L 4.0 12/18/19 U 11. Zinc μg/L 50 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA Mercury by CVAAS, Total Aliquot ID: 94192-002E Matrix: Ground Water Method: EPA 7470A Description: MW-103-121219 Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-002 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-103-121219 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 3. Aroclor-1232 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L

0.20

0.20

0.20

1.0

1.0

1.0

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12/19/19

12/19/19

12/19/19

PS19L19A

PS19L19A

PS19L19A

12/20/19

12/20/19

12/20/19

F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

SA19L20A RDK

SA19L20A RDK

SA19L20A RDK

U

U

U

μg/L

μg/L

μg/L

Holt, MI 48842

Brighton, MI 48116

Cadillac, MI 49601



Order: 94192 9 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-103-121219

Ground Water

Chain of Custody:

181434

1-10860 Client Project Name:

Sample No:

Collect Date:

‡: Parameter not included in NELAC Scope of Analysis.

12/12/19

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

Collect Time:

13:15

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-002 Matrix: Ground Water

Sample Matrix:

Method: EPA 3510C/EPA 8082A Description: MW-103-121219

					Prepa	ration	Δ	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 94192-002F **Matrix: Ground Water** Method: EPA 5030C/EPA 8260D Description: MW-103-121219

					Prepa	ration	Δ	ınalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acetone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 2. Acrylonitrile	U	μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
3. Benzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
4. Bromobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
5. Bromochloromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
6. Bromodichloromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
7. Bromoform	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
8. Bromomethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJι
9.2-Butanone	U	μg/L	25	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
10. n-Butylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
11. sec-Butylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
12. tert-Butylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
13. Carbon Disulfide	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
14. Carbon Tetrachloride	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
15. Chlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
16. Chloroethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
17. Chloroform	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
18. Chloromethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
19.2-Chlorotoluene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
21. Dibromochloromethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
22. Dibromomethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
23.1,2-Dichlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
24.1,3-Dichlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
25.1,4-Dichlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
26. Dichlorodifluoromethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
27.1,1-Dichloroethane	4.7	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
28.1,2-Dichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
29.1,1-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ

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MW-103-121219

Order: 94192 10 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Chain of Custody:

181434

1-10860 Client Project Name:

Sample No:

Collect Date:

12/12/19

1-10860 Client Project No:

Sample Matrix:

Sample Description:

Ground Water

Collect Time: 13:15

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC	C/MS			juot ID:	94192-002F	Matrix: G	round Water		
Method: EPA 5030C/EPA 8260D			Des	cription:	MW-103-121219				
					Prepai			nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
31. trans-1,2-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
32.1,2-Dichloropropane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
33. cis-1,3-Dichloropropene	U	μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
34. trans-1,3-Dichloropropene	U	μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
35. Ethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
36. Ethylene Dibromide	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
37.2-Hexanone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
38. Isopropylbenzene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
39.4-Methyl-2-pentanone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
40. Methylene Chloride	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 41.2-Methylnaphthalene	22	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
42. MTBE	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
43. Naphthalene	52	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
44. n-Propylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
45. Styrene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
46.1,1,1,2-Tetrachloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
47.1,1,2,2-Tetrachloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
48. Tetrachloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
49. Toluene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
50. 1,2,4-Trichlorobenzene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
51.1,1,1-Trichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
52.1,1,2-Trichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
53. Trichloroethene	1.1	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
54. Trichlorofluoromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
55. 1,2,3-Trichloropropane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 56.1,2,3-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
57. 1,2,4-Trimethylbenzene	1.4	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
58. 1,3,5-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
59. Vinyl Chloride	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
60. m&p-Xylene	U	μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
61. o-Xylene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 62. Xylenes	U	μg/L	3.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ



Order: 94192 Page: 11 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-103-121219

Chain of Custody:

181434

Client Project Name: 1-

1-10860

0:

Ground Water

Collect Date: 12/12/19

Client Project No:

Sample No:

Collect Time:

13:15

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Int.	Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				-	uot ID: cription:	94192-002 MW-103-121219	Matrix: G	round Water		
1. Acenaphthene U μg/L 2. Acenaphthylene U μg/L 3. Aniline U V-μg/L 4. 0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 3. Aniline U V-μg/L 4. 0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 4. Anthracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 5. Acobenizene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 6. Benzo(a)mthracene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 7. Benzo(a)myrene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 8. Benzo(a)myrene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 9. Benzo(philporanthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 9. Benzo(philporanthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 10. Benzo(philporanthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 11. Benzo(philporanthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Belzo-chorethoxyinethane U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Belzo-chorethoxyinethane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13. Bis(2-chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Chiloroethyy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Chiloroethy	2					5" "					
2. Acenaphthylene U	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
3. Aniline U V- µg/L 4. Anthracene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 5. Azobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 6. Benzo(a)anthracene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 7. Benzo(a)pyrene U µg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 7. Benzo(a)pyrene U µg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 9. Benzo(a)pyrene U µg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 9. Benzo(a)pyrene U µg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 10. Benzo(a)pyrene U µg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 11. Benzy (Acohol) U µg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 11. Benzy (Acohol) U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 12. Bis(2-chloroethoxy)methane U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 12. Bis(2-chloroethy)phrehafte U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 13. Bis(2-chloroethy)phrehafte U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 14. Bis(2-thlybevy)phrhaftafte U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 15. 4-Bromophenyl Phenylether U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 16. Buly Benzyl Phrhaftafte U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 17. Di-ha-buly Phrhaftafte U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 18. Carbazole U µg/L 19. Coloros-methylphenol U µg/L 10 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 19. 4-Chloros-methylphenol U µg/L 10 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 21. 2-Chlorophenyl Phenylether U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 22. 4-Chlorophenyl Phenylether U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 23. Chlorophenyl Phenylether U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 24. Dibenzo(ua.h)anthracene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 25. Dibenzo(uran U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B QJP 26. Q-Dibenzo(ua.h)anthracene U µg/L 27. Diethyl Phrhaftate U µg/L 28. Q-Dimethyl Phr	1. Acenaphthene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
4. Anthracene U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 5. Axobenzene U μg/L 1.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 7. Benzo(a)anthracene U μg/L 1.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 7. Benzo(a)pyrene U μg/L 1.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 8. Benzo(b)fluoranthene U μg/L 1.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 10. Benzo(b)fluoranthene U μg/L 1.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 11. Benzyl Alcohol U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 12. Bis(2-chloroethoxy)methane U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 13. Bis(2-chloroethoxy)methane U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 14. Bis(2-chloroethy)pther U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 15. Attromorphenyl Phenylether U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 16. Butyl Benzyl Pthalate U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 17. Di-n-butyl Pthalate U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 18. Carbazole U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 20. 2-Chloronphinhane U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 22. 4-Chlorophenol U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 23. Chrysene U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 24. Dibenzo(Lh)anthracee U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 25. Chlorophenol U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 25. Chlorophenol U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 26. 2-4-Chlorophenol U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 27. Diethyl Prhbalate U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L18B GJP 28. 2-4-Dintrophenol U μg/L 5.0 1.0 12181/9 PS19L18E 12181/9 S519L	2. Acenaphthylene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
\$ 5. Azobenzene U júyl. \$5.0 1.0 12/18/19 PS19L18E 12/18/19 \$519L18B GJP. 6. Benzo(a)anthracene U júyl. 1.0 1.0 12/18/19 PS19L18E 12/18/19 \$519L18B GJP 7. Benzo(a)pyrene U júyl. 1.0 1.0 12/18/19 PS19L18E 12/18/19 \$519L18B GJP 9. Benzo(b)fluoranthene U júyl. 1.0 1.0 12/18/19 PS19L18E 12/18/19 \$519L18B GJP 10. Benzo(b)fluoranthene U júyl. 5.0 1.0 12/18/19 PS19L18E 12/18/19 \$519L18B GJP 11. Benzo(b)fluoranthene U júyl. 5.0 1.0 12/18/19 PS19L18E 12/18/19 \$519L18B GJP 12. Bis(2-chloroethoxy)methane U júyl. 5.0 1.0 12/18/19 PS19L18E 12/18/19 \$519L18B GJP 13. Bis(2-chloroethoxy)methane U júyl. 5.0 1.0 12/18/19	3. Aniline	U	V-	μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
6. Benzo(a)anthracene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 7. Benzo(a)pyrene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 8. Benzo(b)fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 10. Benzo(b)fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 11. Benzo(b)fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 11. Benzo(b)fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 11. Benzo(b)fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13. Bis(2-chloroethoxy)methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chloroethoxy)methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chloroethy)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 15. 4-Bromopheny Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 16. Buyl Benzyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 17. Din-buyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 21. 2-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 2-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chlysene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a/h)nathracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzo(a/h)nathracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2-4-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2-Dibenzo(a/h)nathracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2-Dibenzo(a/h)nathracene U μg/L 5.0 1.0 12/1	4. Anthracene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
7. Benzo(a)pyrene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 8. Benzo(p/h)por/ene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 9. Benzo(p/h)per/ene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 10. Benzo(p/h)por/ene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 11. Benzyl Alcohol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Bis(2-chloroethoxyl)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-ethylhexyl)phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 15. Buryl) Phthalate U µg/L 5.0 1.0 12/18/19 PS19	‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
8. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 9. Benzo(ghliperylene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 10. Benzo(k)fluoranthene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 11. Benzy (Alcohol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Bis(2-chloroethxy)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13. Bis(2-chloroethxy)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13. Bis(2-chloroethxy)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13. Bis(2-chloroethy)thewyl)phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 15.4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 16. Buyl Benzyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 16. Buyl Benzyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 17. Di-n-butyl Pthhalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. Bis Carbacole U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. Chloro-ghrhibalen U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. Chloro-ghrhibalen U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhibalen U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhibalen U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhiden U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhiden U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhiden U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhiden U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhiden U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhiden U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhiden U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhiden U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Chloro-ghrhiden U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13. Ch	6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
9. Benzo(phi)perylene U µg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 10. Benzo(k/ Uoranthene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 11. Benzyl Alcohol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-chloroethy)phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 20. 2-Chloro-aphthalene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 21. 2-Chloro-phenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chloro-phenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chloro-phenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chloro-phenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Dibenzo(a,h)anthracene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzo(a,h)anthracene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2-L-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethylphenol G µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2-L-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2-L-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2-L-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethylphenol G 0 µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2	7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
10. Benzo(k)fluoranthene	8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
11. Benzyl Alcohol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12. Bis[2-chloroethyx)methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13. Bis[2-chloroethyx)methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis[2-ethylnexyl)phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chrysene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2.4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2.4-Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2.4-Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2.4-Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2.4-Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2.4-Dimitrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2.4-Dimitrophenol U μg/L 5.0 1.0 12/18/19 PS19L1	9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
12. Bis(2-chloroethoxy)methane	10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
13. Bis(2-chloroethyl)ether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 15. 4Bromophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 21. 2-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2-4-Dindrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2-4-Dindrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2-4-Dimethylphenol 60 μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2-4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Fluorene U μg/L 5	11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chrysene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethylphenol 60 μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dimitrofoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dimitrofoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 12 μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 16. Butyl Benzyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 17. Din-butyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 18. Carbazole U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 20. 2-Chloronaphthalene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 21. 2-Chlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chrysene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U µg/L 4.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2-4-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2-4-Dimethylphenol 60 µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2-4-Dinitrophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2-4-Dinitrophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2-6-Dinitrotoluene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 12	13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
16. Butyl Benzyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 18. Carbazole U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 20. 2-Chloronaphthalene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 21. 2-Chlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chrysene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U µg/L 25. Dibenzofuran U µg/L 26. 2.4-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2.4-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2.4-Dimethylphenol 60 µg/L 50 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2.4-Dimitrophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2.4-Dimitrotoluene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 12 µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachloroboutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachloroboutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachloroboutadiene U µg/L 50 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
17. Di-n-butyl Phthalate U μg/L 18. Carbazole U μg/L 18. Carbazole U μg/L 19. 4- Chloro-3-methylphenol U μg/L 19. 4- Chloro-3-methylphenol U μg/L 19. 4- Chloro-3-methylphenol U μg/L 19. 4- Chloro-3-methylphenol U μg/L 19. 4- Chloro-3-methylphenol U μg/L 19. 4- Chloro-3-methylphenol U μg/L 19. 4- Chloro-3-methylphenol U μg/L 19. 4- Chloro-3-methylphenol U μg/L 19. 4- Chloro-3-methylphenol U μg/L 19. 5.0 10. 12/18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 12-18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrophenol 19 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrotoluene 19 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrotoluene 19 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrotoluene 19 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrotoluene 19 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrotoluene 19 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrotoluene 19 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrotoluene 19 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrotoluene 19 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrotoluene 10 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-4-Dinitrotoluene 10 μg/L 10 10 12/18/19 PS19L18E 12/18/19 S519L18B GJP 13-18-18-18-18-18-18-18-18-18-18-18-18-18-	15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
# 18. Carbazole U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 20. 2-Chloronaphthalene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 21. 2-Chlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chrysene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U µg/L 4.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethylphenol 60 µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dinitrophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dinitrophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
19.4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 20.2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 21.2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chrysene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U μg/L 25. Dibenzofuran U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dinitrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dinitrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
20.2-Chloronaphthalene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 21.2-Chlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22.4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chrysene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U µg/L 4.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethylphenol 60 µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dinitrophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dinitrotoluene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 1.2 µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	‡ 18. Carbazole	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
21.2-Chlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 22.4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chrysene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzofuran U µg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U µg/L 4.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dimethyl Phthalate U <	19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 23. Chrysene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethylphenol 60 μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12	20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
23. Chrysene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethylphenol 60 μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dimitrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dimitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dimitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene	21.2-Chlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethylphenol 60 μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U <td>22.4-Chlorophenyl Phenylether</td> <td>U</td> <td></td> <td>μg/L</td> <td>5.0</td> <td>1.0</td> <td>12/18/19</td> <td>PS19L18E</td> <td>12/18/19</td> <td>S519L18B</td> <td>GJP</td>	22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethylphenol 60 μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	23. Chrysene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethyl phenol 60 μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/	24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 28. 2,4-Dimethyl phenol 60 μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/	25. Dibenzofuran	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
28. 2,4-Dimethylphenol 60 μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	26. 2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	28.2,4-Dimethylphenol	60		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
33. Fluoranthene 1.2 μg/L 1.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	33. Fluoranthene	1.2			1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	34. Fluorene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/18/19 S519L18B GJP	35. Hexachlorobenzene	U			5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
	36. Hexachlorobutadiene	U		· -	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
	37. Hexachlorocyclopentadiene	U	V-		5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 94192 Page: 12 of 74 Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-103-121219 Chain of Custody:

181434

1-10860 Client Project Name:

Sample No:

Collect Date:

12/12/19

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time: 13:15

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				•	uot ID:	94192-002	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-103-121219				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepar P. Date	ation P. Batch	A. Date	nalysis A. Batch	Init
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	
42.2-Methylnaphthalene	15		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
43.2-Methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
45. Naphthalene	24		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
46.2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
48.4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
50. 2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
58. Phenanthrene	4.7		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
59. Phenol	7.3		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJI
pH, Electrometric				Alia	uot ID:	94192-002B	Matrix: G	round Water		
Method: EPA 9040C				•		MW-103-121219				
					•	Prepar	ation	Ar	nalysis	
Darameter(a)	D IA	_	11	Departing Limit	Dilution		D. Dotob	A Data	A Dotob	1

Reporting Limit

-1.00

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

Parameter(s)

1.pH

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

Units

pH Units

Result

12.4

Q

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

Dilution

1.0

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

A. Date

A. Batch Init.

12/18/19 14:47 WD19L18A CMB

P. Date

NA

P. Batch



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-002

Order: 94192 Page: 13 of 74 Date: 12/26/19

Analysis

A. Batch

WU19L17B SEM

Init.

A. Date

12/17/19

Applied Science & Technology, Sample Description: MW-103-121219 Chain of Custody: 181434 Client Identification: Inc. - Brighton Client Project Name: 1-10860 Collect Date: 12/12/19 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:15 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94192-002B Matrix: Ground Water Method: EPA 9056A Description: MW-103-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 25000 μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19 WC19L17A VO Residue, Filterable (TDS) Aliquot ID: 94192-002A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-103-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 50000 WH19L16C 1500000 12/17/19 WH19L16C AMW μg/L 1.3 12/16/19 94192-002C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-103-121219

Reporting Limit

10

Dilution

1.0

Result

4100

Q

Units

μg/L

RSN: 94192-191226133437

Preparation

P. Batch

PW19L17A

P. Date

12/17/19



Order: Page: Date:

94192 14 of 74 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-107S-121219 Chain of Custody:

181434

Client Project Name:

1-10860

Sample No:

Collect Date:

12/12/19

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time: 11:45

Sample Comments:

Definitions:

Cyanide, Free (without distillation)

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 94192-003D Matrix: Ground Water

Method: ASTM D7237-10 Description: MW-107S-121219

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ19L17C VO 1. Cyanide, Free 4.0 mg/L 0.20 40 12/17/19 PW19L17C 12/17/19

Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94192-003E Matrix: Ground Water

Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-107S-121219

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6.4		μg/L	5.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
2. Barium	U		μg/L	100	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
3. Chromium	U		μg/L	10	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
4. Copper	U		μg/L	4.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
5. Lead	U		μg/L	3.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
6. Manganese	U		μg/L	50	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
7. Nickel	U		μg/L	20	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
8. Selenium	U		μg/L	5.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
9. Silver	U		μg/L	0.20	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
10. Vanadium	4.9		μg/L	4.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
11. Zinc	U		μg/L	50	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA

Mercury by CVAAS, Total Aliquot ID: 94192-003E Matrix: Ground Water Method: EPA 7470A Description: MW-107S-121219

Preparation

Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-003 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-107S-121219

					Prepa	ration	А	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
2. Aroclor-1221	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
3. Aroclor-1232	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
4. Aroclor-1242	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
5. Aroclor-1248	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
6. Aroclor-1254	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
7. Aroclor-1260	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK

1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 94192 Page: 15 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-107S-121219

Chain of Custody:

181434

Client Project Name: 1-10860

Sample No:

Collect Date:

12/12/19

Client Project No: 1-

1-10860 Sample Matrix:

Ground Water Collect Time:

11:45

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Method: EPA 5030C/EPA 8260D

Aliquot ID:

94192-003

Matrix: Ground Water

Description: MW-107S-121219

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 8. Aroclor-1262 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK U 9. Aroclor-1268 $\mu g/L$ 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

94192-003F

Matrix: Ground Water

Description: MW-107S-121219

						Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acetone	U		μg/L	50	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ΖJι
3. Benzene	1.6		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
4. Bromobenzene	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ΖJ
5. Bromochloromethane	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
6. Bromodichloromethane	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
7. Bromoform	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
8. Bromomethane	U		μg/L	5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
9.2-Butanone	U		μg/L	25	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
10. n-Butylbenzene	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
11. sec-Butylbenzene	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
12. tert-Butylbenzene	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
13. Carbon Disulfide	U		μg/L	5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
15. Chlorobenzene	1.0		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
16. Chloroethane	U		μg/L	5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
17. Chloroform	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
18. Chloromethane	U		μg/L	5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
19.2-Chlorotoluene	U		μg/L	5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
21. Dibromochloromethane	U		μg/L	5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
22. Dibromomethane	U		μg/L	5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
23.1,2-Dichlorobenzene	4.3		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
27.1,1-Dichloroethane	3.2		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 94192 16 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107S-121219

Chain of Custody:

181434

11:45

Client Project Name:

1-10860

Collect Date:

Ground Water

12/12/19

Client Project No:

Sample No:

Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	GC/MS			quot ID:	94192-003F MW-107S-121219		round Water		
					Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q Unit	s Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
31. trans-1,2-Dichloroethene	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
32.1,2-Dichloropropane	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
33. cis-1,3-Dichloropropene	U	μg/	L 0.50	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
34. trans-1,3-Dichloropropene	U	μg/	L 0.50	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
35. Ethylbenzene	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
36. Ethylene Dibromide	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
37.2-Hexanone	U	μg/	L 50	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
38. Isopropylbenzene	U	μg/	L 5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
39.4-Methyl-2-pentanone	U	μg/	L 50	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
40. Methylene Chloride	U	μg/	L 5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
‡ 41.2-Methylnaphthalene	9.6	μg/	L 5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
42.MTBE	U	μg/	L 5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
43. Naphthalene	110	μg/	L 5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
44. n-Propylbenzene	U	L+ μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
45. Styrene	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
46.1,1,1,2-Tetrachloroethane	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
47.1,1,2,2-Tetrachloroethane	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
48. Tetrachloroethene	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
49. Toluene	3.1	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
50.1,2,4-Trichlorobenzene	U	μg/	L 5.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
51.1,1,1-Trichloroethane	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
52.1,1,2-Trichloroethane	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
53. Trichloroethene	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
54. Trichlorofluoromethane	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
55.1,2,3-Trichloropropane	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
‡ 56.1,2,3-Trimethylbenzene	4.6	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
57. 1,2,4-Trimethylbenzene	3.8	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
58.1,3,5-Trimethylbenzene	1.4	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
59. Vinyl Chloride	U	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
60. m&p-Xylene	3.0	μg/	L 2.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
61. o-Xylene	2.9	μg/	L 1.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
‡ 62. Xylenes	5.9	μg/	3.0	1.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ

RSN: 94192-191226133437



Ground Water

Order: 94192 Page: 17 of 74 Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-107S-121219 Chain of Custody:

181434

1-10860 Client Project Name:

Sample No:

Collect Date:

12/12/19

Client Project No:

1-10860 Sample Matrix: Collect Time:

11:45

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				-	uot ID: cription:	94192-003 MW-107S-121219		round Water		
						Prepara			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
3. Aniline	U	V-	μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
4. Anthracene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	
23. Chrysene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
25. Dibenzofuran	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
28.2,4-Dimethylphenol	180		μg/L	20	20	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
34. Fluorene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP



Order: 94192 18 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107S-121219 Chain of Custody:

181434

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date:

12/12/19

11:45

Client Project No:

Ground Water Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E	·		94192-003 MW-107S-121219	Matrix: G	Matrix: Ground Water					
Method. El A 33100/El A 0210E				Des	cription.		ation.	Λ	al raia	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepara P. Date	P. Batch	A. Date	nalysis A. Batch	Ini
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
42.2-Methylnaphthalene	5.4		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
43. 2-Methylphenol	8.3		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
‡ 44.3&4-Methylphenol	110		μg/L	10	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
45. Naphthalene	67		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
46.2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
48.4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
50. 2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
58. Phenanthrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
59. Phenol	24		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
64. 2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
pH, Electrometric				Aliq	uot ID:	94192-003B	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-107S-121219				
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

1.pH

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

Н

12.0

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

NA

NA

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

12/18/19 15:16 WD19L18A CMB

-1.00



Order: Page: Date:

94192 19 of 74 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-107S-121219 Chain of Custody:

181434

Client Project Name:

1-10860

Sample No:

μg/L

Collect Date:

12/12/19

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time:

11:45

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 94192-003B Description: MW-107S-121219

Matrix: Ground Water

Preparation

Inorganic Anions by IC Method: EPA 9056A

Parameter(s)

1. Chloride

Result Q Units

24000

Reporting Limit 10000

Dilution 1.0

P. Date 12/17/19

P. Batch PW19L17E A. Date 12/17/19

A. Batch Init. WC19L17A VO

Residue, Filterable (TDS)

Aliquot ID: Description: MW-107S-121219

94192-003A

Matrix: Ground Water

Analysis

Method: SM 2540 C-2011

Parameter(s)

Result Q Units 670000 μg/L

Reporting Limit 50000

Dilution 1.3

P. Date WH19L16C 12/16/19

Preparation

P. Batch

Analysis A. Date A. Batch 12/17/19

WH19L16C AMW

Nitrogen, Ammonia (Auto Analyzer)

Method: SM 4500-NH3 G-2011

1. Total Dissolved Solids

Aliquot ID:

94192-003C

Matrix: Ground Water

P. Batch

Description: MW-107S-121219

Analysis

A. Batch

Init.

Parameter(s) 1. Ammonia-N

Result Q Units 13000 $\mu g/L$

Reporting Limit Dilution 20

20

12/17/19 PW19L17A

Preparation

P. Date

12/17/19

A. Date

WU19L17B SEM

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

RSN: 94192-191226133437



Order: Page: Date:

94192 20 of 74 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107D-121219 Chain of Custody:

181434

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date:

12/12/19

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Ground Water

‡: Parameter not included in NELAC Scope of Analysis.

Collect Time:

12:20

Cyanide, Free (without distillation) Aliquot ID: 94192-004D Matrix: Ground Water

NA: Not Applicable

Method: ASTM D7237-10 Description: MW-107D-121219

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ19L17C VO 1. Cyanide, Free 1.2 mg/L 0.10 20 12/17/19 PW19L17C 12/17/19

Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94192-004E Matrix: Ground Water

Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-107D-121219

						Prepa	ration	Analysis		
Parameter(s)	Result	Q I	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	U		μg/L	5.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
2. Barium	U		μg/L	100	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
3. Chromium	U		μg/L	10	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
4. Copper	U		μg/L	4.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
5. Lead	U		μg/L	3.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
6. Manganese	U		μg/L	50	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
7. Nickel	U		μg/L	20	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
8. Selenium	U		μg/L	5.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
9. Silver	U		μg/L	0.20	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
10. Vanadium	U		μg/L	4.0	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA
11.Zinc	U		μg/L	50	10	12/18/19	PT19L18D	12/19/19	T419L19B	CJA

Mercury by CVAAS, Total Aliquot ID: 94192-004E Matrix: Ground Water Method: EPA 7470A

Description: MW-107D-121219

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-004 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-107D-121219

					Prepa	ration	А	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
2. Aroclor-1221	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
3. Aroclor-1232	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
4. Aroclor-1242	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
5. Aroclor-1248	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
6. Aroclor-1254	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
7. Aroclor-1260	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK

1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 94192 Page: 21 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-107D-121219

Chain of Custody:

181434

Client Project Name: 1-10860

Sample No:

Collect Date:

12/12/19

Client Project No:

Sample Matrix: Ground Water

Collect Time:

12:20

Sample Comments:

Definitions: Q: Qualifier (see de

Polychlorinated Biphenyls (PCBs)

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 94192-004 Matrix: Ground Water

Method: EPA 3510C/EPA 8082A Description: MW-107D-121219

					Prepa	ration	A	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDI
‡ 9. Aroclor-1268	U	ua/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDI

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 94192-004F Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-107D-121219

					Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acetone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
‡ 2. Acrylonitrile	U	μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
3. Benzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
4. Bromobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
5. Bromochloromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
6. Bromodichloromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
7. Bromoform	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
8. Bromomethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJι
9.2-Butanone	U	μg/L	25	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
10. n-Butylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
11. sec-Butylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
12. tert-Butylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
13. Carbon Disulfide	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
14. Carbon Tetrachloride	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
15. Chlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
16. Chloroethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
17. Chloroform	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
18. Chloromethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
19.2-Chlorotoluene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
21. Dibromochloromethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
22. Dibromomethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
23.1,2-Dichlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
24.1,3-Dichlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
25.1,4-Dichlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ΖJ
26. Dichlorodifluoromethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
27.1,1-Dichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
28.1,2-Dichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
29.1,1-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ

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Order: 94192 Page: 22 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-107D-121219

Chain of Custody:

181434

Client Project Name: 1-

1-10860

Sample No:

Sample Matrix:

Collect Date:

12/12/19

Client Project No:

--- F

Ground Water Collect Time:

t Time: 12:20

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by	y GC/MS			Aliq	uot ID:	94192-004F	Matrix: G	round Water		
Method: EPA 5030C/EPA 8260D				Des	cription:	MW-107D-121219				
						Prepara	tion	Ar	nalysis	
Parameter(s)	Result	Q U	Inits	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
31. trans-1,2-Dichloroethene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
32.1,2-Dichloropropane	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
33. cis-1,3-Dichloropropene	U	μ	ιg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
34. trans-1,3-Dichloropropene	U	μ	ιg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
35. Ethylbenzene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
36. Ethylene Dibromide	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
37.2-Hexanone	U	μ	ιg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
38. Isopropylbenzene	U	μ	ιg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
39.4-Methyl-2-pentanone	U	μ	ιg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
40. Methylene Chloride	U	μ	ιg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 41.2-Methylnaphthalene	U	μ	ιg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
42. MTBE	U	μ	ιg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
43. Naphthalene	U	μ	ιg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
44. n-Propylbenzene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
45. Styrene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
46.1,1,1,2-Tetrachloroethane	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
47.1,1,2,2-Tetrachloroethane	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
48. Tetrachloroethene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
49. Toluene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
50.1,2,4-Trichlorobenzene	U	μ	ιg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
51.1,1,1-Trichloroethane	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
52.1,1,2-Trichloroethane	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
53. Trichloroethene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
54. Trichlorofluoromethane	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
55. 1,2,3-Trichloropropane	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 56.1,2,3-Trimethylbenzene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
57. 1,2,4-Trimethylbenzene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
58.1,3,5-Trimethylbenzene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
59. Vinyl Chloride	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
60. m&p-Xylene	U	μ	ιg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
61. o-Xylene	U	μ	ιg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 62. Xylenes	U	μ	ιg/L	3.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ



Order: 94192 23 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107D-121219 Chain of Custody:

181434

Client Project Name:

1-10860

Ground Water

Collect Date:

12/12/19

Client Project No:

Sample No:

Collect Time:

12:20

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	94192-004 MW-107D-121219		round Water		
						Prepar			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
3. Aniline	U	V-	μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
4. Anthracene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
23. Chrysene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
25. Dibenzofuran	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
34. Fluorene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJF
35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

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RSN: 94192-191226133437



Ground Water

Order: 94192 Page: 24 of 74 Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107D-121219 Chain of Custody:

181434

Client Project Name:

12/12/19

Client Project No:

1-10860

Sample No: Sample Matrix: Collect Date: Collect Time:

12:20

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Į.	Aliquot ID:	94192-004	Matrix:	Ground Water
Method: EPA 3510C/EPA 8270E					Description:	MW-107D-121219		
						Preparati	ion	A
Parameter(s)	Result	Q	Units	Reporting Lim	nit Dilution	P. Date	P. Batch	A. Date

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	GJ
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
42. 2-Methylnaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
43. 2-Methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
44.3&4-Methylphenol	U		μg/L	10	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
45. Naphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
46.2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
48.4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	C
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	C
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
58. Phenanthrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
59. Phenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	C
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	(
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	C
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G
64. 2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/18/19	S519L18B	G

pH, Electrometric Aliquot ID: 94192-004B **Matrix: Ground Water** Method: EPA 9040C Description: MW-107D-121219

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1.pH 8.54 -1.00 NA NA 12/17/19 00:00 WD19L17A CMB pH Units 1.0

RSN: 94192-191226133437



Method: SM 4500-NH3 G-2011

Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-004

Order: 94192 Page: 25 of 74 Date: 12/26/19

Analysis

A. Batch

WU19L17B SEM

Init.

A. Date

12/17/19

Applied Science & Technology, Sample Description: MW-107D-121219 Chain of Custody: 181434 Client Identification: Inc. - Brighton Client Project Name: 1-10860 Collect Date: 12/12/19 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 12:20 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94192-004B Matrix: Ground Water Method: EPA 9056A Description: MW-107D-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 22000 μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19 WC19L17A VO Residue, Filterable (TDS) Aliquot ID: 94192-004A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-107D-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 50000 360000 WH19L16C 12/17/19 WH19L16C AMW μg/L 1.3 12/16/19 94192-004C Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Matrix: Ground Water

Reporting Limit

10

Result

560

Q

Units

μg/L

Description: MW-107D-121219

Dilution

1.0

Preparation

P. Batch

PW19L17A

P. Date

12/17/19



1914 Holloway Drive

11766 E. Grand River

8660 S. Mackinaw Trail

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-005

Order: 94192 Page: 26 of 74 Date: 12/26/19

Applied Science & Technology, 181434 Client Identification: Sample Description: MW-108-121219 Chain of Custody: Inc. - Brighton 1-10860 Sample No: 12/12/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:50 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94192-005D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-108-121219 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.018 mg/L 0.0050 1.0 12/17/19 PW19L17C 12/17/19 WQ19L17C VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94192-005E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-108-121219 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch Init. U 5.0 PT19L18D CJA 1. Arsenic μg/L 10 12/18/19 12/19/19 T419L19B 2. Barium 390 100 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L 3. Chromium 19 μg/L 10 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 4. Copper 10 4.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μq/L 5. Lead 15 3.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 10 50 12/18/19 PT19L18D 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 8. Selenium μg/L 5.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA U 10. Vanadium 10 PT19L18D 12/19/19 T419L19B CJA μg/L 4.0 12/18/19 U 11. Zinc μg/L 50 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA Mercury by CVAAS, Total Aliquot ID: 94192-005E Matrix: Ground Water Method: EPA 7470A Description: MW-108-121219 Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-005 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-108-121219 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 3. Aroclor-1232 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 6. Aroclor-1254 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L 7. Aroclor-1260 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK

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F: (810) 220-3311

F: (231) 775-8584

Holt, MI 48842

Brighton, MI 48116

Cadillac, MI 49601



Order: 94192 Page: Date:

27 of 74 12/26/19

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-108-121219 Chain of Custody:

181434

Client Project Name:

1-10860

Sample No:

Collect Date:

12/12/19

Client Project No:

1-10860 Sample Matrix:

Ground Water Collect Time:

13:50

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Aliquot ID: 94192-005 Description: MW-108-121219 Matrix: Ground Water

					Prepa	ration	А	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
‡ 9. Aroclor-1268	U	ua/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK

94192-005F Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: Matrix: Ground Water Method: EPA 5030C/EPA 8260D Description: MW-108-121219

Analysis Preparation Result Ω I Inits Reporting Limit Dilution P. Date P. Batch A. Date Parameter(s) A. Batch Init. U 1. Acetone 50 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ μq/L 2. Acrylonitrile U μg/L 2.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ3. Benzene U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μq/L 4. Bromobenzene U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μg/L U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ5. Bromochloromethane μg/L 6. Bromodichloromethane U 12/18/19 VB19L18B 12/18/19 VB19L18B μg/L 1.0 1.0 ZJJ 7. Bromoform U μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ8. Bromomethane U μg/L 5.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ U 9.2-Butanone VB19L18B ZJJ μg/L 25 1.0 12/18/19 VB19L18B 12/18/19 10. n-Butylbenzene U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μq/L U ZJJ VB19L18B 11. sec-Butylbenzene μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 12. tert-Butylbenzene U μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ U VB19L18B 13. Carbon Disulfide μg/L 5.0 1.0 12/18/19 12/18/19 VB19L18B ZJJ 14. Carbon Tetrachloride U 1.0 VB19L18B 12/18/19 VB19L18B ZJJ μg/L 1.0 12/18/19 U 15. Chlorobenzene 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μg/L U 16. Chloroethane 5.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJμg/L 17. Chloroform U μg/L 1.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ 18. Chloromethane U 1.0 VB19L18B VB19L18B ZJJ μg/L 5.0 12/18/19 12/18/19 19.2-Chlorotoluene U μg/L 5.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ‡ 20.1,2-Dibromo-3-chloropropane (SIM) U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B 7.1.1 μg/L 21. Dibromochloromethane U 5.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ μg/L U 5.0 1.0 **VB19I 18B** 12/18/19 VB19L18B 22. Dibromomethane μg/L 12/18/19 *7*.J.J 23.1,2-Dichlorobenzene U μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ U **VB19I 18B** 1.0 12/18/19 12/18/19 VB19L18B ZJJ 24. 1.3-Dichlorobenzene μg/L 1.0 25.1,4-Dichlorobenzene U 1.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B 7.1.1 ua/L U 5.0 VB19L18B 12/18/19 VB19L18B 26. Dichlorodifluoromethane μg/L 1.0 12/18/19 ZJJ U 27.1,1-Dichloroethane 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B 7.1.1 μg/L 28.1,2-Dichloroethane U μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ 29.1,1-Dichloroethene U 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ

> 1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

μg/L

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0



Order: 94192 Page: 28 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-108-121219

NA: Not Applicable

Sample Matrix:

Chain of Custody:

181434

Client Project Name: 1-10860

Sample No:

Collect Date:

12/12/19

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Ground Water

Collect Time: 13:50

Volatile Organic Compounds (VOCs) by GC/MS Aliqu

Aliquot ID: 94192-005F

‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-108-121219 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 30. cis-1,2-Dichloroethene U μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ 31. trans-1.2-Dichloroethene U μg/L 1.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ 32.1,2-Dichloropropane U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μg/L U 33. cis-1,3-Dichloropropene 0.50 1.0 12/18/19 VB19I 18B 12/18/19 VB19I 18B 7.1.1 μg/L 34. trans-1,3-Dichloropropene U 0.50 12/18/19 VB19L18B 12/18/19 VB19L18B μg/L 1.0 ZJJ u **VB19I 18B** 12/18/19 VB19L18B ZJJ 35. Ethylbenzene μg/L 10 10 12/18/19 36. Ethylene Dibromide U μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B 37.2-Hexanone u 50 **VB19I 18B** 12/18/19 VB19I 18B 7.1.1 μg/L 1.0 12/18/19 38. Isopropylbenzene U 5.0 1.0 12/18/19 **VB19I 18B** 12/18/19 VB19L18B 7.1.1 ua/L U ZJJ 50 VB19L18B 39. 4-Methyl-2-pentanone μg/L 1.0 12/18/19 VB19L18B 12/18/19 40. Methylene Chloride U 5.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μg/L ‡ 41.2-Methylnaphthalene U μg/L 5.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ 42. MTBE U 5.0 1.0 VB19L18B 12/18/19 VB19L18B μg/L 12/18/19 *7*.J.J 43. Naphthalene u 5.0 1.0 12/18/19 **VB19L18B** 12/18/19 **VB19L18B** μg/L U VB19L18B 12/18/19 44. n-Propylbenzene 1.0 1.0 12/18/19 VB19I 18B 7.1.1 μg/L U 1.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ 45. Styrene μg/L 46.1,1,1,2-Tetrachloroethane U 10 10 12/18/19 **VB19I 18B** 12/18/19 VB19L18B *7*.J.J μg/L U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ 47.1,1,2,2-Tetrachloroethane μg/L U 1.0 12/18/19 **VB19I 18B** 12/18/19 VB19I 18B 7.I.I 48. Tetrachloroethene μg/L 10 49. Toluene u 1.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ ua/L U 5.0 1.0 VB19L18B VB19L18B ZJJ 50.1,2,4-Trichlorobenzene μg/L 12/18/19 12/18/19 U 51.1,1,1-Trichloroethane μq/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ U 52.1,1,2-Trichloroethane μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ 53. Trichloroethene U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μg/L 54. Trichlorofluoromethane U $\mu g/L$ 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ U **VB19L18B** ZJJ 55.1,2,3-Trichloropropane 1.0 1.0 12/18/19 VB19L18B 12/18/19 μg/L ‡ 56.1,2,3-Trimethylbenzene U μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ 57. 1,2,4-Trimethylbenzene U 1.0 VB19L18B 12/18/19 VB19L18B ZJJ μg/L 1.0 12/18/19 58.1,3,5-Trimethylbenzene U 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B μg/L 1.0 ZJJ 59. Vinyl Chloride U 1.0 1.0 VB19L18B 12/18/19 VB19L18B ZJJ μg/L 12/18/19 U 60. m&p-Xylene μg/L 2.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJU 61. o-Xylene μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 **VB19L18B** ZJJ ‡ 62. Xylenes U 3.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μq/L



Order: 94192 Page: 29 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-108-121219

Ground Water

Chain of Custody:

181434

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

12/12/19 13:50

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	94192-005 MW-108-121219	Matrix: G	round Water		
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
3. Aniline	U	V-	μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
4. Anthracene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
23. Chrysene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
25. Dibenzofuran	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
34. Fluorene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP



Order: 94192 Page: 30 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-108-121219

Chain of Custody:

181434

Client Project Name: 1-10860

Sample No:

Collect Date:

12/12/19

Client Project No: 1-10860

Sample Matrix:

Ground Water Collect Time:

llect Time: 13:50

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	94192-005	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-108-121219				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
43.2-Methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
45. Naphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
46.2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
48. 4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
58. Phenanthrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
59. Phenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
64. 2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
pH, Electrometric				Aliq	uot ID:	94192-005B	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-108-121219				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

1.pH

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

12.4 H

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

NA

NA

-1.00

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

12/18/19 15:20 WD19L18A CMB



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-005

Order: 94192 Page: 31 of 74 Date: 12/26/19

Applied Science & Technology, Sample Description: MW-108-121219 Chain of Custody: 181434 Client Identification: Inc. - Brighton Client Project Name: 1-10860 Collect Date: 12/12/19 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:50 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94192-005B Matrix: Ground Water Method: EPA 9056A Description: MW-108-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 27000 μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19 WC19L17A VO Residue, Filterable (TDS) Aliquot ID: 94192-005A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-108-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 50000 WH19L16C 1200000 12/17/19 WH19L16C AMW μg/L 1.3 12/16/19 94192-005C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-108-121219 Preparation Analysis

Reporting Limit

10

Dilution

1.0

P. Date

12/17/19

P. Batch

PW19L17A

A. Date

12/17/19

A. Batch

WU19L17B SEM

Init.

Result

2000

Q

Units

μg/L



11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-006

Order: 94192 Page: 32 of 74 Date: 12/26/19

Applied Science & Technology, 181434 Client Identification: Sample Description: MW-109D-121219 Chain of Custody: Inc. - Brighton 1-10860 Sample No: 12/12/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:00 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94192-006D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-109D-121219 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.026 mg/L 0.0050 1.0 12/17/19 PW19L17C 12/17/19 WQ19L17C VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94192-006E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-109D-121219 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch Init. U 5.0 PT19L18D CJA 1. Arsenic μg/L 10 12/18/19 12/19/19 T419L19B 2. Barium 490 100 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L 3. Chromium U μg/L 10 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 4. Copper U 4.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μq/L U 5. Lead 3.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 10 50 12/18/19 PT19L18D 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 8. Selenium μg/L 5.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA U 10. Vanadium 10 PT19L18D 12/19/19 T419L19B CJA μg/L 4.0 12/18/19 U 11. Zinc μg/L 50 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA Mercury by CVAAS, Total Aliquot ID: 94192-006E Matrix: Ground Water Method: EPA 7470A Description: MW-109D-121219 Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-006 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-109D-121219 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 3. Aroclor-1232 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 6. Aroclor-1254 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L 7. Aroclor-1260 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

T: (810) 220-3300

T: (231) 775-8368



Order: 94192 Page: Date:

33 of 74 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-109D-121219 Chain of Custody:

181434

Client Project Name: 1-10860

Sample No:

Collect Date:

‡: Parameter not included in NELAC Scope of Analysis.

12/12/19

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

Sample Matrix: **Ground Water** Collect Time:

15:00

Polychlorinated Biphenyls (PCBs) Matrix: Ground Water Aliquot ID: 94192-006

Method: EPA 3510C/EPA 8082A Description: MW-109D-121219

					Prepa	ration	nalysis	
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK

Volatile Organic Compounds (VOCs) by GC/MS 94192-006F **Matrix: Ground Water** Aliquot ID: Method: EPA 5030C/EPA 8260D Description: MW-109D-121219

			Preparation				ration	Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Acetone	U		μg/L	50	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ	
‡ 2. Acrylonitrile	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ	
3. Benzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ	
4. Bromobenzene	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ	
5. Bromochloromethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJu	
6. Bromodichloromethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
7. Bromoform	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJu	
8. Bromomethane	U		μg/L	10	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
9.2-Butanone	U		μg/L	25	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJu	
10. n-Butylbenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
11. sec-Butylbenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
12. tert-Butylbenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
13. Carbon Disulfide	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
14. Carbon Tetrachloride	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
15. Chlorobenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
16. Chloroethane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
17. Chloroform	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
18. Chloromethane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
19.2-Chlorotoluene	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
21. Dibromochloromethane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
22. Dibromomethane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
23.1,2-Dichlorobenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
24.1,3-Dichlorobenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
25. 1,4-Dichlorobenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
26. Dichlorodifluoromethane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
27.1,1-Dichloroethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
28.1,2-Dichloroethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ	
29.1,1-Dichloroethene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJu	

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Order: 94192 34 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-109D-121219 Chain of Custody:

181434

1-10860 Client Project Name:

Sample No:

Collect Date:

12/12/19

Client Project No:

Sample Matrix: **Ground Water** Collect Time: 15:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	GC/MS			quot ID:	94192-006F MW-109D-12121		round Water		
					Prepa	ation	Ar	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
31. trans-1,2-Dichloroethene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
32.1,2-Dichloropropane	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
33. cis-1,3-Dichloropropene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
34. trans-1,3-Dichloropropene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
35. Ethylbenzene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
36. Ethylene Dibromide	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
37.2-Hexanone	U	μg/L	50	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
38. Isopropylbenzene	U	μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
39.4-Methyl-2-pentanone	U	μg/L	50	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
40. Methylene Chloride	U	μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
‡ 41.2-Methylnaphthalene	U	μg/L	15	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
42. MTBE	U	μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
43. Naphthalene	U	μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
44. n-Propylbenzene	U	L+ μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
45. Styrene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
46.1,1,1,2-Tetrachloroethane	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
47.1,1,2,2-Tetrachloroethane	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
48. Tetrachloroethene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
49. Toluene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
50.1,2,4-Trichlorobenzene	U	μg/L	10	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
51.1,1,1-Trichloroethane	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
52.1,1,2-Trichloroethane	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
53. Trichloroethene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
54. Trichlorofluoromethane	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
55. 1,2,3-Trichloropropane	U	μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
‡ 56.1,2,3-Trimethylbenzene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
57. 1,2,4-Trimethylbenzene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
58.1,3,5-Trimethylbenzene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
59. Vinyl Chloride	U	μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
60. m&p-Xylene	5.6	μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
61.o-Xylene	U	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ
‡ 62. Xylenes	U	μg/L	7.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJJ



Order: 94192 35 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-109D-121219 Chain of Custody:

181434

1-10860 Client Project Name:

Sample No:

Collect Date:

12/12/19

1-10860 Client Project No:

Sample Matrix:

Ground Water Collect Time:

15:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	94192-006 MW-109D-121219		round Water		
						Prepar	ation		nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
3. Aniline	U	V-	μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
4. Anthracene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
23. Chrysene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
25. Dibenzofuran	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
34. Fluorene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP

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Order: 94192 36 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

MW-109D-121219 Sample Description:

Ground Water

Chain of Custody:

181434

Client Project Name:

1-10860

Collect Date:

12/12/19

Client Project No: 1-10860 Sample No: Sample Matrix:

Collect Time:

15:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E					uot ID:	94192-006 MW-109D-121219		round Water		
Method: EPA 3510C/EPA 82/0E				Des	cription:					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepara P. Date	P. Batch	A. Date	nalysis A. Batch	Init
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
43.2-Methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
45. Naphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
46.2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
48.4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
58. Phenanthrene	2.2		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
59. Phenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
64. 2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
pH, Electrometric				Aliq	uot ID:	94192-006B	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-109D-121219				
						Prepara			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init

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1.pH

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

12.6 E

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1.0

NA

NA

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

12/18/19 15:22 WD19L18A CMB

-1.00



Method: SM 4500-NH3 G-2011

Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-006

Order: 94192 Page: 37 of 74 Date: 12/26/19

Analysis

A. Batch

WU19L17B SEM

Init.

A. Date

12/17/19

Applied Science & Technology, Sample Description: MW-109D-121219 Chain of Custody: 181434 Client Identification: Inc. - Brighton Client Project Name: 1-10860 Collect Date: 12/12/19 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:00 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94192-006B Matrix: Ground Water Method: EPA 9056A Description: MW-109D-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 30000 μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19 WC19L17A VO Residue, Filterable (TDS) Aliquot ID: 94192-006A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-109D-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 50000 2000000 WH19L16C 12/17/19 WH19L16C AMW μg/L 1.3 12/16/19 94192-006C Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Matrix: Ground Water

Reporting Limit

10

Result

3600

Q

Units

μg/L

Description: MW-109D-121219

Dilution

1.0

Preparation

P. Batch

PW19L17A

P. Date

12/17/19

RSN: 94192-191226133437



1914 Holloway Drive

11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

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Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-007

Order: 94192 Page: 38 of 74 Date: 12/26/19

Applied Science & Technology, Chain of Custody: 181434 Client Identification: Sample Description: MW-110S-121219 Inc. - Brighton 1-10860 Sample No: 12/12/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:15 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94192-007D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-110S-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free U mg/L 0.0050 1.0 12/17/19 PW19L17D 12/17/19 WQ19L17C VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94192-007E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-110S-121219 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch Init. U 5.0 PT19L18D CJA 1. Arsenic μg/L 10 12/18/19 12/19/19 T419L19B 2. Barium 290 100 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L 3. Chromium 45 μg/L 10 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 4. Copper 4.2 4.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μq/L U 5. Lead 3.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 10 50 12/18/19 PT19L18D 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 8. Selenium μg/L 5.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA U 10. Vanadium 10 PT19L18D 12/19/19 T419L19B CJA μg/L 4.0 12/18/19 U 11. Zinc μg/L 50 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA Mercury by CVAAS, Total Aliquot ID: 94192-007E Matrix: Ground Water Method: EPA 7470A Description: MW-110S-121219 Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-007 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-110S-121219 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 3. Aroclor-1232 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK 6. Aroclor-1254 U 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK μg/L 7. Aroclor-1260 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/20/19 SA19L20A RDK

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F: (231) 775-8584

T: (517) 699-0345

T: (810) 220-3300

T: (231) 775-8368



Order: 94 Page: 39 Date: 12

94192 39 of 74 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-110S-121219

Ground Water

Chain of Custody:

181434

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

12/12/19

Client Project No:

Sample Comments:

Parameter(s)

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Preparation

P. Batch

P. Date

15:15

Analysis

A. Batch

Init.

A. Date

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-007 Matrix: Ground Water

Sample Matrix:

Method: EPA 3510C/EPA 8082A Description: MW-110S-121219

Result

Ω

					Prepa	ration	А	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/20/19	SA19L20A RDK

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 94192-007F

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D

Description: MW-110S-121219

I Inits

U 1. Acetone 50 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ μq/L 2. Acrylonitrile U μg/L 2.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ3. Benzene U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μq/L 4. Bromobenzene U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μg/L U 1.0 1.0 VB19L18B 12/18/19 VB19L18B 5. Bromochloromethane μg/L 12/18/19 6. Bromodichloromethane U 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B μg/L 1.0 7. Bromoform U μg/L 1.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B

Reporting Limit

Dilution

ZJJZJJ ZJJ8. Bromomethane U μg/L 5.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ U 9.2-Butanone 25 VB19L18B ZJJ μg/L 1.0 12/18/19 VB19L18B 12/18/19 10. n-Butylbenzene U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μq/L U ZJJ VB19L18B 11. sec-Butylbenzene μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 12. tert-Butylbenzene U μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ U VB19L18B 13. Carbon Disulfide μg/L 5.0 1.0 12/18/19 12/18/19 VB19L18B ZJJ 14. Carbon Tetrachloride U 1.0 VB19L18B 12/18/19 VB19L18B ZJJ μg/L 1.0 12/18/19 U 15. Chlorobenzene 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ μg/L U 16. Chloroethane 5.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJμg/L 17. Chloroform U μg/L 1.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ U 1.0 VB19L18B VB19L18B ZJJ 18. Chloromethane μg/L 5.0 12/18/19 12/18/19 19.2-Chlorotoluene U μg/L 5.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ‡ 20.1,2-Dibromo-3-chloropropane (SIM) U 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B 7.1.1 μg/L 21. Dibromochloromethane U 5.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ μg/L U 5.0 1.0 **VB19I 18B** 12/18/19 VB19L18B 22. Dibromomethane μg/L 12/18/19 *7*.J.J 23.1,2-Dichlorobenzene U μg/L 1.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B ZJJ U **VB19I 18B** 1.0 12/18/19 12/18/19 VB19L18B ZJJ 24. 1.3-Dichlorobenzene μg/L 1.0 25.1,4-Dichlorobenzene U 1.0 1.0 12/18/19 **VB19L18B** 12/18/19 VB19L18B 7.1.1 ua/L U 5.0 VB19L18B 12/18/19 VB19L18B 26. Dichlorodifluoromethane μg/L 1.0 12/18/19 ZJJ U 27.1,1-Dichloroethane 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B 7.1.1 μg/L 28.1,2-Dichloroethane U μg/L 1.0 1.0 12/18/19 VB19L18B 12/18/19 VB19L18B ZJJ

> 1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

29.1,1-Dichloroethene

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

μg/L

U

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

1.0

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

12/18/19

VB19L18B ZJJ

VB19L18B

12/18/19



Order: 94192 Page: 40 of 74 Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-110S-121219

Chain of Custody:

181434

15:15

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date:

12/12/19

Client Project No:

Ground Water Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by	y GC/MS			Aliq	uot ID:	94192-007F	Matrix: G	round Water		
Method: EPA 5030C/EPA 8260D				Des	cription:	MW-110S-121219				
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q (Jnits	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	1	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
31. trans-1,2-Dichloroethene	U		ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
32.1,2-Dichloropropane	U	1	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
33. cis-1,3-Dichloropropene	U		ug/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
34. trans-1,3-Dichloropropene	U	1	ug/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
35. Ethylbenzene	U		ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
36. Ethylene Dibromide	U	1	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
37.2-Hexanone	U		ug/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
38. Isopropylbenzene	U	1	ug/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
39.4-Methyl-2-pentanone	U		ug/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
40. Methylene Chloride	U		ug/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 41.2-Methylnaphthalene	U		ug/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
42. MTBE	U		ug/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
43. Naphthalene	U		ug/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
44. n-Propylbenzene	U		ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
45. Styrene	U		ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
46.1,1,1,2-Tetrachloroethane	U	1	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
47.1,1,2,2-Tetrachloroethane	U		ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
48. Tetrachloroethene	U	1	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
49. Toluene	U		ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
50.1,2,4-Trichlorobenzene	U	I	ug/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
51.1,1,1-Trichloroethane	U	I	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
52.1,1,2-Trichloroethane	U	I	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
53. Trichloroethene	U	I	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
54. Trichlorofluoromethane	U	I	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
55. 1,2,3-Trichloropropane	U		ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 56.1,2,3-Trimethylbenzene	U	1	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
57. 1,2,4-Trimethylbenzene	U		ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
58.1,3,5-Trimethylbenzene	U	1	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
59. Vinyl Chloride	U	ı	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
60. m&p-Xylene	U	1	ug/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
61. o-Xylene	U	1	ug/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 62. Xylenes	U	1	ug/L	3.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ



Order: 94192 Page: 41 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-110S-121219

Ground Water

Chain of Custody: 181434

12/12/19

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

15:15

Client Project No:
Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	94192-007 MW-110S-121219	Matrix: G	round Water		
						Prepara	ntion	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
3. Aniline	U	V-	μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
4. Anthracene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
19. 4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
23. Chrysene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
25. Dibenzofuran	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
26. 2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
34. Fluorene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP



Order: 94192 Page: 42 of 74 Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-110S-121219 Chain of Custody:

181434

Client Project Name:

1-10860

Ground Water

Collect Date:

12/12/19

Client Project No:

Sample No:

Collect Time:

15:15

Sample Comments:

Definitions:

Sample Matrix:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				-	uot ID:	94192-007	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-110S-121219				
						Prepara			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
43.2-Methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
45. Naphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
46.2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
48. 4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
58. Phenanthrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
59. Phenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
64. 2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
pH, Electrometric				Aliq	uot ID:	94192-007B	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-110S-121219				
						Prepara	tion	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init

pH Units

12.3 H

1.0

NA

NA

12/18/19 15:24 WD19L18A CMB

RSN: 94192-191226133437

1.pH

-1.00



Order: 94192 43 of 74 Page: Date: 12/26/19

Applied Science & Technology, Sample Description: MW-110S-121219 Chain of Custody: 181434 Client Identification: Inc. - Brighton Client Project Name: 1-10860 Collect Date: 12/12/19 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:15 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94192-007B Matrix: Ground Water Method: EPA 9056A Description: MW-110S-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 47000 μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19 WC19L17A VO Residue, Filterable (TDS) Aliquot ID: 94192-007A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-110S-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 50000 1200000 WH19L16C 12/17/19 WH19L16C AMW μg/L 1.3 12/16/19 94192-007C Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Matrix: Ground Water Method: SM 4500-NH3 G-2011 Description: MW-110S-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N 4300 10 12/17/19 PW19L17A 12/17/19 WU19L17B SEM

μg/L

1.0

RSN: 94192-191226133437



11766 E. Grand River

8660 S. Mackinaw Trail

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-008

Order: 94192 Page: 44 of 74 Date: 12/26/19

Applied Science & Technology, MW-110D-121219 Chain of Custody: 181434 Client Identification: Sample Description: Inc. - Brighton 1-10860 Sample No: 12/12/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 16:20 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94192-008D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-110D-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free U mg/L 0.0050 1.0 12/17/19 PW19L17D 12/17/19 WQ19L17C VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94192-008E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-110D-121219 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch Init. U 5.0 PT19L18D CJA 1. Arsenic μg/L 10 12/18/19 12/19/19 T419L19B 2. Barium 520 100 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L 3. Chromium 16 μg/L 10 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 4. Copper 4.0 4.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μq/L 5. Lead U 3.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 10 50 12/18/19 PT19L18D 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 8. Selenium μg/L 5.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA U 10. Vanadium 10 PT19L18D 12/19/19 T419L19B CJA μg/L 4.0 12/18/19 U 11. Zinc μg/L 50 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA Mercury by CVAAS, Total Aliquot ID: 94192-008E Matrix: Ground Water Method: EPA 7470A Description: MW-110D-121219 Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-008 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-110D-121219 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 3. Aroclor-1232 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 6. Aroclor-1254 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L 7. Aroclor-1260 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

T: (810) 220-3300

T: (231) 775-8368

F: (810) 220-3311

F: (231) 775-8584

Brighton, MI 48116

Cadillac, MI 49601



Order: 94192 Page: 45 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-110D-121219

Chain of Custody:

181434

Client Project Name:

1-10860 Sample No:

Collect Date:

12/12/19

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

Sample Matrix:

Ground Water

Collect Time:

‡: Parameter not included in NELAC Scope of Analysis.

16:20

Polychlorinated Biphenyls (PCBs)

Aliquot ID: 94192-008 Matrix: Ground Water

Method: EPA 3510C/EPA 8082A Description: MW-110D-121219

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 8. Aroclor-1262 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK U 9. Aroclor-1268 $\mu g/L$ 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 94192-008F Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-110D-121219

							ration		nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acetone	U		μg/L	50	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
‡ 2. Acrylonitrile	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
3. Benzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
4. Bromobenzene	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
5. Bromochloromethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
6. Bromodichloromethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
7. Bromoform	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
8. Bromomethane	U		μg/L	10	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
9.2-Butanone	U		μg/L	25	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
10. n-Butylbenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
11. sec-Butylbenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
12. tert-Butylbenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ΖJ
13. Carbon Disulfide	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
14. Carbon Tetrachloride	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
15. Chlorobenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
16. Chloroethane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
17. Chloroform	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
18. Chloromethane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
19.2-Chlorotoluene	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
21. Dibromochloromethane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ΖJ
22. Dibromomethane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
23.1,2-Dichlorobenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ΖJ
24.1,3-Dichlorobenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
25.1,4-Dichlorobenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ΖJ
26. Dichlorodifluoromethane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
27.1,1-Dichloroethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
28.1,2-Dichloroethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ
29.1,1-Dichloroethene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ZJ

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Order: 94192 Page: 46 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-110D-121219

Chain of Custody:

181434

Client Project Name: 1-10860

0860

Sample No:

Collect Date:

12/12/19

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

Sample Matrix:

Ground Water

Collect Time:

‡: Parameter not included in NELAC Scope of Analysis.

16:20

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 94192-008F

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-110D-121219

						Prepa		A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
30. cis-1,2-Dichloroethene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	Z
31. trans-1,2-Dichloroethene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	Z
32.1,2-Dichloropropane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	Z
33. cis-1,3-Dichloropropene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	Z
34. trans-1,3-Dichloropropene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	. 2
35. Ethylbenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	. 2
36. Ethylene Dibromide	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	. 2
37.2-Hexanone	U		μg/L	50	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	. 2
38. Isopropylbenzene	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	. 2
39.4-Methyl-2-pentanone	U		μg/L	50	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	. :
40. Methylene Chloride	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
41.2-Methylnaphthalene	U		μg/L	15	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
42. MTBE	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
43. Naphthalene	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
44. n-Propylbenzene	U	L+	μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
45. Styrene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
46. 1,1,1,2-Tetrachloroethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
47. 1,1,2,2-Tetrachloroethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
48. Tetrachloroethene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
49. Toluene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
50.1,2,4-Trichlorobenzene	U		μg/L	10	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
51.1,1,1-Trichloroethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
52. 1,1,2-Trichloroethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
53. Trichloroethene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
54. Trichlorofluoromethane	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
55. 1,2,3-Trichloropropane	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
56. 1,2,3-Trimethylbenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
57. 1,2,4-Trimethylbenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
58. 1,3,5-Trimethylbenzene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	ı
59. Vinyl Chloride	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
60. m&p-Xylene	U		μg/L	5.0	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
61.o-Xylene	U		μg/L	2.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	
62. Xylenes	U		μg/L	7.5	5.0	12/19/19	VM19L19A	12/19/19	VM19L19A	

DCSID: G-610.19 (10/01/19)



Ground Water

Order: 94192 Page: 47 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-110D-121219

Chain of Custody:

181434

Client Project Name: 1-

1-10860

Sample No:

Sample Matrix:

Collect Date:

12/12/19 16:20

Client Project No:

ou...p.c

Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	94192-008	Matrix: Gi	ound Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-110D-121219				
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
3. Aniline	U	V-	μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
4. Anthracene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
23. Chrysene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
25. Dibenzofuran	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
34. Fluorene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP

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Order: 94192 Page: 48 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-110D-121219

Chain of Custody:

181434

Client Project Name: 1-

1-10860

Sample No:

Collect Date:

12/12/19

16:20

Client Project No:

1-10860 Sample Matrix:

Ground Water Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				•	uot ID:	94192-008		round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-110D-12121	9			
						Prepai			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
43.2-Methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
45. Naphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
46.2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
48.4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
58. Phenanthrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
59. Phenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
64. 2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
pH, Electrometric				Aliq	uot ID:	94192-008B	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-110D-121219	9			
_						Prepai	ration	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init

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1.pH

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

12.5

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

NA

NA

-1.00

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

12/18/19 15:34 WD19L18A CMB

RSN: 94192-191226133437



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-008

Order: 94192 Page: 49 of 74 Date: 12/26/19

Analysis

A. Batch

WU19L17B SEM

Init.

A. Date

12/17/19

Applied Science & Technology, Sample Description: MW-110D-121219 Chain of Custody: 181434 Client Identification: Inc. - Brighton Client Project Name: 1-10860 Collect Date: 12/12/19 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 16:20 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94192-008B Matrix: Ground Water Method: EPA 9056A Description: MW-110D-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 38000 μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19 WC19L17A VO Residue, Filterable (TDS) Aliquot ID: 94192-008A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-110D-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids Н WH19L20B 1700000 51000 WH19L20B CMB μg/L 1.3 12/20/19 12/23/19 94192-008C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-110D-121219

Reporting Limit

10

Dilution

1.0

DCSID: G-610.19 (10/01/19)

Result

3600

Q

Units

μg/L

RSN: 94192-191226133437

Preparation

P. Batch

PW19L17A

P. Date

12/17/19



1914 Holloway Drive

11766 E. Grand River

8660 S. Mackinaw Trail

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-009

Order: 94192 Page: 50 of 74 Date: 12/26/19

Applied Science & Technology, Chain of Custody: 181434 Client Identification: Sample Description: MW-101-121219 Inc. - Brighton 1-10860 Sample No: 12/12/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 16:15 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94192-009D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-101-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 1.7 mg/L 0.050 10 12/17/19 PW19L17D 12/17/19 WQ19L17C VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94192-009E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-101-121219 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch Init. 6.0 5.0 PT19L18D CJA 1. Arsenic μg/L 10 12/18/19 12/19/19 T419L19B 2. Barium 120 100 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L 3. Chromium U μg/L 10 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 4. Copper U 4.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μq/L 5. Lead 11 3.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L 10 54 50 12/18/19 PT19L18D 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 8. Selenium μg/L 5.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA U 10. Vanadium 10 PT19L18D 12/19/19 T419L19B CJA μg/L 4.0 12/18/19 U 11. Zinc μg/L 50 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA Mercury by CVAAS, Total Aliquot ID: 94192-009E Matrix: Ground Water Method: EPA 7470A Description: MW-101-121219 Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-009 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-101-121219 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 3. Aroclor-1232 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 6. Aroclor-1254 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L 7. Aroclor-1260 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK

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Brighton, MI 48116

Cadillac, MI 49601



Order: 94192 51 of 74 Page: Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-101-121219 Chain of Custody:

181434

Client Project Name:

1-10860

Sample No:

Collect Date:

12/12/19

Client Project No:

Collect Time:

16:15

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

Sample Matrix:

‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Method: EPA 5030C/EPA 8260D

Aliquot ID:

Ground Water

94192-009

Matrix: Ground Water

Description: MW-101-121219

					Prepa	ration	Analysis		
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B	RDK
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B	RDK

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

94192-009F

Matrix: Ground Water

Description: MW-101-121219

10tilod: El 7t 00000/El 7t 02000					1144-101-121213				
					Prepa	ration	А	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
1. Acetone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
2. Acrylonitrile	U	μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
3. Benzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
4. Bromobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
5. Bromochloromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
6. Bromodichloromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
7. Bromoform	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
8. Bromomethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Zι
9.2-Butanone	U	μg/L	25	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
10. n-Butylbenzene	3.2	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
11. sec-Butylbenzene	1.9	E1 μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
12. tert-Butylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
13. Carbon Disulfide	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
14. Carbon Tetrachloride	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
15. Chlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
16. Chloroethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
17. Chloroform	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
18. Chloromethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
19.2-Chlorotoluene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
20.1,2-Dibromo-3-chloropropane (SIM)	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
21. Dibromochloromethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
22. Dibromomethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
23.1,2-Dichlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
24. 1,3-Dichlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
25.1,4-Dichlorobenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
26. Dichlorodifluoromethane	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
27.1,1-Dichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
28.1,2-Dichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
29. 1,1-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	7

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Order: 94192 52 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-101-121219

Ground Water

Chain of Custody:

181434

1-10860 Client Project Name:

Sample No:

Collect Date: Collect Time: 12/12/19 16:15

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	y GC/MS		•	uot ID: cription:	94192-009F MW-101-121219	Matrix: G	round Water		
					Prepar	ration	Ar	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
31. trans-1,2-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
32.1,2-Dichloropropane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
33. cis-1,3-Dichloropropene	U	μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
34. trans-1,3-Dichloropropene	U	μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
35. Ethylbenzene	5.9	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
36. Ethylene Dibromide	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
37.2-Hexanone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
38. Isopropylbenzene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
39. 4-Methyl-2-pentanone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
40. Methylene Chloride	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 41.2-Methylnaphthalene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
42. MTBE	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
43. Naphthalene	11	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
44. n-Propylbenzene	4.3	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
45. Styrene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
46.1,1,1,2-Tetrachloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
47.1,1,2,2-Tetrachloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
48. Tetrachloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
49. Toluene	1.7	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
50.1,2,4-Trichlorobenzene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
51.1,1,1-Trichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
52.1,1,2-Trichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
53. Trichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
54. Trichlorofluoromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
55.1,2,3-Trichloropropane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 56.1,2,3-Trimethylbenzene	29	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
57.1,2,4-Trimethylbenzene	51	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
58.1,3,5-Trimethylbenzene	13	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
59. Vinyl Chloride	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
60. m&p-Xylene	28	μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
61.o-Xylene	13	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 62. Xylenes	41	μg/L	3.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ



Order: 94192 Page: 53 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-101-121219

Ground Water

Chain of Custody:

181434

Client Project Name: 1-10860

60 Sample No:

Collect Date:
Collect Time:

12/12/19 16:15

Client Project No:
Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Parameter(s) Result Q	Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	94192-009	Matrix: G	round Water		
Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init	Method: EPA 3510C/EPA 8270E				Des	cription:	MW-101-121219				
1. Acenaphthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 2. Acenaphthylene U V μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 3. Aniline U V μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 4. Anthracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 5. Arcbertzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 6. Benzo(a)anthracene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 7. Benzo(a)aphtracene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 8. Benzo(b)fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 8. Benzo(b)fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 11. Benzo(k)fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 12. Benzo(k)fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 12. Belz-chloroethoy/methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 13. Bis(z-chloroethyy)hethane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(z-chloroethyy)hethane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(z-chloroethyy)hether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(z-chloroethyy)hether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(z-chloroethyy)hether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(z-chloroethyy)hether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(z-chloroethyy)hether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(z-chloroethyy)hether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(z-chloroethyy)hether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(z-chloroethyy)hether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Chloro-S-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Chloro-Ghenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. Chlororophynlalene U μg/L 5.0 1							Prepar	ation	Ar	nalysis	
2. Acenaphthylene U	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
3. Aniline U V- Ig/L 4. Anthracene U U Jg/L 5. O 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 5. Azobenzene U Jg/L 5. O 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 6. Benzo(a)anthracene U Jg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 7. Benzo(a)gyrene U Jg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 7. Benzo(a)gyrene U Jg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 9. Benzo(a)gyrene U Jg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 9. Benzo(a)gyrene U Jg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 10. Benzo(a)gyrene U Jg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 11. Benzyl Alcohol U Jg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 12. Bis(2-chloroethoxylmethane U Jg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 12. Bis(2-chloroethylphehor) U Jg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 13. Bis(2-chloroethylphehor) U Jg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 15. 4-Bromophenyl Phenylether U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 15. 4-Bromophenyl Phenylether U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 16. Buyl Benzyl Phthalate U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 16. Buyl Benzyl Phthalate U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 16. Carbazole U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Carbazole U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 21. 2-Chlorophenol U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 2-Chlorophenol U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chlorophenyl Phenylether U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzo(a) PS19L18E 12/19/19 S519L19B GJP 26. C-Chlorophenyl Phenylether U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. C-Chlorophenyl Phenylether U Jg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24.	1. Acenaphthene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
4. Arthracone U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 5. Azobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 6. Benzo(a)anthracene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 8. Benzo(ph)ucranthene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 9. Benzo(ph)ucranthene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 10. Benzo(ph)ucranthene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 11. Benzy Alcohol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 12. Bis(2-chloroethtox)methate U µg/L 5.0 1.0 12/18/19 PS19L18E	2. Acenaphthylene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
± 5. Azobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 6. Benzo(a)anthracene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 7. Benzo(a)pyrene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 9. Benzo(h)fluoranthene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 10. Benzo(h)fluoranthene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 11. Benzy (Alcohol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 12. Bis(2-chloreothoxymethane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 14. Bis(2-chloreothoxymethane U µg/L 5.0 1.0 12/18/19 PS19L	3. Aniline	U	V-	μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
6. Benzo(a)anthracene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 7. Benzo(a)pyrene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 8. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 9. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 10. Benzo(b)fluoranthene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 11. Benzo(b)fluoranthene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 11. Benzo(b)fluoranthene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 13. Bis(2-chlorecthoxy)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 13. Bis(2-chlorecthoxy)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 14. Bis(2-chlorecthoxy)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 14. Bis(2-chlorecthy)ether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 14. Bis(2-chlorecthy)ether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 14. Bis(2-chlorecthy)ether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 15.4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 17. Di-h-butyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 17. Di-h-butyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 18. Chloroo-3-methylphenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 19. 4-Chloroo-3-methylphenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 20. 2-Chloronaphthalene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 21. 2-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 22. 2-Chlorophyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 23. Chlorophyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 23. Chlorophyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 23. Chlorophyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 23. Chlorophyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B QJP 23. Chlor	4. Anthracene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
7. Benzo(a)pyrene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 8. Benzo(phillouranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 9. Benzo(phillouranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 11. Benzyl Alcohol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 12. Bis(2-chlorethy)inthale U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 13. Bis(2-chlorethy)iphthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 15 Bromophenyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/18/19	‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
8. Benzo(pi)fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 9. Benzo(ghi)perylene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 10. Benzo(ghi)perylene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 11. Benzy (Alcohol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 12. Bis(2-chloroethxy)methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 13. Bis(2-chloroethxy)methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 13. Bis(2-chloroethxy)methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 13. Bis(2-chloroethy)teher U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(2-chloroethy)teher U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 16. Bulyl Benzyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 17. Di-n-bulyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 17. Di-n-bulyl Pthhalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chlysene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a/h)anthracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a/h)anthracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzo(a/h)anthracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzo(a/h)anthracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzo(a/h)anthracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzo(a/h)anthracene U μg/L 5.0 1.0 12/	6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
9. Benzo(ghi)perylene U µg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 10. Benzo(k)(Ilucranthene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 11. Benzyl Alcohol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 12. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 13. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(2-chloroethy)lether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 20.2-Chloroophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chloroophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chloroophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chnysene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chnysene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Chloroophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2-Chlorhoophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2-Chlorhoophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2-Chlorhoophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2-Chlorhoophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2-Chlorhoophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2-Chlorhophenol U µg/L 5.0 1.0 12/18/19 PS1	7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
10. Benzo(k)fluoranthene U μg/L 11. Benzy/ Alcohol U μg/L 12. Bis(2-chloroethoxy)methane U μg/L 13. Bis(2-chloroethoxy)methane U μg/L 14. Bis(2-chloroethoxy)methane U μg/L 15. 0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Bis(2-chloroethoxy)methane U μg/L 19. 10 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Bis(2-chloroethoxy)methane U μg/L 19. 10 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Bis(2-chloroethoxy)methane U μg/L 19. 10 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Bis(2-chloroethoxy)methane U μg/L 19. 10 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Albromophenyl Phenylether U μg/L 19. 10 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Albromophenyl Phenylether U μg/L 19. 10 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Carbazole U μg/L 19. 10 12/18/19 PS19L18E 12/19/19 S519L19B GJP 19. 4-Chloro-3-methylphenol U μg/L 19. 10 12/18/19 PS19L18E 12/19/19 S519L19B GJP 20. 2-Chloromaphthalene U μg/L 19. 10 12/18/19 PS19L18E 12/19/19 S519L19B GJP 21. 2-Chlorophenyl Phenylether U μg/L 19. 10 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chlorophenyl Phenylether U μg/L 19. 10 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chlorophenyl Phenylether U μg/L 10 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U μg/L 20. 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzo(a,h)anthracene U μg/L 20. 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzo(a,h)anthracene U μg/L 25. 0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzo(a,h)anthracene U μg/L 20. 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2-L-Dichlorophenol U μg/L 20. 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2-L-Dichlorophenol U μg/L 20. 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2-L-Dichlorophenol U μg/L 20. 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 20. 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2-L-Dichlorophenol U μg/L 20. 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2-L-Dichlorophenol U μg/L 20. 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 2	8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
11. Benzyl Alcohol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 12. Bis(2-chloroethxy)methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 13. Bis(2-chloroethyy)hether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 14. Bis(2-chlyhexy)lphthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 15.4 Bromophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 15.4 Bromophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 20.2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 21.2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 2-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzoturan U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzoturan U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2-A-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30.2-A-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. PLOVATHENE U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. C-A-Dimitrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. C-A-Dimitrop	9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
12. Bis(2-chloroethoxy)methane	10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
13. Bis(2-chloroethyl)ether	11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chrysene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U μg/L 24. Dibenzo(a,h)anthracene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dimitrofloluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2,4-Dimitrofloluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobutadiene U μg/L 50 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 17. Din-butyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chrysene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2-4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2-4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2-4-Dinitrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2-4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Flororathene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Flororathene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5	13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP ‡ 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 23. Chrysene U μg/L 10 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 24. Dibenzo(a,h)anthracene U μg/L 25. Dibenzofuran U μg/L 40 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 30. 2,4-Dinitrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 31. 2,4-Dinitrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 33. Fluorenthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 34. Fluorene U μg/L 50 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP 35. Hexachloroboutadiene U μg/L 50 1.0 12/18/19 PS19L18E 12/19/19 S519L198 GJP	14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
17. Di-n-butyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chrysene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dinitrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 18. Carbazole U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22. 4-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chrysene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U μg/L	16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
19.4-Chloro-3-methylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 20.2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 21.2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chrysene U μg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dinitrophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
20.2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 21.2-Chlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chrysene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzofuran U μg/L 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L	‡ 18. Carbazole	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
21.2-Chlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 22.4-Chlorophenyl Phenylether U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chrysene U µg/L 1.0 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U µg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2,4-Dimethylphenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dinitrophenol U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2,4-Dinitrotoluene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 32. 2,6-Dinitrotoluene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 23. Chrysene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dimitrophenol U	20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
23. Chrysene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2,4-Dinitrotoluene U <t< td=""><td>21.2-Chlorophenol</td><td>U</td><td></td><td>μg/L</td><td>5.0</td><td>1.0</td><td>12/18/19</td><td>PS19L18E</td><td>12/19/19</td><td>S519L19B</td><td>GJP</td></t<>	21.2-Chlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 32. 2,6-Dinitrotoluene U <td>22.4-Chlorophenyl Phenylether</td> <td>U</td> <td></td> <td>μg/L</td> <td>5.0</td> <td>1.0</td> <td>12/18/19</td> <td>PS19L18E</td> <td>12/19/19</td> <td>S519L19B</td> <td>GJP</td>	22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
25. Dibenzofuran U μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	23. Chrysene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
26.2,4-Dichlorophenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2,4-Dimethyl phenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U	24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/	25. Dibenzofuran	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
28.2,4-Dimethylphenol U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 29.Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30.2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31.2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 32.2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33.Fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34.Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35.Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36.Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
29. Dimethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
30.2,4-Dinitrophenol U μg/L 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 31.2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 32.2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
33. Fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
33. Fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34. Fluorene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
35. Hexachlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	33. Fluoranthene	U			1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP	34. Fluorene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
	35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
	36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
	37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP



Order: 94192 54 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

MW-101-121219 Sample Description:

Ground Water

Chain of Custody:

181434

Client Project Name: 1-10860 Sample No:

Collect Date:

12/12/19

Client Project No: 1-10860

Sample Matrix:

Collect Time: 16:15

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				•	uot ID:	94192-009	Matrix:	Ground Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-101-121219				
Darameter(s)	Result	Q	Units	Departing Limit	Dilution	Prepara P. Date	ation P. Batch	An A. Date	alysis A. Batch	Init
Parameter(s)				Reporting Limit	Dilution					
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19		
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
43.2-Methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
45. Naphthalene	7.0		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
46.2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
48.4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJ
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
58. Phenanthrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
59. Phenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJI
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19		
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19		
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19		GJI
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	
pH, Electrometric				Aliq	uot ID:	94192-009B	Matrix:	Ground Water		
Method: EPA 9040C				-		MW-101-121219				
					•		ation	۸۵	alveie	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepara P. Date	P. Batch	A. Date	alysis A. Batch	Init
1.pH	11.3	Н	pH Units	-1.00	1.0	NA	NA	12/18/19 15:45	WD19L18A	СМ

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

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Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-009

Order: 94192 Page: 55 of 74 Date: 12/26/19

Analysis

A. Batch

WU19L17B SEM

Init.

A. Date

12/17/19

Applied Science & Technology, Sample Description: MW-101-121219 Chain of Custody: 181434 Client Identification: Inc. - Brighton Client Project Name: 1-10860 Collect Date: 12/12/19 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 16:15 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94192-009B Matrix: Ground Water Method: EPA 9056A Description: MW-101-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 55000 μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19 WC19L17A VO Residue, Filterable (TDS) Aliquot ID: 94192-009A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-101-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids Н 50000 WH19L20B 500000 WH19L20B CMB μg/L 1.3 12/20/19 12/23/19 94192-009C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-101-121219

Reporting Limit

10

Dilution

1.0

Result

3800

Q

Units

μg/L

Preparation

P. Batch

PW19L17A

P. Date

12/17/19



Order: Page: Date:

94192 56 of 74 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

TMW-26-121219 Sample Description:

Chain of Custody:

181434

1-10860 Client Project Name:

Sample No:

Result

U

140

33

12

U

U

U

U

U

U

U

Q

Units

μg/L

μg/L

μg/L

μq/L

μg/L

μg/L

μg/L

μg/L

μg/L

μg/L

μg/L

Collect Date:

12/12/19

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

Ground Water

Aliquot ID:

Collect Time:

10:45

Parameter(s)

1. Arsenic

2. Barium

4. Copper

5. Lead

7. Nickel

9. Silver

11. Zinc

8. Selenium

10. Vanadium

3. Chromium

6. Manganese

Sample Matrix:

‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water

Cyanide, Free (without distillation)

Method: ASTM D7237-10

Description: TMW-26-121219

94192-010D

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.013 mg/L 0.0050 1.0 12/17/19 PW19L17D 12/17/19 WQ19L17C VO

Reporting Limit

5.0

100

10

4.0

3.0

50

20

5.0

0.20

4.0

50

10

10

10

10

Trace Elements by ICP/MS, Total Recoverable

Aliquot ID:

94192-010E

12/18/19

12/18/19

12/18/19

12/18/19

Matrix: Ground Water

T419L19B CJA

T419L19B CJA

T419L19B CJA

T419L19B CJA

Method: EPA 3005A (Total Recoverable)/EPA 6020A

Description: TMW-26-121219

Preparation Analysis A. Batch Dilution P. Batch A. Date P. Date PT19L18D T419L19B CJA 10 12/18/19 12/19/19 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 10 PT19L18D 12/19/19 T419L19B CJA 12/18/19 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA

12/19/19

12/19/19

12/19/19

12/19/19

PT19L18D

PT19L18D

PT19L18D

PT19L18D

Mercury by CVAAS, Total Aliquot ID: 94192-010E **Matrix: Ground Water** Method: EPA 7470A Description: TMW-26-121219

Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution P. Date A. Date Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH

Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-010 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: TMW-26-121219

				-				
					Preparation		A	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B RDF
2. Aroclor-1221	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B RD
3. Aroclor-1232	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B RD
4. Aroclor-1242	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B RDF
5. Aroclor-1248	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B RDF
6. Aroclor-1254	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B RDF
7. Aroclor-1260	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B RDF

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Order: Page: Date:

94192 57 of 74 12/26/19

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: TMW-26-121219

Chain of Custody:

181434

Client Project Name:

1-10860

Sample No:

Collect Date:

12/12/19

Client Project No:

1-10860

Sample Matrix: **Ground Water** Collect Time:

10:45

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

94192-010

Description: TMW-26-121219

Matrix: Ground Water

Method: EPA 3510C/EPA 8082A

Polychlorinated Biphenyls (PCBs)

					Preparation Analysis				
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B	RDK
+ Q Arador 1269	- 11	ua/l	0.20	1.0	12/10/10	DC10I 10A	12/21/10	SE101 21B	DUK

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D

Aliquot ID:

Aliquot ID:

94192-010F

Matrix: Ground Water

Description: TMW-26-121219

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
1. Acetone	U		μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
2. Acrylonitrile	U		μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
3. Benzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
4. Bromobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
5. Bromochloromethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
6. Bromodichloromethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	2
7. Bromoform	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	2
8. Bromomethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	2
9.2-Butanone	U		μg/L	25	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	:
10. n-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
11. sec-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
12. tert-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
13. Carbon Disulfide	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
15. Chlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
16. Chloroethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
17. Chloroform	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
18. Chloromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
19.2-Chlorotoluene	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
21. Dibromochloromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
22. Dibromomethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
24. 1,3-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	

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Order: 94192 58 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: TMW-26-121219

Chain of Custody:

181434

1-10860 Client Project Name:

Sample No:

Collect Date:

12/12/19

1-10860 Client Project No:

Sample Matrix:

Ground Water Collect Time:

10:45

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	GC/MS		•	uot ID:	94192-010F TMW-26-121219	Matrix: G	round Water		
metriod. El A 3030G/El A 0230D				oription.		ration	Λ.		
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	Prepa P. Date	P. Batch	A. Date	nalysis A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
31. trans-1,2-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
32.1,2-Dichloropropane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
33. cis-1,3-Dichloropropene	U	μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
34. trans-1,3-Dichloropropene	U	μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
35. Ethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
36. Ethylene Dibromide	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
37.2-Hexanone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
38. Isopropylbenzene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
39.4-Methyl-2-pentanone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
40. Methylene Chloride	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 41.2-Methylnaphthalene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
42.MTBE	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
43. Naphthalene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
44. n-Propylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
45. Styrene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
46.1,1,1,2-Tetrachloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
47.1,1,2,2-Tetrachloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
48. Tetrachloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
49. Toluene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
50.1,2,4-Trichlorobenzene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
51.1,1,1-Trichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
52.1,1,2-Trichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
53. Trichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
54. Trichlorofluoromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
55.1,2,3-Trichloropropane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 56.1,2,3-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
57.1,2,4-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
58.1,3,5-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
59. Vinyl Chloride	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
60. m&p-Xylene	U	μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
61. o-Xylene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 62. Xylenes	U	μg/L	3.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ

RSN: 94192-191226133437



Order: 94192 Page: 59 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: TMW-26-121219

Ground Water

Chain of Custody:

181434

Client Project Name: 1-10860

860

Collect Date:

12/12/19

10:45

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample No:

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	94192-010	Matrix: G	ound Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	TMW-26-121219				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
3. Aniline	U	V-	μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
4. Anthracene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
23. Chrysene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
25. Dibenzofuran	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
27. Diethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
34. Fluorene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
35. Hexachlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP

DCSID: G-610.19 (10/01/19)



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Date: 12

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Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: 1

NA: Not Applicable

TMW-26-121219 Chain of Custody:

‡: Parameter not included in NELAC Scope of Analysis.

181434

Client Project Name: 1-

1-10860

Sample No: Sample Matrix: Collect Date:

12/12/19

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Ground Water

Collect Time: 10:45

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 94192-010 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: TMW-26-121219 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 38. Hexachloroethane U Lμg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 39. Indeno(1,2,3-cd)pyrene U μg/L 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519I 19B GJP 40. Isophorone U 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U 41.2-Methyl-4,6-dinitrophenol 20 1.0 12/18/19 PS19I 18F 12/19/19 S519I 19B GJP μg/L 42.2-Methylnaphthalene U 5.0 12/18/19 PS19L18E 12/19/19 S519L19B μg/L 1.0 u 5.0 PS19I 18F 12/19/19 43.2-Methylphenol μg/L 10 12/18/19 S519L19B GJP ‡ 44.3&4-Methylphenol U μg/L 10 1.0 12/18/19 PS19L18E 12/19/19 S519L19B 45. Naphthalene u 5.0 PS19I 18F 12/19/19 S519L19B GJP μg/L 10 12/18/19 46.2-Nitroaniline U 20 1.0 12/18/19 PS19I 18F 12/19/19 S519L19B GJP ua/L U 47.3-Nitroaniline 20 μg/L 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 48.4-Nitroaniline U 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L 49. Nitrobenzene U μg/L 3.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 5.0 1.0 PS19L18E 12/19/19 S519L19B 50.2-Nitrophenol μg/L 12/18/19 GJP 51.4-Nitrophenol u 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U PS19L18E 12/19/19 52. N-Nitrosodimethylamine 5.0 1.0 12/18/19 S519I 19B GJP μg/L 53. N-Nitrosodi-n-propylamine U 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U 54. N-Nitrosodiphenylamine 5.0 10 12/18/19 PS19I 18F 12/19/19 S519L19B GJP μg/L U 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B 55. Di-n-octyl Phthalate μg/L 56.2,2'-Oxybis(1-chloropropane) U 1 -5.0 1.0 12/18/19 PS19I 18F 12/19/19 S519L19B GJP μg/L U 57. Pentachlorophenol μg/L 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 58. Phenanthrene 2.0 1.0 PS19L18E μg/L 12/18/19 12/19/19 S519L19B GJP U 59. Phenol μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 60. Pyrene μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 61. Pyridine U 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L 62.1,2,4-Trichlorobenzene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 63.2,4,5-Trichlorophenol 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L 64.2,4,6-Trichlorophenol U μg/L 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP Aliquot ID: pH, Electrometric 94192-010B Matrix: Ground Water Method: EPA 9040C Description: TMW-26-121219 Analysis

Preparation Result Q Units Reporting Limit P. Date P. Batch A. Date A. Batch Parameter(s) Dilution 12/18/19 15:42 WD19L18A CMB 11.7 Н -1.00 NA NA 1.pH pH Units 10



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-010

Order: 94192 Page: 61 of 74 Date: 12/26/19

Analysis

A. Batch

WU19L17B SEM

Init.

A. Date

12/17/19

Applied Science & Technology, Sample Description: TMW-26-121219 Chain of Custody: 181434 Client Identification: Inc. - Brighton Client Project Name: 1-10860 Collect Date: 12/12/19 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:45 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94192-010B Matrix: Ground Water Method: EPA 9056A Description: TMW-26-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Chloride μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19 WC19L17A VO Residue, Filterable (TDS) Aliquot ID: 94192-010A Matrix: Ground Water Method: SM 2540 C-2011 Description: TMW-26-121219 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids Н WH19L20B 710000 51000 WH19L20B CMB μg/L 1.3 12/20/19 12/23/19 94192-010C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: TMW-26-121219

Reporting Limit

10

Dilution

1.0

DCSID: G-610.19 (10/01/19)

Result

2700

Q

Units

μg/L

RSN: 94192-191226133437

Preparation

P. Batch

PW19L17A

P. Date

12/17/19



8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-011

Order: 94192 Page: 62 of 74 Date: 12/26/19

Applied Science & Technology, DUP-MW Chain of Custody: 181435 Client Identification: Sample Description: Inc. - Brighton 1-10860 12/12/19 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: NA Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94192-011D Matrix: Ground Water Method: ASTM D7237-10 Description: DUP-MW Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free U mg/L 0.0050 1.0 12/17/19 PW19L17D 12/17/19 WQ19L17C VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94192-011E Matrix: Ground Water Description: DUP-MW Method: EPA 3005A (Total Recoverable)/EPA 6020A Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch U 5.0 PT19L18D CJA 1. Arsenic μg/L 10 12/18/19 12/19/19 T419L19B 2. Barium 290 100 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L 3. Chromium 47 μg/L 10 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 4. Copper 13 4.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μq/L U 5. Lead 3.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 10 50 12/18/19 PT19L18D 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 8. Selenium μg/L 5.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA U 10. Vanadium 10 PT19L18D 12/19/19 T419L19B CJA μg/L 4.0 12/18/19 U 11. Zinc μg/L 50 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA Mercury by CVAAS, Total Aliquot ID: 94192-011E Matrix: Ground Water Method: EPA 7470A **Description: DUP-MW** Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-011 Matrix: Ground Water Description: DUP-MW Method: EPA 3510C/EPA 8082A Preparation Analysis Reporting Limit P. Batch Parameter(s) Result Ω Units Dilution P. Date A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 3. Aroclor-1232 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 6. Aroclor-1254 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L 7. Aroclor-1260 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311

F: (231) 775-8584

T: (231) 775-8368



Ground Water

Order: 94192 Page: 63 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: DUP-MW

Chain of Custody:

181435

Client Project Name: 1-10860

60 Sample No:

Collect Date:
Collect Time:

12/12/19

Client Project No:

Sample Comments:

Parameter(s)

8. Aroclor-1262

9. Aroclor-1268

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

NA

Polychlorinated Biphenyls (PCBs)
Aliquot ID: 94192-011 Matrix: Ground Water
Method: EPA 3510C/EPA 8082A
Description: DUP-MW

Units

μg/L

 $\mu g/L$

NA: Not Applicable

lethod: EPA 3510C/EPA 8082A Description: DUP-MW

U

U

Q

Result

Preparation Analysis Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK

‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 94192-011F

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D

Description: DUP-MW

etilod. EPA 3030C/EPA 3200D Description. DOF-W

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
3. Benzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
4. Bromobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
5. Bromochloromethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
6. Bromodichloromethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
7. Bromoform	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
8. Bromomethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
9.2-Butanone	U		μg/L	25	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
10. n-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
11. sec-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
12. tert-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
13. Carbon Disulfide	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
15. Chlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
16. Chloroethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
17. Chloroform	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
18. Chloromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
19.2-Chlorotoluene	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
21. Dibromochloromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
22. Dibromomethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 94192 Page: 64 of 74 Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: **DUP-MW**

Chain of Custody:

181435

Client Project Name: 1-10860

Sample No:

Collect Date:

12/12/19

Client Project No:

Sample Matrix: **Ground Water** Collect Time:

NA

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS	
Method: EPA 5030C/EPA 8260D	ı

Aliquot ID:	94192-011F	Matrix: Ground Water
Description:	DUP-MW	

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
35. Ethylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
36. Ethylene Dibromide	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
37.2-Hexanone	U		μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
38. Isopropylbenzene	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
39.4-Methyl-2-pentanone	U		μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
40. Methylene Chloride	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
41.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
42. MTBE	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
43. Naphthalene	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
44. n-Propylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
45. Styrene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
46.1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
47.1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
48. Tetrachloroethene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
49. Toluene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
50.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
52.1,1,2-Trichloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
53. Trichloroethene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
55.1,2,3-Trichloropropane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
56.1,2,3-Trimethylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
57.1,2,4-Trimethylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
58.1,3,5-Trimethylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
59. Vinyl Chloride	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
60. m&p-Xylene	U		μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
61. o-Xylene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
62. Xylenes	U		μg/L	3.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z

RSN: 94192-191226133437



Order: 94192 Page: 65 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: DUP-MW

Chain of Custody:

181435

Client Project Name: 1

1-10860

Sample No:

Collect Date:

12/12/19

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see d

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 94192-011 Matrix: Ground Water Method: EPA 3510C/EPA 8270E Description: DUP-MW Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 1. Acenaphthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 2. Acenaphthylene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 3. Aniline U V-4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U PS19L18E 12/19/19 4 Anthracene 5.0 1.0 12/18/19 S519I 19B GJP μg/L 5. Azobenzene U 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U PS19I 18F 6. Benzo(a)anthracene μg/L 10 1.0 12/18/19 12/19/19 S519L19B GJP 7. Benzo(a)pyrene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B U PS19I 18F 12/19/19 S519L19B GJP 8. Benzo(b)fluoranthene μg/L 10 1.0 12/18/19 U 9. Benzo(ghi)perylene 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP ua/L U 10. Benzo(k)fluoranthene μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 11. Benzyl Alcohol 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L 12. Bis(2-chloroethoxy)methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 1.0 PS19L18E 12/19/19 S519L19B GJP 13. Bis(2-chloroethyl)ether ua/L 10 12/18/19 14. Bis(2-ethylhexyl)phthalate U 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U 5.0 1.0 PS19I 18F 12/19/19 S519L19B GJP 15.4-Bromophenyl Phenylether 12/18/19 μg/L U 12/18/19 PS19L18E 12/19/19 S519L19B 16. Butyl Benzyl Phthalate μg/L 5.0 1.0 GJP U 17. Di-n-butyl Phthalate 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U PS19L18E 12/19/19 S519L19B ‡ 18. Carbazole μg/L 5.0 1.0 12/18/19 GJP 19.4-Chloro-3-methylphenol U 5.0 1.0 12/18/19 PS19I 18F 12/19/19 S519L19B GJP μg/L U 20.2-Chloronaphthalene μg/L 5.0 1.0 12/18/19 PS19I 18F 12/19/19 S519L19B GJP U 12/19/19 21.2-Chlorophenol 5.0 1.0 PS19L18E μg/L 12/18/19 S519L19B GJP 22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 23. Chrysene μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP GJP 24. Dibenzo(a,h)anthracene U 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B μq/L U 25. Dibenzofuran 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L 26. 2,4-Dichlorophenol U 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L 27. Diethyl Phthalate U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 5.0 1.0 PS19L18E 12/19/19 GJP 28. 2,4-Dimethylphenol μg/L 12/18/19 S519L19B 29. Dimethyl Phthalate U 5.0 1.0 PS19L18E 12/19/19 S519L19B μg/L 12/18/19 30.2,4-Dinitrophenol U 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U 31.2,4-Dinitrotoluene μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 32.2.6-Dinitrotoluene μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 34. Fluorene μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U 5.0 1.0 PS19L18E 12/19/19 S519L19B GJP μg/L 12/18/19 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U V-5.0 PS19L18E 12/19/19 S519L19B GJP 37. Hexachlorocyclopentadiene μg/L 1.0 12/18/19

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DCSID: G-610.19 (10/01/19)

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Date: 12

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Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: **DUP-MW**

Chain of Custody:

181435

Client Project Name: 1-10860

1860

Collect Date:

12/12/19

NA

Client Project No:

Ground Water Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample No:

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				-	uot ID:	94192-011 DUP-MW	Matrix:	Ground Water		
Method. EFA 33100/EFA 8270E				Des	cription.	Prepar	ration	Δn	alysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
43. 2-Methylphenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
45. Naphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
46. 2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
48.4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
50.2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
58. Phenanthrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
59. Phenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJP
pH, Electrometric				Aliquot ID:		94192-011B	Matrix:	Ground Water		
Method: EPA 9040C				Des	cription:	DUP-MW				
						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1.pH	12.4	Н	pH Units	-1.00	1.0	NA	NA	12/18/19 15:53	WD19L18A	CMB

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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: DUP-MW Chain of Custody:

181435

Client Project Name:

1-10860

Sample No:

Collect Date:

12/12/19

Client Project No:

1-10860

Sample Matrix:

Ground Water

Aliquot ID:

Collect Time:

NA

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water

Inorganic Anions by IC Method: EPA 9056A

Description: DUP-MW

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WC19L17A VO 1. Chloride 48000 μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19

Residue, Filterable (TDS)

Aliquot ID:

94192-011A

94192-011B

Matrix: Ground Water

Method: SM 2540 C-2011 Description: DUP-MW

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids Н 50000 WH19L20B 1200000 1.3 12/20/19 WH19L20B CMB μg/L 12/23/19

Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011

Aliquot ID:

94192-011C

Matrix: Ground Water

Description: DUP-MW

				Prepara		ıration	on Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Ammonia-N	4300		μg/L	10	1.0	12/17/19	PW19L17A	12/17/19	WU19L17B	SEM



1914 Holloway Drive

11766 E. Grand River

8660 S. Mackinaw Trail

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-012

Order: 94192 Page: 68 of 74 Date: 12/26/19

Applied Science & Technology, Chain of Custody: 181435 Client Identification: Sample Description: MW-105-121119 Inc. - Brighton 1-10860 Sample No: 12/11/19 Client Project Name: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:15 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 94192-012D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-105-121119 Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.17 mg/L 0.025 5.0 12/17/19 PW19L17D 12/17/19 WQ19L17C VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 94192-012E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-105-121119 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution Result P. Date P. Batch A. Date A. Batch Init. 5.0 PT19L18D CJA 1. Arsenic 8.4 μg/L 10 12/18/19 12/19/19 T419L19B 2. Barium U 100 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L 3. Chromium U μg/L 10 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 4. Copper U 4.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μq/L 5. Lead 3.4 3.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 10 50 12/18/19 PT19L18D 12/19/19 T419L19B CJA 6. Manganese μg/L 7. Nickel U 20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA μg/L U 8. Selenium μg/L 5.0 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 9. Silver U μg/L 0.20 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA 10. Vanadium 9.3 10 PT19L18D 12/19/19 T419L19B CJA μg/L 4.0 12/18/19 U 11. Zinc μg/L 50 10 12/18/19 PT19L18D 12/19/19 T419L19B CJA Mercury by CVAAS, Total Aliquot ID: 94192-012E Matrix: Ground Water Method: EPA 7470A Description: MW-105-121119 Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury U μg/L 0.20 1.0 12/18/19 PM19L18A 12/18/19 M719L18A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 94192-012 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-105-121119 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 2. Aroclor-1221 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 3. Aroclor-1232 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L 4. Aroclor-1242 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK 6. Aroclor-1254 U 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK μg/L 7. Aroclor-1260 U μg/L 0.20 1.0 12/19/19 PS19L19A 12/21/19 SF19L21B RDK

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T: (231) 775-8368

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F: (231) 775-8584

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Brighton, MI 48116

Cadillac, MI 49601



Order: 94 Page: 69 Date: 12

94192 69 of 74 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-105-121119

Sample Matrix:

Chain of Custody:

181435

Client Project Name: 1-1

1-10860 Sample No:

Collect Date:

12/11/19 14:15

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Method: EPA 5030C/EPA 8260D

Aliquot ID:

Ground Water

94192-012

Matrix: Ground Water

Description: MW-105-121119

		Units	Reporting Limit	Dilution	Preparation		Analysis		
Parameter(s)	Result Q				P. Date	P. Batch	A. Date	A. Batch Init.	
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B RDK	
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	12/19/19	PS19L19A	12/21/19	SF19L21B RDK	

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

94192-012F

Matrix: Ground Water

Description: MW-105-121119

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
1. Acetone	U		μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJ
3. Benzene	1.1		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
4. Bromobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
5. Bromochloromethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
6. Bromodichloromethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
7. Bromoform	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
8. Bromomethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
9.2-Butanone	U		μg/L	25	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
10. n-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
11. sec-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
12. tert-Butylbenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
13. Carbon Disulfide	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
15. Chlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
16. Chloroethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
17. Chloroform	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
18. Chloromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
19.2-Chlorotoluene	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
21. Dibromochloromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
22. Dibromomethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	Z

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 94192 70 of 74 Page: Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-105-121119

Ground Water

Chain of Custody:

181435

1-10860 Client Project Name:

Sample No:

Collect Date: Collect Time: 12/11/19

14:15

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	GC/MS		Aliquot ID: Description:		94192-012F MW-105-121119	Matrix: G			
					Prepa	ration	A	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
31. trans-1,2-Dichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
32.1,2-Dichloropropane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
33. cis-1,3-Dichloropropene	U	μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
34. trans-1,3-Dichloropropene	U	μg/L	0.50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
35. Ethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
36. Ethylene Dibromide	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
37.2-Hexanone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
38. Isopropylbenzene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
39.4-Methyl-2-pentanone	U	μg/L	50	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
40. Methylene Chloride	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 41.2-Methylnaphthalene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
42. MTBE	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
43. Naphthalene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
44. n-Propylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
45. Styrene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
46.1,1,1,2-Tetrachloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
47.1,1,2,2-Tetrachloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
48. Tetrachloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
49. Toluene	4.7	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
50.1,2,4-Trichlorobenzene	U	μg/L	5.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
51.1,1,1-Trichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
52.1,1,2-Trichloroethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
53. Trichloroethene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
54. Trichlorofluoromethane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
55.1,2,3-Trichloropropane	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 56.1,2,3-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
57. 1,2,4-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
58.1,3,5-Trimethylbenzene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
59. Vinyl Chloride	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
60. m&p-Xylene	U	μg/L	2.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
61. o-Xylene	U	μg/L	1.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ
‡ 62. Xylenes	U	μg/L	3.0	1.0	12/18/19	VB19L18B	12/18/19	VB19L18B	ZJJ



Order: 94192 Page: 71 of 74 Date: 12/26/19

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-105-121119

Chain of Custody:

181435

Client Project Name: 1-10860

Sample No:

Collect Date:

‡: Parameter not included in NELAC Scope of Analysis.

12/11/19

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

Sample Matrix: Ground Water

Collect Time: 14:15

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 94192-012 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-105-121119 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 1. Acenaphthene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 2. Acenaphthylene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 3. Aniline U V-4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U PS19L18E 12/19/19 4 Anthracene 5.0 1.0 12/18/19 S519I 19B GJP μg/L 5. Azobenzene U 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U PS19I 18F 6. Benzo(a)anthracene μg/L 10 1.0 12/18/19 12/19/19 S519L19B GJP 7. Benzo(a)pyrene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B U PS19I 18F 12/19/19 S519I 19B GJP 8. Benzo(b)fluoranthene μg/L 10 1.0 12/18/19 U 9. Benzo(ghi)perylene 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP ua/L U 10. Benzo(k)fluoranthene μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 11. Benzyl Alcohol 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L 12. Bis(2-chloroethoxy)methane U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U PS19L18E 12/19/19 S519L19B GJP 13. Bis(2-chloroethyl)ether ua/L 10 10 12/18/19 14. Bis(2-ethylhexyl)phthalate U 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U 5.0 1.0 PS19I 18F 12/19/19 S519L19B GJP 15.4-Bromophenyl Phenylether 12/18/19 μg/L U 12/18/19 PS19L18E 12/19/19 S519L19B 16. Butyl Benzyl Phthalate μg/L 5.0 1.0 GJP U 17. Di-n-butyl Phthalate 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U PS19L18E 12/19/19 S519L19B ‡ 18. Carbazole μg/L 5.0 1.0 12/18/19 GJP 19.4-Chloro-3-methylphenol U 5.0 1.0 12/18/19 PS19I 18F 12/19/19 S519L19B GJP μg/L 20.2-Chloronaphthalene U μg/L 5.0 1.0 12/18/19 PS19I 18F 12/19/19 S519L19B GJP U 12/19/19 21.2-Chlorophenol 5.0 1.0 PS19L18E μg/L 12/18/19 S519L19B GJP 22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 23. Chrysene μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP GJP 24. Dibenzo(a,h)anthracene U 2.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B μq/L 25. Dibenzofuran U 4.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L 26. 2,4-Dichlorophenol U 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U 27. Diethyl Phthalate μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 34 5.0 1.0 PS19L18E 12/19/19 GJP 28. 2,4-Dimethylphenol μg/L 12/18/19 S519L19B 29. Dimethyl Phthalate U 5.0 1.0 PS19L18E 12/19/19 S519L19B μg/L 12/18/19 30.2,4-Dinitrophenol U 20 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μg/L U 31.2,4-Dinitrotoluene 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP μq/L U 32.2.6-Dinitrotoluene μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 33. Fluoranthene U μg/L 1.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U 34. Fluorene μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP 35. Hexachlorobenzene U 5.0 1.0 PS19L18E 12/19/19 S519L19B GJP μg/L 12/18/19 36. Hexachlorobutadiene U μg/L 5.0 1.0 12/18/19 PS19L18E 12/19/19 S519L19B GJP U V-5.0 PS19L18E 12/19/19 S519L19B GJP 37. Hexachlorocyclopentadiene μg/L 1.0 12/18/19

> 1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 94192 Page: 72 of 74 Date: 12/26/19

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-105-121119 Chain of Custody:

181435

14:15

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date:

12/11/19

Client Project No:

Ground Water Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID:	94192-012 MW-105-121119	Matrix: G	round Water		
Wethou. EFA 33100/EFA 8210E				Des	cription.		ation	Λ.		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepar P. Date	P. Batch	A. Date	nalysis A. Batch	Init.
38. Hexachloroethane	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
40. Isophorone	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
43. 2-Methylphenol	6.6		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
‡ 44.3&4-Methylphenol	29		μg/L	10	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
45. Naphthalene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
46. 2-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
47.3-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
48.4-Nitroaniline	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
49. Nitrobenzene	U		μg/L	3.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
50. 2-Nitrophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
51.4-Nitrophenol	U		μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
56.2,2'-Oxybis(1-chloropropane)	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
57. Pentachlorophenol	U	V-	μg/L	20	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
58. Phenanthrene	U		μg/L	2.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
59. Phenol	30		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
60. Pyrene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
61. Pyridine	U	L-	μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	12/18/19	PS19L18E	12/19/19	S519L19B	GJF
pH, Electrometric				Aliquot ID:		94192-012B	Matrix: G	Matrix: Ground Water		
Method: EPA 9040C				Des	cription:	MW-105-121119				
						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

1.pH

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

11.7 H

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

12/18/19 15:55 WD19L18A CMB

-1.00

NA

NA



1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 94192 Laboratory Sample Number: 94192-012

Order: 94192 Page: 73 of 74 Date: 12/26/19

Applied Science & Technology, Sample Description: MW-105-121119 Chain of Custody: 181435 Client Identification: Inc. - Brighton Client Project Name: 1-10860 Collect Date: 12/11/19 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:15 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 94192-012B Matrix: Ground Water Method: EPA 9056A Description: MW-105-121119 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Chloride 40000 μg/L 10000 1.0 12/17/19 PW19L17E 12/17/19 WC19L17A VO Residue, Filterable (TDS) Aliquot ID: 94192-012A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-105-121119 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids Н 50000 WH19L20B 610000 WH19L20B CMB μg/L 1.3 12/20/19 12/23/19 94192-012C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-105-121119 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

10

1.0

12/17/19

PW19L17A

12/17/19

WU19L17B SEM

DCSID: G-610.19 (10/01/19)

8000

μg/L

RSN: 94192-191226133437



Analytical Laboratory Report Laboratory Project Number: 94192

Order: 94192 Page: 74 of 74 Date: 12/26/19

Definitions/ Qualifiers:

- A: Spike recovery or precision unusable due to dilution.
- B: The analyte was detected in the associated method blank.
- E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J: The concentration is an estimated value.
- M: Modified Method
- U: The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

E : This flag identifies compounds whose response exceed the response of the highest standard in the initial calibration range of the instrument for that specific analysis.

E1 : The reported value is estimated due to the presence of interference.

H : Hold time exceeded.

L- : Recovery in the associated laboratory sample (LCS) exceeds the lower control limit. Results may be biased low.
 L+ : Recovery in the associated laboratory sample (LCS) exceeds the upper control limit. Results may be biased high.
 V- : Recovery in the associated continuing calibration verification sample (CCV) exceeds the lower control limit. Results may be biased low.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

RSN: 94192-191226133437



Tuesday, April 07, 2020

Fibertec Project Number: 95575

Project Identification: 1-10860 /1-10860

Submittal Date: 03/20/2020

Ms. Allison Rogowski
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Ms. Rogowski,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Rikki Lott at 3:30 PM, Apr 07, 2020

For Daryl P. Strandbergh Laboratory Director

Enclosures



Order: 95575 Page: 2 of 98 Date: 04/07/20

184260 Client Identification: Applied Science & Technology, Sample Description: MW-104-031820 Chain of Custody: Inc. - Brighton 1-10860 03/18/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:10 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-001C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-104-031820 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 3.2 mg/L 0.50 100 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-001D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-104-031820 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. T420C25A CJA 1. Arsenic 18 μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 2. Barium U 100 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 3. Chromium U μg/L 10 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 4. Copper U 4.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L U 5.Lead 3.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 6. Manganese U 10 04/07/20 T420D07A JLH 50 03/25/20 PT20C25A μg/L U 7. Nickel μg/L 20 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 10 Vanadium U LLV-4 0 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L Mercury by CVAAS, Total 95575-001D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-104-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/24/20 PM20C24B 03/24/20 M720C24B JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-001 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-104-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK П 0.20 PS20C25C 3. Aroclor-1232 μg/L 1.0 03/25/20 03/25/20 SF20C25B RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 6. Aroclor-1254 U 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311

T: (231) 775-8368

F: (231) 775-8584

Cadillac, MI 49601

8660 S. Mackinaw Trail



Order: 95575 3 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-104-031820

Sample No:

Chain of Custody:

184260

1-10860 Client Project Name:

Collect Date:

03/18/20

Client Project No:

Sample Comments:

Sample Matrix: **Ground Water** Collect Time:

14:10

Definitions:

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

95575-001 **Matrix: Ground Water** Aliquot ID:

Description: MW-104-031820

					Prepa	ration	А	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/25/20	SF20C25B RD
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/25/20	SF20C25B RD

Volatile Organic Compounds (VOCs) by GC/MS 95575-001E **Matrix: Ground Water** Aliquot ID: Method: EPA 5030C/EPA 8260D Description: MW-104-031820

						Prepa	ration		nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ir
1. Acetone	U	V+	μg/L	50	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JI
2. Acrylonitrile	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JI
3. Benzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	J
4. Bromobenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	, J
5. Bromochloromethane	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
6. Bromodichloromethane	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
7. Bromoform	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
8. Bromomethane	U	Y1	μg/L	10	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
9.2-Butanone	U	Y1	μg/L	25	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
10. n-Butylbenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	٠,
11. sec-Butylbenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
12. tert-Butylbenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
13. Carbon Disulfide	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
14. Carbon Tetrachloride	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
15. Chlorobenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
16. Chloroethane	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
17. Chloroform	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
18. Chloromethane	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
19.2-Chlorotoluene	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
20.1,2-Dibromo-3-chloropropane (SIM)	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
21. Dibromochloromethane	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
22. Dibromomethane	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
23.1,2-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
24.1,3-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
25.1,4-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
26. Dichlorodifluoromethane	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
27.1,1-Dichloroethane	21	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
28.1,2-Dichloroethane	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
29.1,1-Dichloroethene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 4 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-104-031820

Chain of Custody:

184260

Client Project Name:

1-10860

Sample No:

Collect Date:

03/18/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time: 14:10

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 95575-001E **Matrix: Ground Water** Method: EPA 5030C/EPA 8260D Description: MW-104-031820

						Prepa			nalysis	
arameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
30. cis-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	J١
31.trans-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	J١
32.1,2-Dichloropropane	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JI
33. cis-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JI
34. trans-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	J
35. Ethylbenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	J
36. Ethylene Dibromide	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	J
37.2-Hexanone	U	Y1	μg/L	50	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	J
38. Isopropylbenzene	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
39.4-Methyl-2-pentanone	U	Y1	μg/L	50	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
40. Methylene Chloride	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
41.2-Methylnaphthalene	U	Y1	μg/L	15	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
42.MTBE	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
13. Naphthalene	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
14. n-Propylbenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
45. Styrene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
46.1,1,1,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
47.1,1,2,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
48. Tetrachloroethene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
19. Toluene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
50.1,2,4-Trichlorobenzene	U	Y1	μg/L	10	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	. ,
51.1,1,1-Trichloroethane	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
52.1,1,2-Trichloroethane	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
53. Trichloroethene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
54. Trichlorofluoromethane	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	. ,
55.1,2,3-Trichloropropane	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
56.1,2,3-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
57.1,2,4-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
58.1,3,5-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
59. Vinyl Chloride	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
60.m&p-Xylene	U	Y1	μg/L	5.0	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
61.o-Xylene	U	Y1	μg/L	2.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
62. Xylenes	U	Y1	μg/L	7.5	5.0	03/23/20	VM20C23A	03/23/20	VM20C23A	



Order: 95575 Page: 5 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-104-031820

Ground Water

Chain of Custody:

184260

Client Project Name: 1-10860

0860

Sample No:
Sample Matrix:

Collect Date:

03/18/20 14:10

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 95575-001 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-104-031820

						Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acenaphthene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
2. Acenaphthylene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
3. Aniline	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
4. Anthracene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
5. Azobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
8. Benzo(b)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
10. Benzo(k)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G٠
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
15.4-Bromophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
18. Carbazole	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
21.2-Chlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
22.4-Chlorophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
23. Chrysene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
25. Dibenzofuran	U	L+	μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
27. Diethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
28.2,4-Dimethylphenol	360		μg/L	20	20	03/24/20	PS20C24A	03/25/20	SN20C25A	G.
29. Dimethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
30.2,4-Dinitrophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
31.2,4-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
32.2,6-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
33. Fluoranthene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
34. Fluorene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
35. Hexachlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

RSN: 95575-200407152242



Order: 95575 Page: 6 of 98 Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-104-031820 Chain of Custody:

184260

1-10860 Client Project Name:

Sample No:

Collect Date:

03/18/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix: **Ground Water** Collect Time: 14:10

95575-001 **Matrix: Ground Water** Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: Method: EPA 3510C/EPA 8270E Description: MW-104-031820

						Prepa		A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
38. Hexachloroethane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
40. Isophorone	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
41.2-Methyl-4,6-dinitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
43.2-Methylphenol	10		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
44.3&4-Methylphenol	98		μg/L	10	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
45. Naphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
46.2-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
47.3-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
48.4-Nitroaniline	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
49. Nitrobenzene	U		μg/L	3.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
50.2-Nitrophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
51.4-Nitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
54. N-Nitrosodiphenylamine	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
57. Pentachlorophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
58. Phenanthrene	U	L+	μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
59. Phenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
60. Pyrene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
61. Pyridine	U	L-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G
63.2,4,5-Trichlorophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
H, Electrometric				Δlin	uot ID:	95575-001A	Matrix: G	round Water		

Method: EPA 9040C Description: MW-104-031820

Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch 11.0 Н NA NA 03/24/20 15:32 WD20C24C AMW 1.pH pH Units -1.00 1.0



Order: 95575 Page: 7 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: MW-104-031820 Chain of Custody: 184260 Client Identification: Inc. - Brighton 1-10860 03/18/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:10 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-001A Matrix: Ground Water Method: EPA 9056A Description: MW-104-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20C24B WC20C25A CMB 1. Chloride 310000 μg/L 10000 5.0 03/25/20 03/25/20 Residue, Filterable (TDS) Aliquot ID: 95575-001A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-104-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Date P. Batch A. Date A. Batch Dilution 1. Total Dissolved Solids 03/25/20 WH20C25A VO 920000 50000 WH20C25A 03/26/20 μg/L 1.3 Aliquot ID: 95575-001B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-104-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N WU20D03A RKB 19000 μg/L 20 2.0 04/03/20 PW20D03A 04/03/20

RSN: 95575-200407152242



Order: 95575 Page: 8 of 98 Date: 04/07/20

184260 Client Identification: Applied Science & Technology, Sample Description: MW-101-031820 Chain of Custody: Inc. - Brighton 1-10860 03/18/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:00 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-002C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-101-031820 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 1.2 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-002D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-101-031820 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 5.5 T420C25A CJA 1. Arsenic μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 2. Barium 130 100 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 3. Chromium U μg/L 10 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 4. Copper U 4.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L U 5.Lead 3.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 6. Manganese U 10 04/07/20 T420D07A JLH 50 03/25/20 PT20C25A μg/L U 7. Nickel μg/L 20 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 10 Vanadium U LLV-4 0 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L Mercury by CVAAS, Total 95575-002D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-101-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/24/20 PM20C24B 03/24/20 M720C24B JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-002 Matrix: Ground Water Description: MW-101-031820 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK П 0.20 PS20C25C 3. Aroclor-1232 μg/L 1.0 03/25/20 03/25/20 SF20C25B RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 6. Aroclor-1254 U 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311

Cadillac, MI 49601

8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

F: (231) 775-8584

T: (231) 775-8368



Order: 95575 Page: 9 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-101-031820

Chain of Custody:

184260

Client Project Name: 1

1-10860

Sample No: Sample Matrix: Collect Date:

03/18/20

Client Project No:

Collect Time:

14:00

Sample Comments:

Definitions: Q: Qual

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 95575-002 Matrix: Ground Water

Description: MW-101-031820

Ground Water

					Prepa	aration	F	Analysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/25/20	SF20C25B RDK
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/25/20	SF20C25B RDK

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 95575-002E

Matrix: Ground Water

Description: MW-101-031820

Preparation Analysis Result Ω Units Reporting Limit Dilution P. Date Parameter(s) P. Batch A. Date A. Batch Init. 1. Acetone U V+ 50 03/23/20 VM20C23A 03/23/20 VM20C23A JMF µg/L 1.0 2. Acrylonitrile U μg/L 2.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF 3. Benzene U 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L 4. Bromobenzene U 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L U 1.0 03/23/20 5. Bromochloromethane 1.0 03/23/20 VM20C23A VM20C23A JMF μg/L 6. Bromodichloromethane U μg/L 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF U 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF 7. Bromoform μg/L 1.0 8. Bromomethane U μg/L 5.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF 9 2-Butanone U 25 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L 10. n-Butylbenzene 2.7 E1 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L 1.0 1.7 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF 11. sec-Butylbenzene F1 10 μg/L 12. tert-Butylbenzene 03/23/20 VM20C23A 03/23/20 VM20C23A JMF U μg/L 1.0 1.0 13. Carbon Disulfide U 5.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L 14. Carbon Tetrachloride U μg/L 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF п 03/23/20 VM20C23A 03/23/20 15. Chlorobenzene μg/L 1.0 1.0 VM20C23A JMF 16. Chloroethane U 5.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L 17. Chloroform U μg/L 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF 18. Chloromethane U 5.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L U 19.2-Chlorotoluene μg/L 5.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF ‡ 20.1,2-Dibromo-3-chloropropane (SIM) U 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L 21. Dibromochloromethane U 5.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L U 1.0 VM20C23A 22. Dibromomethane μg/L 5.0 03/23/20 03/23/20 VM20C23A JMF 23.1,2-Dichlorobenzene U μg/L 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF U 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF 24.1.3-Dichlorobenzene μg/L 25.1,4-Dichlorobenzene U 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF ua/L U 26. Dichlorodifluoromethane μg/L 5.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF U 27.1,1-Dichloroethane 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L 28.1,2-Dichloroethane U μg/L 1.0 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF 29.1,1-Dichloroethene U 1.0 03/23/20 VM20C23A 03/23/20 VM20C23A JMF μg/L 1.0

> 1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 10 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-101-031820

Ground Water

Description: MW-101-031820

Chain of Custody:

184260

Client Project Name: 1-10860

Sample No:

Collect Date: Collect Time: 03/18/20

14:00

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 95575-002E **Matrix: Ground Water** Method: EPA 5030C/EPA 8260D

					Prepa	ration	А	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
30. cis-1,2-Dichloroethene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
31. trans-1,2-Dichloroethene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
32.1,2-Dichloropropane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
33. cis-1,3-Dichloropropene	U	μg/L	0.50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
34. trans-1,3-Dichloropropene	U	μg/L	0.50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
35. Ethylbenzene	5.1	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
36. Ethylene Dibromide	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
37.2-Hexanone	U	μg/L	50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
38. Isopropylbenzene	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
39.4-Methyl-2-pentanone	U	μg/L	50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
40. Methylene Chloride	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
41.2-Methylnaphthalene	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
42.MTBE	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
43. Naphthalene	7.6	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
44. n-Propylbenzene	4.1	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
45. Styrene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
46.1,1,1,2-Tetrachloroethane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
47.1,1,2,2-Tetrachloroethane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
48. Tetrachloroethene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
49. Toluene	1.6	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
50.1,2,4-Trichlorobenzene	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
51.1,1,1-Trichloroethane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
52.1,1,2-Trichloroethane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
53. Trichloroethene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
54. Trichlorofluoromethane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
55.1,2,3-Trichloropropane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
56.1,2,3-Trimethylbenzene	25	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
57.1,2,4-Trimethylbenzene	40	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
58.1,3,5-Trimethylbenzene	11	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
59. Vinyl Chloride	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
60.m&p-Xylene	23	μg/L	2.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
61.o-Xylene	10.0	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMI
62. Xylenes	33	μg/L	3.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF



Order: 95575 Page: 11 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Base/Neutral/Acid Semivolatiles by GC/MS

Inc. - Brighton

Sample Description: MW-101-031820

Ground Water

Aliquot ID:

95575-002

Chain of Custody:

184260

Client Project Name: 1-10860

O Sample No:

Collect Date:
Collect Time:

Matrix: Ground Water

03/18/20

14:00

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Date of the data of the control of t				7 419	uot 10.	000.0 002	matrix. C	Touria Trator		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-101-031820				
						Prepar	ation	Aı	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
2. Acenaphthylene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
3. Aniline	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
4. Anthracene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
‡ 5. Azobenzene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
6.Benzo(a)anthracene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
7. Benzo(a)pyrene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
8. Benzo(b)fluoranthene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
9. Benzo(ghi)perylene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
10. Benzo(k)fluoranthene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
11. Benzyl Alcohol	U		μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
15.4-Bromophenyl Phenylether	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
‡ 18. Carbazole	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
21.2-Chlorophenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
22.4-Chlorophenyl Phenylether	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
23. Chrysene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
25. Dibenzofuran	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
27. Diethyl Phthalate	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
28.2,4-Dimethylphenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
29. Dimethyl Phthalate	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
30.2,4-Dinitrophenol	U		μg/L	100	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
31.2,4-Dinitrotoluene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
32.2,6-Dinitrotoluene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
33. Fluoranthene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
34. Fluorene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
35. Hexachlorobenzene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
36. Hexachlorobutadiene	U		μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	
			. 0							

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

37. Hexachlorocyclopentadiene

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

μg/L

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

5.0

03/24/20

25

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

03/25/20

PS20C24A

U V-

SN20C25A GJP



Order: 95575 Page: 12 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Base/Neutral/Acid Semivolatiles by GC/MS

Inc. - Brighton

Sample Description: MW-101-031820

Ground Water

Chain of Custody:

184260

14:00

Client Project Name: 1-1

1-10860

Sample No:
Sample Matrix:

Collect Date:
Collect Time:

03/18/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

Aliquot ID: 95575-002 Matrix: Ground Water

‡: Parameter not included in NELAC Scope of Analysis.

Method: EPA 3510C/EPA 8270E Description: MW-101-031820

						Prepar			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	ln
38. Hexachloroethane	U		μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	G
39. Indeno(1,2,3-cd)pyrene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	G
40. Isophorone	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	G
41.2-Methyl-4,6-dinitrophenol	U	L+	μg/L	50	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	G
42.2-Methylnaphthalene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	G
43.2-Methylphenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	G
44.3&4-Methylphenol	U		μg/L	10	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	C
45. Naphthalene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	C
46.2-Nitroaniline	U		μg/L	20	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	C
47.3-Nitroaniline	U		μg/L	20	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	C
48.4-Nitroaniline	U	L+	μg/L	20	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
49. Nitrobenzene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
50.2-Nitrophenol	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
51.4-Nitrophenol	U	L+	μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
52. N-Nitrosodimethylamine	U		μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
54. N-Nitrosodiphenylamine	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
55. Di-n-octyl Phthalate	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
57. Pentachlorophenol	U	V-	μg/L	100	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
58. Phenanthrene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	C
59. Phenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
60. Pyrene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	C
61. Pyridine	U	L-	μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
62.1,2,4-Trichlorobenzene	U		μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	C
63.2,4,5-Trichlorophenol	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	(
64.2,4,6-Trichlorophenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	C
H, Electrometric				Aliq	uot ID:	95575-002A	Matrix: G	round Water		
lethod: EPA 9040C				Des	cription:	MW-101-031820				
Method: EPA 9040C				Des	cription:	M		W-101-031820 Preparation		

Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 11.7 Н -1.00 NA NA 03/24/20 15:35 W D20C24C AMW 1.pH pH Units 1.0



Order: 95575 Page: 13 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: MW-101-031820 Chain of Custody: 184260 Client Identification: Inc. - Brighton 1-10860 03/18/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:00 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-002A Matrix: Ground Water Method: EPA 9056A Description: MW-101-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20C24B WC20C24A CMB 1. Chloride 64000 μg/L 10000 1.0 03/24/20 03/24/20 Residue, Filterable (TDS) Aliquot ID: 95575-002A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-101-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 03/25/20 WH20C25A VO 520000 50000 WH20C25A 03/26/20 μg/L 1.3 95575-002B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-101-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N WU20D03A RKB 3200 μg/L 10 1.0 04/03/20 PW20D03A 04/03/20

RSN: 95575-200407152242



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 95575 Laboratory Sample Number: 95575-003

Order: 95575 Page: 14 of 98 Date: 04/07/20

184260 Client Identification: Applied Science & Technology, Sample Description: TMW-26-031820 Chain of Custody: Inc. - Brighton 1-10860 03/18/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 16:45 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-003C **Matrix: Ground Water** Method: ASTM D7237-10 Description: TMW-26-031820 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 0.0052 mg/L 0.0050 1.0 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-003D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: TMW-26-031820 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C25A CJA 1. Arsenic μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 2. Barium U 100 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 3. Chromium 20 μg/L 10 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 4. Copper 9.4 4.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L U 5.Lead 3.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 6. Manganese U 10 04/07/20 T420D07A JLH 50 03/25/20 PT20C25A μg/L 7. Nickel U μg/L 20 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 10 Vanadium 4.1 LLV-4 0 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L Mercury by CVAAS, Total 95575-003D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: TMW-26-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/24/20 PM20C24B 03/24/20 M720C24B JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-003 Matrix: Ground Water Description: TMW-26-031820 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK П 0.20 PS20C25C 3. Aroclor-1232 μg/L 1.0 03/25/20 03/25/20 SF20C25B RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 6. Aroclor-1254 U 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584 8660 S. Mackinaw Trail



Order: 95575 Page: 15 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: TMW-26-031820

Chain of Custody:

184260

Client Project Name: 1-10

1-10860

Sample No:

Collect Date:

03/18/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Ground Water

Collect Time:

16:45

Polychlorinated Biphenyls (PCBs)

Aliquot ID: 95575-003

Matrix: Ground Water

Method: EPA 3510C/EPA 8082A

Description: TMW-26-031820

Watrix. Ground Water

					Prepa	ration	Analysis		
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.	
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/25/20	SF20C25B RDK	
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/25/20	SF20C25B RDK	

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 95575-003E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: TMW-26-031820

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
3. Benzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
4. Bromobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
5. Bromochloromethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
6. Bromodichloromethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
7. Bromoform	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
8. Bromomethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
9.2-Butanone	U		μg/L	25	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
10. n-Butylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
11. sec-Butylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
12. tert-Butylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
13. Carbon Disulfide	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
15. Chlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
16. Chloroethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
17. Chloroform	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
18. Chloromethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
19.2-Chlorotoluene	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
21. Dibromochloromethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
22. Dibromomethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 Page: 16 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: TMW-26-031820

Ground Water

Chain of Custody:

184260

Client Project Name: 1-10860

O Sample No:

Collect Date:
Collect Time:

03/18/20

16:45

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by	y GC/MS			uot ID:	95575-003E		round Water		
Method: EPA 5030C/EPA 8260D			Des	cription:	TMW-26-031820				
	5			5.1	Prepa			nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
30. cis-1,2-Dichloroethene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
31. trans-1,2-Dichloroethene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
32.1,2-Dichloropropane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
33. cis-1,3-Dichloropropene	U	μg/L	0.50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
34. trans-1,3-Dichloropropene	U	μg/L	0.50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
35. Ethylbenzene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
36. Ethylene Dibromide	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
37.2-Hexanone	U	μg/L	50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
38. Isopropylbenzene	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
39.4-Methyl-2-pentanone	U	μg/L	50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
40. Methylene Chloride	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
‡ 41.2-Methylnaphthalene	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
42.MTBE	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
43. Naphthalene	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
44. n-Propylbenzene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
45. Styrene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
46.1,1,1,2-Tetrachloroethane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
47.1,1,2,2-Tetrachloroethane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
48. Tetrachloroethene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
49. Toluene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
50.1,2,4-Trichlorobenzene	U	μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
51.1,1,1-Trichloroethane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
‡ 52.1,1,2-Trichloroethane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
53. Trichloroethene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
54. Trichlorofluoromethane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
55.1,2,3-Trichloropropane	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
‡ 56.1,2,3-Trimethylbenzene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
57.1,2,4-Trimethylbenzene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
58.1,3,5-Trimethylbenzene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
59. Vinyl Chloride	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
60. m&p-Xylene	U	μg/L	2.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
61.o-Xylene	U	μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
,									

μg/L

1.0

03/23/20

VM20C23A

03/23/20

VM20C23A JMF

RSN: 95575-200407152242

3.0

‡ 62. Xylenes



Order: 95575 17 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: TMW-26-031820

Ground Water

Chain of Custody:

184260

Client Project Name: 1-10860

Sample No:

Collect Date: Collect Time: 03/18/20

16:45

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	95575-003 TMW-26-031820	Matrix: G	round Water		
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
3. Aniline	U	G+	μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
4. Anthracene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
8. Benzo(b)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
10. Benzo(k)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
15.4-Bromophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
18. Carbazole	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
19.4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
20.2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
22.4-Chlorophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
23. Chrysene	U	G+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
25. Dibenzofuran	U	L+	μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
26.2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
27. Diethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
28.2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
29. Dimethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
30.2,4-Dinitrophenol	U	G+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
31.2,4-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
32.2,6-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
33. Fluoranthene	U	G+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
34. Fluorene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
35. Hexachlorobenzene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
36. Hexachlorobutadiene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF

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Order: 95575 Page: 18 of 98 Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: TMW-26-031820

Ground Water

Chain of Custody:

184260

16:45

1-10860 Client Project Name:

Sample No:

Sample Matrix:

Collect Date: Collect Time: 03/18/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

95575-003 **Matrix: Ground Water** Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID:

Dadontoutium tota commediation by Comme	•			7 419	uot .b.	000.0 000	matrix. C	Tourid Traisi		
Method: EPA 3510C/EPA 8270E				Des	cription:	TMW-26-031820				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
40. Isophorone	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
41.2-Methyl-4,6-dinitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
42.2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
43.2-Methylphenol	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
‡ 44.3&4-Methylphenol	U	G+	μg/L	10	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
45. Naphthalene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
46.2-Nitroaniline	U	G+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
47.3-Nitroaniline	U	G+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
48.4-Nitroaniline	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
50.2-Nitrophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.
51.4-Nitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
54. N-Nitrosodiphenylamine	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
56.2,2'-Oxybis(1-chloropropane)	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
57. Pentachlorophenol	U	G+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
58. Phenanthrene	U	L+	μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
59. Phenol	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
60. Pyrene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
61. Pyridine	U	L-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
62.1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
63.2,4,5-Trichlorophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
64.2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
pH, Electrometric				Aliq	uot ID:	95575-003A	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	TMW-26-031820				
						Prepar	ation	Αı	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init

Parameter(s) Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Result Н NA 03/24/20 15:37 WD20C24C AMW 1.pH 12.1 pH Units -1.00 1.0 NA

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Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 95575 Laboratory Sample Number: 95575-003

Order: 95575 Page: 19 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: TMW-26-031820 Chain of Custody: 184260 Client Identification: Inc. - Brighton 1-10860 03/18/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 16:45 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-003A Matrix: Ground Water Method: EPA 9056A Description: TMW-26-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U PW20C24B WC20C24A CMB 1. Chloride μg/L 10000 1.0 03/24/20 03/24/20 Residue, Filterable (TDS) Aliquot ID: 95575-003A Matrix: Ground Water Method: SM 2540 C-2011 Description: TMW-26-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 03/25/20 WH20C25A VO 640000 50000 WH20C25A 03/26/20 μg/L 1.3 Aliquot ID: 95575-003B **Matrix: Ground Water** Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: TMW-26-031820 Preparation Analysis

Reporting Limit

10

Dilution

1.0

P. Date

04/03/20

P. Batch

PW20D03A

A. Date

04/03/20

A. Batch

WU20D03A RKB

Init.

Result

1900

Q

Units

μg/L

RSN: 95575-200407152242



Order: 95575 Page: 20 of 98 Date: 04/07/20

184260 Client Identification: Applied Science & Technology, Sample Description: MW-100i-031920 Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:20 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-004C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-100i-031920 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 0.31 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-004D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-100i-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. T420C25A CJA 1. Arsenic 210 μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 2. Barium U 100 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 3. Chromium U μg/L 10 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 4. Copper 6.2 4.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 5.Lead 6.4 3.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 6. Manganese 75 10 04/07/20 T420D07A JLH 50 03/25/20 PT20C25A μg/L U 7. Nickel μg/L 20 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 10 Vanadium 13 IIV-4 0 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L Mercury by CVAAS, Total 95575-004D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-100i-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/24/20 PM20C24B 03/24/20 M720C24B JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-004 Matrix: Ground Water Description: MW-100i-031920 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK П 0.20 PS20C25C 3. Aroclor-1232 μg/L 1.0 03/25/20 03/25/20 SF20C25B RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 6. Aroclor-1254 U 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

T: (810) 220-3300

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F: (810) 220-3311

F: (231) 775-8584

Brighton, MI 48116

Cadillac, MI 49601

11766 E. Grand River

8660 S. Mackinaw Trail



Order: 95575 21 of 98 Page: Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-100i-031920

Chain of Custody:

184260

1-10860 Client Project Name:

Sample No:

Collect Date:

03/19/20

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time: 14:20

Sample Comments:

Definitions:

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

95575-004 **Matrix: Ground Water** Aliquot ID:

Description: MW-100i-031920

					Prepa	ration	A	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/25/20	SF20C25B RDK
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/25/20	SF20C25B RDK

Volatile Organic Compounds (VOCs) by GC/MS 95575-004E **Matrix: Ground Water** Aliquot ID: Method: EPA 5030C/EPA 8260D Description: MW-100i-031920

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	Y1	μg/L	50	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 2. Acrylonitrile	U	Y1	μg/L	10	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
3. Benzene	26	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
4. Bromobenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
5. Bromochloromethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
6. Bromodichloromethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
7. Bromoform	U	Y1	μg/L	10	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
8. Bromomethane	U	Y1	μg/L	20	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
9.2-Butanone	U	Y1	μg/L	25	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
10. n-Butylbenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
11. sec-Butylbenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
12. tert-Butylbenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
13. Carbon Disulfide	25	Y1	μg/L	10	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
14. Carbon Tetrachloride	U	Y1	μg/L	10	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
15. Chlorobenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
16. Chloroethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
17. Chloroform	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
18. Chloromethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
19.2-Chlorotoluene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
21. Dibromochloromethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
22. Dibromomethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
23.1,2-Dichlorobenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
24.1,3-Dichlorobenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
25.1,4-Dichlorobenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
26. Dichlorodifluoromethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
27.1,1-Dichloroethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
28.1,2-Dichloroethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
29.1,1-Dichloroethene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI



Order: 95575 Page: 22 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100i-031920

Ground Water

Chain of Custody:

184260

Client Project Name: 1-

1-10860

Sample No:
Sample Matrix:

Collect Date:

03/19/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Collect Time: 14:20

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 95575-004E

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-100i-031920

Wethod. Li A 30300/Li A 0200D		Description. in W-1001-031320									
						Prepa	ration	Δ	nalysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lni	
30. cis-1,2-Dichloroethene	20	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JN	
31.trans-1,2-Dichloroethene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JN	
32.1,2-Dichloropropane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J١	
33. cis-1,3-Dichloropropene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J۱	
34. trans-1,3-Dichloropropene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JN	
35. Ethylbenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J١	
36. Ethylene Dibromide	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
37.2-Hexanone	U	Y1	μg/L	50	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J۱	
38. Isopropylbenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JI	
39.4-Methyl-2-pentanone	U	Y1	μg/L	50	10	03/24/20	VM20C24A	03/24/20	VM20C24A	Jľ	
40. Methylene Chloride	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JI	
41.2-Methylnaphthalene	U	Y1	μg/L	30	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
42.MTBE	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
43. Naphthalene	11	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
44. n-Propylbenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
45. Styrene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
46.1,1,1,2-Tetrachloroethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
47.1,1,2,2-Tetrachloroethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
48. Tetrachloroethene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
49. Toluene	5.9	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
50.1,2,4-Trichlorobenzene	U	Y1	μg/L	20	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
51.1,1,1-Trichloroethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
52.1,1,2-Trichloroethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JI	
53. Trichloroethene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JI	
54. Trichlorofluoromethane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	. JI	
55.1,2,3-Trichloropropane	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JI	
56.1,2,3-Trimethylbenzene	U	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
57.1,2,4-Trimethylbenzene	5.6	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	
58.1,3,5-Trimethylbenzene	8.7	E1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JI	
59. Vinyl Chloride	21	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JI	
60. m&p-Xylene	12	Y1	μg/L	10	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JI	
61.o-Xylene	5.6	Y1	μg/L	5.0	10	03/24/20	VM20C24A	03/24/20	VM20C24A	JI	
62. Xylenes	17	Y1	μg/L	15	10	03/24/20	VM20C24A	03/24/20	VM20C24A	J	



Order: 95575 Page: 23 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Base/Neutral/Acid Semivolatiles by GC/MS

Inc. - Brighton

Sample Description: MW-100i-031920

Ground Water

Aliquot ID:

95575-004

Description: MW-100i-031920

Chain of Custody:

184260

Client Project Name: 1-

1-10860

Sample No:
Sample Matrix:

Collect Date:
Collect Time:

Matrix: Ground Water

03/19/20

14:20

Client Project No:

Sample Comments:

Definitions: Q: 0

Method: EPA 3510C/EPA 8270E

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

						Prepa	ration	А	nalysis				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init				
1. Acenaphthene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJI				
2. Acenaphthylene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJF				
3. Aniline	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJI				
4. Anthracene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJI				
5. Azobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
8. Benzo(b)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
10. Benzo(k)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
15.4-Bromophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B GJ				
40 D . I D . I DI .I . I						00/04/00	B0000011	00/04/00	011000010 011				

16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 17. Di-n-butyl Phthalate μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP ‡ 18. Carbazole 7.1 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 19.4-Chloro-3-methylphenol U 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 20.2-Chloronaphthalene U PS20C24A μg/L 5.0 1.0 03/24/20 03/24/20 SN20C24B GJP U 21.2-Chlorophenol 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L μg/L 22.4-Chlorophenyl Phenylether U L+ 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 23. Chrysene μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 25. Dibenzofuran U L+ μg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26.2,4-Dichlorophenol U 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 27. Diethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28.2,4-Dimethylphenol 14 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L PS20C24A 29. Dimethyl Phthalate U L+ 5.0 1.0 03/24/20 03/24/20 SN20C24B GJP μg/L U 30.2.4-Dinitrophenol μg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 5.0 31.2,4-Dinitrotoluene L+ μg/L 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 32.2.6-Dinitrotoluene L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene 1.6 μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP

5.0

5.0

5.0

5.0

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

μg/L

μg/L

μg/L

μg/L

U

U

U

U V-

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

1.0

1.0

1.0

03/24/20

03/24/20

03/24/20

03/24/20

PS20C24A

PS20C24A

PS20C24A

PS20C24A

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

03/24/20

03/24/20

03/24/20

03/24/20

34. Fluorene

35. Hexachlorobenzene

36. Hexachlorobutadiene

37. Hexachlorocyclopentadiene

SN20C24B GJP

SN20C24B GJP

SN20C24B GJP

SN20C24B GJP



Order: 95575 Page: 24 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100i-031920

Ground Water

Chain of Custody:

184260

Client Project Name: 1-10

1-10860

Sample No:
Sample Matrix:

Collect Date:

03/19/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Collect Time:

: 14:20

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 95575-004 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-100i-031920

Method. Li A 33 100/Li A 02/0L		Description: WW-1001-001320										
						Prepa	ration	Д	nalysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init		
38. Hexachloroethane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
40. Isophorone	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
41.2-Methyl-4,6-dinitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
43.2-Methylphenol	18		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
‡ 44.3&4-Methylphenol	48		μg/L	10	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
45. Naphthalene	11		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
46.2-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
47.3-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
48.4-Nitroaniline	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
49. Nitrobenzene	U		μg/L	3.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
50.2-Nitrophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
51.4-Nitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G		
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G		
54. N-Nitrosodiphenylamine	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G		
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		
57. Pentachlorophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G		
58. Phenanthrene	3.5	L+	μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G		
59. Phenol	44		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G		
60. Pyrene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G		
61. Pyridine	U	L-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G		
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G		
63.2,4,5-Trichlorophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G		
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ		

pH, Electrometric Aliquot ID: 95575-004A Matrix: Ground Water

Method: EPA 9040C Description: MW-100i-031920

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Н -1.00 NA 03/24/20 15:39 WD20C24C AMW 1.pH 10.7 pH Units 1.0 NA

RSN: 95575-200407152242



Order: 95575 25 of 98 Page: Date: 04/07/20

Applied Science & Technology, Sample Description: MW-100i-031920 Chain of Custody: 184260 Client Identification: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:20 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-004A Matrix: Ground Water Method: EPA 9056A Description: MW-100i-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20C24B WC20C25A CMB 1. Chloride 110000 μg/L 10000 2.0 03/25/20 03/25/20 Residue, Filterable (TDS) Aliquot ID: 95575-004A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-100i-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Date P. Batch A. Date A. Batch Dilution 1. Total Dissolved Solids 2400000 50000 WH20C25A 03/26/20 WH20C25A VO μg/L 1.3 03/25/20 95575-004B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Description: MW-100i-031920 Method: SM 4500-NH3 G-2011 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N WU20D03A RKB 21000 40 4.0 04/03/20 PW20D03A 04/03/20

μg/L

RSN: 95575-200407152242



Order: 95575 Page: 26 of 98 Date: 04/07/20

184260 Client Identification: Applied Science & Technology, Sample Description: MW-103-031920 Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:35 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-005C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-103-031920 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 1.5 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-005D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-103-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C25A CJA 1. Arsenic μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 2. Barium 400 100 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 3. Chromium U μg/L 10 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 4. Copper U 4.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 5.Lead U 3.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 6. Manganese U 10 04/07/20 T420D07A JLH 50 03/25/20 PT20C25A μg/L U 7. Nickel μg/L 20 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 10 Vanadium 4.2 LLV-4 0 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L Mercury by CVAAS, Total 95575-005D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-103-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/24/20 PM20C24B 03/24/20 M720C24B JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-005 Matrix: Ground Water Description: MW-103-031920 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK П 0.20 PS20C25C 3. Aroclor-1232 μg/L 1.0 03/25/20 03/25/20 SF20C25B RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 6. Aroclor-1254 U 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/25/20 PS20C25C 03/25/20 SF20C25B RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311

Cadillac, MI 49601

8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

F: (231) 775-8584

T: (231) 775-8368



Order: 95575 Page: 27 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-103-031920

Ground Water

Chain of Custody:

184260

15:35

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

03/19/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifi

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 95575-005 Matrix: Ground Water

Description: MW-103-031920

-					Prepa	aration	ļ.	Analysis
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/25/20	SF20C25B RDK
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/25/20	SF20C25B RDK

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 95575-005E Matrix: Ground Water

Sample Matrix:

Method: EPA 5030C/EPA 8260D Description: MW-103-031920

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
3. Benzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
4. Bromobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
5. Bromochloromethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
6. Bromodichloromethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
7. Bromoform	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
8. Bromomethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
9.2-Butanone	U		μg/L	25	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
10. n-Butylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
11. sec-Butylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
12.tert-Butylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
13. Carbon Disulfide	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
15. Chlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
16. Chloroethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
17. Chloroform	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
18. Chloromethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
19.2-Chlorotoluene	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
21. Dibromochloromethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
22. Dibromomethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
27.1,1-Dichloroethane	3.7		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 Page: 28 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Volatile Organic Compounds (VOCs) by GC/MS

Inc. - Brighton

Sample Description: MW-103-031920

Chain of Custody:

Matrix: Ground Water

184260

15:35

Client Project Name:

1-10860

Sample No:

Sample Matrix:

Collect Date:

03/19/20

Client Project No:

00

Ground Water

Aliquot ID:

95575-005E

Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

	,									
Method: EPA 5030C/EPA 8260D				Des	cription:	MW-103-031920				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepar P. Date	ation P. Batch	A. Date	nalysis A. Batch	lnit.
		Q								
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
31.trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
34.trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
35. Ethylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
36. Ethylene Dibromide	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
37.2-Hexanone	U		μg/L	50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
38. Isopropylbenzene	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
39.4-Methyl-2-pentanone	U		μg/L	50	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
40. Methylene Chloride	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
‡ 41.2-Methylnaphthalene	14		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
42.MTBE	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
43. Naphthalene	23		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
44.n-Propylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
45. Styrene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
46.1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
47.1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
48. Tetrachloroethene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
49.Toluene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
50.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
\$ 52.1,1,2-Trichloroethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
53. Trichloroethene	1.0		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
55.1,2,3-Trichloropropane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JMF
56.1,2,3-Trimethylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
57.1,2,4-Trimethylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
58.1,3,5-Trimethylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
59. Vinyl Chloride	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	
			r 5 =			- 5/120/23		22.20,20	20020/1	

μg/L

μg/L

μg/L

U

U

1.0

1.0

1.0

03/23/20

03/23/20

03/23/20

VM20C23A

VM20C23A

VM20C23A

03/23/20

03/23/20

03/23/20

2.0

1.0

3.0

60.m&p-Xylene

61.o-Xylene

‡ 62. Xylenes

VM20C23A JMF

VM20C23A JMF

VM20C23A JMF



Order: 95575 Page: 29 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-103-031920

Ground Water

Chain of Custody:

184260

Client Project Name: 1-10860

O Sample No:

Collect Date:
Collect Time:

03/19/20 15:35

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	95575-005	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-103-031920				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
2. Acenaphthylene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
3. Aniline	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
4. Anthracene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
‡ 5. Azobenzene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
6. Benzo(a)anthracene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
7.Benzo(a)pyrene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
8. Benzo(b)fluoranthene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
9. Benzo(ghi)perylene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
10. Benzo(k)fluoranthene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
11. Benzyl Alcohol	U		μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
15.4-Bromophenyl Phenylether	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
‡ 18. Carbazole	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
21.2-Chlorophenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
22.4-Chlorophenyl Phenylether	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
23. Chrysene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
25. Dibenzofuran	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
27. Diethyl Phthalate	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
28.2,4-Dimethylphenol	30		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
29. Dimethyl Phthalate	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
30.2,4-Dinitrophenol	U		μg/L	100	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
31.2,4-Dinitrotoluene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
32.2,6-Dinitrotoluene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
33. Fluoranthene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
34. Fluorene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
35. Hexachlorobenzene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
36. Hexachlorobutadiene	U		μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP



Order: 95575 30 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-103-031920

Chain of Custody:

184260

Client Project Name: 1-10860

Sample No:

Collect Date:

03/19/20

1-10860 Client Project No:

Sample Matrix:

Ground Water Collect Time:

15:35

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	95575-005	Matrix:	Ground Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-103-031920				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
38. Hexachloroethane	U		μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
39. Indeno(1,2,3-cd)pyrene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
40. Isophorone	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
41.2-Methyl-4,6-dinitrophenol	U	L+	μg/L	50	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
42.2-Methylnaphthalene	13		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
43.2-Methylphenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
‡ 44.3&4-Methylphenol	U		μg/L	10	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
45. Naphthalene	18		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
46.2-Nitroaniline	U		μg/L	20	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
47.3-Nitroaniline	U		μg/L	20	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
48.4-Nitroaniline	U	L+	μg/L	20	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
49. Nitrobenzene	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
50.2-Nitrophenol	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
51.4-Nitrophenol	U	L+	μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
52. N-Nitrosodimethylamine	U		μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
54. N-Nitrosodiphenylamine	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
55. Di-n-octyl Phthalate	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
57. Pentachlorophenol	U	V-	μg/L	100	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
58. Phenanthrene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
59. Phenol	9.6		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
60. Pyrene	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
61. Pyridine	U	L-	μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
62.1,2,4-Trichlorobenzene	U		μg/L	25	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
63.2,4,5-Trichlorophenol	U	L+	μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
64.2,4,6-Trichlorophenol	U		μg/L	5.0	5.0	03/24/20	PS20C24A	03/25/20	SN20C25A	GJP
pH, Electrometric				Aliq	uot ID:	95575-005A	Matrix:	Ground Water		
Method: EPA 9040C				Des	cription:	MW-103-031920				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1.pH	12.4	Н	pH Units	-1.00	1.0	NA	NA	03/24/20 15:42	WD20C24C	AMW

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 Page: 31 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: MW-103-031920 Chain of Custody: 184260 Client Identification: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:35 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-005A Matrix: Ground Water Method: EPA 9056A Description: MW-103-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WC20C24A CMB 1. Chloride 25000 μg/L 10000 1.0 03/24/20 PW20C24B 03/24/20 Residue, Filterable (TDS) Aliquot ID: 95575-005A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-103-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Date P. Batch A. Date A. Batch Dilution 1. Total Dissolved Solids 03/25/20 1500000 50000 WH20C25A 03/26/20 WH20C25A VO μg/L 1.3 95575-005B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-103-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N WU20D03A RKB 2500 μg/L 10 1.0 04/03/20 PW20D03A 04/03/20

RSN: 95575-200407152242



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 95575 Laboratory Sample Number: 95575-006

Order: 95575 Page: 32 of 98 Date: 04/07/20

184260 Client Identification: Applied Science & Technology, Sample Description: MW-100S-031920 Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 11:35 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-006C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-100S-031920 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 1.2 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-006D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-100S-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. T420C25A CJA 1. Arsenic 51 μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 2. Barium 190 100 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 3. Chromium U μg/L 10 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 4. Copper U 4.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 5.Lead U 3.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 6. Manganese U 10 04/07/20 T420D07A JLH 50 03/25/20 PT20C25A μg/L U 7. Nickel μg/L 20 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 10 Vanadium U LLV-4 0 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L Mercury by CVAAS, Total 95575-006D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-100S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/24/20 PM20C24B 03/24/20 M720C24B JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-006 Matrix: Ground Water Description: MW-100S-031920 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/25/20 PS20C25C 03/26/20 SF20C26A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/25/20 PS20C25C 03/26/20 SF20C26A RDK П 0.20 PS20C25C 3. Aroclor-1232 μg/L 1.0 03/25/20 03/26/20 SF20C26A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/25/20 PS20C25C 03/26/20 SF20C26A RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/25/20 PS20C25C 03/26/20 SF20C26A RDK 6. Aroclor-1254 U 0.20 1.0 03/25/20 PS20C25C 03/26/20 SF20C26A RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/25/20 PS20C25C 03/26/20 SF20C26A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584 8660 S. Mackinaw Trail



Order: 95575 Page: 33 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-100S-031920

Chain of Custody:

184260

Client Project Name: 1-

1-10860

Sample No:

Collect Date:

03/19/20

Client Project No:

1-10860

Sample Matrix: Gr

Ground Water Collect Time:

11:35

Sample Comments:

Definitions: Q: Q

Polychlorinated Biphenyls (PCBs)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

95575-006 Matrix: Ground Water

Method: EPA 3510C/EPA 8082A Description: MW-100S-031920

					Preparation		Analysis	
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/25/20	PS20C25C	03/26/20	SF20C26A RDK
‡ 9. Aroclor-1268	U	ua/L	0.20	1.0	03/25/20	PS20C25C	03/26/20	SF20C26A RDK

Aliquot ID:

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 95575-006E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-100S-031920

						Prepa	ration	F	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acetone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
3. Benzene	18		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
4. Bromobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
5. Bromochloromethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
6. Bromodichloromethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
7. Bromoform	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
8. Bromomethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
9.2-Butanone	U		μg/L	25	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
10. n-Butylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
11. sec-Butylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
12. tert-Butylbenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
13. Carbon Disulfide	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
15. Chlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
16. Chloroethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
17. Chloroform	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
18. Chloromethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
19.2-Chlorotoluene	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
21. Dibromochloromethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
22. Dibromomethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
23.1,2-Dichlorobenzene	1.8		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A	JM

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 Page: 34 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100S-031920

Ground Water

Chain of Custody:

184260

Client Project Name: 1-1

1-10860

Sample No:

Sample Matrix:

Collect Date:

03/19/20

Client Project No:

Samp

Collect Time:

ne: **11:35**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 95575-006E

Method: EPA 5030C/EPA 8260D

Description: MW-100S-031920

Parameter(s) Result Q Units 30. cis-1,2-Dichloroethene 3.3 μg/L 31. trans-1,2-Dichloropethene U μg/L 32. 1,2-Dichloropropane U μg/L 33. cis-1,3-Dichloropropene U μg/L 34. trans-1,3-Dichloropropene U μg/L 35. Ethylbenzene 2.2 μg/L 36. Ethylene Dibromide U μg/L 37. 2-Hexanone U μg/L 38. Isopropylbenzene U μg/L 39. 4-Methyl-2-pentanone U μg/L 40. Methylene Chloride U μg/L 41. 2-Methylnaphthalene 5.8 μg/L 42. MTBE U μg/L 43. Naphthalene 55 μg/L 44. n-Propylbenzene 1.9 μg/L 45. Styrene U μg/L 46. 1,1,1,2-Tetrachloroethane U μg/L 47. 1,1,2,2-Tetrachloroethane U μg/L 49. Toluene 5.0 μg/L 50. 1,2,4-Trichlo	Reporting Limit 1.0 1.0 1.0 0.50 0.50 1.0 1.0 50 5.0 5.	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	P. Date 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	P. Batch VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A	A. Date 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	A. Batch VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A
31.trans-1,2-Dichloroethene U µg/L 32.1,2-Dichloropropane U µg/L 33.cis-1,3-Dichloropropene U µg/L 34.trans-1,3-Dichloropropene U µg/L 35. Ethylene Dibromide U µg/L 36. Ethylene Dibromide U µg/L 37.2-Hexanone U µg/L 38. Isopropylbenzene U µg/L 39.4-Methyl-2-pentanone U µg/L 40. Methylene Chloride U µg/L 41.2-Methylnaphthalene 5.8 µg/L 42. MTBE U µg/L 43. Naphthalene 55 µg/L 44. n-Propylbenzene 1.9 µg/L 45. Styrene U µg/L 45. Styrene U µg/L 45. Tetrachloroethane U µg/L 47. 1,1,2-Tetrachloroethane U µg/L 49. Toluene 5.0 µg/L 50. 1,2,4-Trichloroethane U µg/L 51. 1,1,1-Trichloroethane U µg/L 53. Trichloroethane U µg/L </th <th>1.0 1.0 0.50 0.50 1.0 1.0 50 5.0 5.0 5.0</th> <th>1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0</th> <th>03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20</th> <th>VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A</th> <th>03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20</th> <th>VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A</th>	1.0 1.0 0.50 0.50 1.0 1.0 50 5.0 5.0 5.0	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A	03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A
32.1,2-Dichloropropane U μg/L 33. cis-1,3-Dichloropropene U μg/L 34. trans-1,3-Dichloropropene U μg/L 35. Ethylene Dibromide U μg/L 36. Ethylene Dibromide U μg/L 37.2-Hexanone U μg/L 38. Isopropylbenzene U μg/L 39. 4-Methyl-2-pentanone U μg/L 40. Methylene Chloride U μg/L 41.2-Methylnaphthalene 5.8 μg/L 42. MTBE U μg/L 43. Naphthalene 55 μg/L 44. n-Propylbenzene 1.9 μg/L 45. Styrene U μg/L 46. 1,1,1,2-Tetrachloroethane U μg/L 47. 1,1,2,2-Tetrachloroethane U μg/L 49. Toluene 5.0 μg/L 50. 1,2,4-Trichloroethane U μg/L 51. 1,1,1-Trichloroethane U μg/L 52. 1,1,2-Trichloroethane U μg/L 53. Trichloroethene U μg/L	1.0 0.50 0.50 1.0 1.0 50 5.0 5.0 5.0 5.0	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A	03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A
33. cis-1,3-Dichloropropene 34. trans-1,3-Dichloropropene U µg/L 35. Ethylbenzene 2.2 µg/L 36. Ethylene Dibromide U µg/L 37. 2-Hexanone U µg/L 38. Isopropylbenzene U µg/L 39. 4-Methyl-2-pentanone U µg/L 40. Methylene Chloride U µg/L 41. 2-Methylnaphthalene 5.8 µg/L 42. MTBE U µg/L 43. Naphthalene 55 µg/L 44. n-Propylbenzene U µg/L 45. Styrene U µg/L 46. 1,1,1,2-Tetrachloroethane U µg/L 47. 1,1,2,2-Tetrachloroethane U µg/L 48. Tetrachloroethene U µg/L 49. Toluene 50. 1,2,4-Trichlorobenzene U µg/L 51. 1,1,1-Trichloroethane U µg/L 52. 1,1,2-Trichloroethane U µg/L 53. Trichloroethene U µg/L	0.50 0.50 1.0 1.0 50 5.0 5.0 5.0 5.0	1.0 1.0 1.0 1.0 1.0 1.0 1.0	03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A	03/23/20 03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A
34. trans-1,3-Dichloropropene U μg/L 35. Ethylbenzene 2.2 μg/L 36. Ethylene Dibromide U μg/L 37. 2-Hexanone U μg/L 38. Isopropylbenzene U μg/L 39. 4-Methyl-2-pentanone U μg/L 40. Methylene Chloride U μg/L 41. 2-Methylnaphthalene 5.8 μg/L 42. MTBE U μg/L 43. Naphthalene 55 μg/L 44. n-Propylbenzene 1.9 μg/L 45. Styrene U μg/L 46. 1,1,1,2-Tetrachloroethane U μg/L 47. 1,1,2,2-Tetrachloroethane U μg/L 49. Toluene 5.0 μg/L 50. 1,2,4-Trichloroethane U μg/L 51. 1,1,1-Trichloroethane U μg/L 52. 1,1,2-Trichloroethane U μg/L 53. Trichloroethene U μg/L	0.50 1.0 1.0 50 5.0 50 5.0 5.0	1.0 1.0 1.0 1.0 1.0 1.0	03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A	03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A
35. Ethylbenzene 2.2 μg/L 36. Ethylene Dibromide U μg/L 37. 2-Hexanone U μg/L 38. Isopropylbenzene U μg/L 39. 4-Methyl-2-pentanone U μg/L 40. Methylene Chloride U μg/L 41. 2-Methylnaphthalene 5.8 μg/L 42. MTBE U μg/L 43. Naphthalene 55 μg/L 44. n-Propylbenzene 1.9 μg/L 45. Styrene U μg/L 46. 1,1,1,2-Tetrachloroethane U μg/L 47. 1,1,2,2-Tetrachloroethane U μg/L 49. Toluene 5.0 μg/L 50. 1,2,4-Trichloroethane U μg/L 51. 1,1,1-Trichloroethane U μg/L 52. 1,1,2-Trichloroethane U μg/L 53. Trichloroethene U μg/L	1.0 1.0 50 5.0 50 5.0 5.0 5.0	1.0 1.0 1.0 1.0 1.0	03/23/20 03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A VM20C23A	03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A
36. Ethylene Dibromide U μg/L 37. 2-Hexanone U μg/L 38. Isopropylbenzene U μg/L 39. 4-Methyl-2-pentanone U μg/L 40. Methylene Chloride U μg/L 41. 2-Methylnaphthalene 5.8 μg/L 42. MTBE U μg/L 43. Naphthalene 55 μg/L 44. n-Propylbenzene 1.9 μg/L 45. Styrene U μg/L 46. 1, 1, 1, 2-Tetrachloroethane U μg/L 47. 1, 1, 2, 2-Tetrachloroethane U μg/L 49. Toluene 5.0 μg/L 50. 1, 2, 4-Trichloroethane U μg/L 51. 1, 1, 1-Trichloroethane U μg/L 52. 1, 1, 2-Trichloroethane U μg/L 53. Trichloroethene U μg/L	1.0 50 5.0 50 5.0 5.0 5.0	1.0 1.0 1.0 1.0	03/23/20 03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A VM20C23A	03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A
37.2-Hexanone U µg/L 38. Isopropylbenzene U µg/L 39.4-Methyl-2-pentanone U µg/L 40. Methylene Chloride U µg/L 41.2-Methylnaphthalene 5.8 µg/L 42. MTBE U µg/L 43. Naphthalene 55 µg/L 44. n-Propylbenzene 1.9 µg/L 45. Styrene U µg/L 46. 1,1,1,2-Tetrachloroethane U µg/L 47. 1,1,2,2-Tetrachloroethane U µg/L 48. Tetrachloroethene U µg/L 49. Toluene 5.0 µg/L 50. 1,2,4-Trichloroethane U µg/L 51. 1,1,1-Trichloroethane U µg/L 52. 1,1,2-Trichloroethane U µg/L 53. Trichloroethene U µg/L	50 5.0 50 5.0 5.0 5.0	1.0 1.0 1.0 1.0	03/23/20 03/23/20 03/23/20	VM20C23A VM20C23A VM20C23A	03/23/20 03/23/20	VM20C23A VM20C23A
38. Isopropylbenzene U μg/L 39. 4-Methyl-2-pentanone U μg/L 40. Methylene Chloride U μg/L 41. 2-Methylnaphthalene 5.8 μg/L 42. MTBE U μg/L 43. Naphthalene 55 μg/L 44. n-Propylbenzene 1.9 μg/L 45. Styrene U μg/L 46. 1,1,1,2-Tetrachloroethane U μg/L 47. 1,1,2,2-Tetrachloroethane U μg/L 49. Toluene 5.0 μg/L 49. Toluene 5.0 μg/L 50. 1,2,4-Trichloroethane U μg/L 51. 1,1,1-Trichloroethane U μg/L 52. 1,1,2-Trichloroethane U μg/L 53. Trichloroethene U μg/L	5.0 50 5.0 5.0 5.0	1.0 1.0 1.0	03/23/20 03/23/20	VM20C23A VM20C23A	03/23/20	VM20C23A
39.4-Methyl-2-pentanone U μg/L 40. Methylene Chloride U μg/L 41.2-Methylnaphthalene 5.8 μg/L 42. MTBE U μg/L 43. Naphthalene 55 μg/L 44.n-Propylbenzene 1.9 μg/L 45. Styrene U μg/L 46.1,1,1,2-Tetrachloroethane U μg/L 47.1,1,2,2-Tetrachloroethane U μg/L 48. Tetrachloroethene U μg/L 49. Toluene 5.0 μg/L 50.1,2,4-Trichloroethane U μg/L 51.1,1,1-Trichloroethane U μg/L 52.1,1,2-Trichloroethane U μg/L 53. Trichloroethene U μg/L	50 5.0 5.0 5.0	1.0 1.0	03/23/20	VM20C23A		
40. Methylene Chloride U μg/L 41. 2-Methylnaphthalene 5.8 μg/L 42. MTBE U μg/L 43. Naphthalene 55 μg/L 44. n-Propylbenzene 1.9 μg/L 45. Styrene U μg/L 46. 1,1,1,2-Tetrachloroethane U μg/L 47. 1,1,2,2-Tetrachloroethane U μg/L 48. Tetrachloroethene U μg/L 49. Toluene 5.0 μg/L 50. 1,2,4-Trichloroethane U μg/L 51. 1,1,1-Trichloroethane U μg/L 52. 1,1,2-Trichloroethane U μg/L 53. Trichloroethene U μg/L	5.0 5.0 5.0	1.0			03/23/20	
41.2-Methylnaphthalene 5.8 µg/L 42.MTBE U µg/L 43.Naphthalene 55 µg/L 44.n-Propylbenzene 1.9 µg/L 45.Styrene U µg/L 46.1,1,1,2-Tetrachloroethane U µg/L 47.1,1,2,2-Tetrachloroethane U µg/L 48.Tetrachloroethene U µg/L 49.Toluene 5.0 µg/L 50.1,2,4-Trichloroethane U µg/L 51.1,1,1-Trichloroethane U µg/L 52.1,1,2-Trichloroethane U µg/L 53.Trichloroethene U µg/L	5.0 5.0		03/23/20		00/20/20	VM20C23A
42.MTBE U μg/L 43.Naphthalene 55 μg/L 44.n-Propylbenzene 1.9 μg/L 45.Styrene U μg/L 46.1,1,1,2-Tetrachloroethane U μg/L 47.1,1,2,2-Tetrachloroethane U μg/L 48. Tetrachloroethene U μg/L 49. Toluene 5.0 μg/L 50.1,2,4-Trichloroethane U μg/L 51.1,1,1-Trichloroethane U μg/L 52.1,1,2-Trichloroethane U μg/L 53. Trichloroethene U μg/L	5.0	1.0		VM20C23A	03/23/20	VM20C23A
43. Naphthalene 55 µg/L 44. n-Propylbenzene 1.9 µg/L 45. Styrene U µg/L 46. 1,1,1,2-Tetrachloroethane U µg/L 47. 1,1,2,2-Tetrachloroethane U µg/L 48. Tetrachloroethene U µg/L 49. Toluene 5.0 µg/L 50. 1,2,4-Trichloroethane U µg/L 51. 1,1,1-Trichloroethane U µg/L 52. 1,1,2-Trichloroethane U µg/L 53. Trichloroethene U µg/L			03/23/20	VM20C23A	03/23/20	VM20C23A
44.n-Propylbenzene 1.9 µg/L 45. Styrene U µg/L 46.1,1,1,2-Tetrachloroethane U µg/L 47.1,1,2,2-Tetrachloroethane U µg/L 48. Tetrachloroethene U µg/L 49. Toluene 5.0 µg/L 50.1,2,4-Trichlorobenzene U µg/L 51.1,1,1-Trichloroethane U µg/L 52.1,1,2-Trichloroethane U µg/L 53. Trichloroethene U µg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
45. Styrene U μg/L 46. 1,1,1,2-Tetrachloroethane U μg/L 47. 1,1,2,2-Tetrachloroethane U μg/L 48. Tetrachloroethene U μg/L 49. Toluene 5.0 μg/L 50. 1,2,4-Trichloroethane U μg/L 51. 1,1,1-Trichloroethane U μg/L 52. 1,1,2-Trichloroethane U μg/L 53. Trichloroethene U μg/L		1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
46.1,1,1,2-Tetrachloroethane U μg/L 47.1,1,2,2-Tetrachloroethane U μg/L 48. Tetrachloroethene U μg/L 49. Toluene 5.0 μg/L 50.1,2,4-Trichlorobenzene U μg/L 51.1,1,1-Trichloroethane U μg/L 52.1,1,2-Trichloroethane U μg/L 53. Trichloroethene U μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
47.1,1,2,2-Tetrachloroethane U µg/L 48. Tetrachloroethene U µg/L 49. Toluene 5.0 µg/L 50.1,2,4-Trichlorobenzene U µg/L 51.1,1,1-Trichloroethane U µg/L 52.1,1,2-Trichloroethane U µg/L 53. Trichloroethene U µg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
48. Tetrachloroethene U µg/L 49. Toluene 5.0 µg/L 50. 1,2,4-Trichlorobenzene U µg/L 51. 1,1,1-Trichloroethane U µg/L 52. 1,1,2-Trichloroethane U µg/L 53. Trichloroethene U µg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
49. Toluene 5.0 μg/L 50.1,2,4-Trichlorobenzene U μg/L 51.1,1,1-Trichloroethane U μg/L 52.1,1,2-Trichloroethane U μg/L 53. Trichloroethene U μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
50.1,2,4-Trichlorobenzene U μg/L 51.1,1,1-Trichloroethane U μg/L 52.1,1,2-Trichloroethane U μg/L 53.Trichloroethene U μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
51.1,1,1-Trichloroethane U µg/L 52.1,1,2-Trichloroethane U µg/L 53. Trichloroethene U µg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
52.1,1,2-Trichloroethane U μg/L 53.Trichloroethene U μg/L	5.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
53. Trichloroethene U µg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
54. Trichlorofluoromethane U µg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
55.1,2,3-Trichloropropane U μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
56.1,2,3-Trimethylbenzene 3.0 μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
57.1,2,4-Trimethylbenzene 4.6 μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
58.1,3,5-Trimethylbenzene 4.4 μ g/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
59. Vinyl Chloride 4.5 μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
60. m&p-Xylene 13 μg/L	2.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
61. o-Xylene 6.2 μg/L		1.0	03/23/20	VM20C23A	03/23/20	VM20C23A
62. Xylenes 19 μg/L	1.0	1.0	03/23/20	VM20C23A	03/23/20	VM20C23A



Order: 95575 35 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-100S-031920

Ground Water

Chain of Custody:

184260

1-10860 Client Project Name:

Sample No:

Collect Date: Collect Time: 03/19/20

11:35

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	95575-006 MW-100S-03192		round Water		
						Prepai			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Acenaphthene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
2. Acenaphthylene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
3. Aniline	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
4. Anthracene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
‡ 5. Azobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
8. Benzo(b)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
10. Benzo(k)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
15.4-Bromophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
18.Carbazole	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
21.2-Chlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
22.4-Chlorophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
23. Chrysene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
25. Dibenzofuran	U	L+	μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
27. Diethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
28.2,4-Dimethylphenol	29		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
29. Dimethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
30.2,4-Dinitrophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
31.2,4-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	
32.2,6-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	
33. Fluoranthene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	
34. Fluorene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	
35. Hexachlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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Order: 95575 Page: 36 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-100S-031920 Chain of Custody:

184260

Client Project Name:

1-10860

Sample No:

Collect Date:

03/19/20

Client Project No:

1-10860

Sample Matrix: **Ground Water** Collect Time:

11:35

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS

Aliquot ID: 95575-006 Description: MW-100S-031920

Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 38. Hexachloroethane U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 39. Indeno(1,2,3-cd)pyrene U μg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 40. Isophorone U L+ 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L U 41.2-Methyl-4,6-dinitrophenol 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 1+ μg/L 42.2-Methylnaphthalene U 5.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 1.0 u PS20C24A 03/24/20 43.2-Methylphenol μg/L 5.0 1.0 03/24/20 SN20C24B GJP ‡ 44.3&4-Methylphenol 45 μg/L 10 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 45. Naphthalene 42 5.0 SN20C24B GJP μg/L 1.0 03/24/20 PS20C24A 03/24/20 46.2-Nitroaniline U 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP ua/L U 20 47.3-Nitroaniline μg/L 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 48.4-Nitroaniline U L+ 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 49. Nitrobenzene U μg/L 3.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U L+ μg/L 5.0 1.0 PS20C24A 03/24/20 SN20C24B GJP 50.2-Nitrophenol 03/24/20 51.4-Nitrophenol U L+ μg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U μg/L 5.0 PS20C24A 03/24/20 52. N-Nitrosodimethylamine 1.0 03/24/20 SN20C24B GJP 53. N-Nitrosodi-n-propylamine U 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 54. N-Nitrosodiphenylamine U L+ 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L U 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B 55. Di-n-octyl Phthalate μg/L U 56.2,2'-Oxybis(1-chloropropane) 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L U 57. Pentachlorophenol μg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 4.1 L+ 2.0 1.0 58. Phenanthrene μg/L 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23 59. Phenol μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 60. Pyrene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 5.0 1.0 03/24/20 PS20C24A SN20C24B GJP 61. Pvridine μg/L 03/24/20 62.1,2,4-Trichlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 63.2,4,5-Trichlorophenol 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP L+ μg/L 64.2,4,6-Trichlorophenol U μg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP

pH, Electrometric

Aliquot ID:

95575-006A

Matrix: Ground Water

Method: EPA 9040C

Description: MW-100S-031920

						Prepara	ation	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1.pH	12.4	Н	pH Units	-1.00	1.0	NA	NA	03/24/20 15:44	WD20C24C	MMA



Order: 95575 Page: 37 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: MW-100S-031920 Chain of Custody: 184260 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 03/19/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 11:35 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-006A Matrix: Ground Water Method: EPA 9056A Description: MW-100S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WC20C24A CMB 1. Chloride 79000 μg/L 10000 1.0 03/24/20 PW20C24B 03/24/20 Residue, Filterable (TDS) Aliquot ID: 95575-006A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-100S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Batch A. Date A. Batch Dilution P. Date 1. Total Dissolved Solids WH20C25A VO 1400000 50000 WH20C25A 03/26/20 μg/L 1.3 03/25/20 95575-006B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-100S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. ‡ 1. Ammonia-N WU20D03A RKB 9100 μg/L 10 1.0 04/03/20 PW20D03A 04/03/20



11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 95575 Laboratory Sample Number: 95575-007

Order: 95575 Page: 38 of 98 Date: 04/07/20

184260 Client Identification: Applied Science & Technology, Sample Description: MW-102D-031920 Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:30 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-007C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-102D-031920 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 0.11 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-007D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-102D-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C25A CJA 1. Arsenic μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 2. Barium U 100 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 3. Chromium U μg/L 10 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 4. Copper U 4.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L U 5.Lead 3.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 6. Manganese U 10 04/07/20 T420D07A JLH 50 03/25/20 PT20C25A μg/L U 7. Nickel μg/L 20 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 10 Vanadium U LLV-4 0 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L Mercury by CVAAS, Total 95575-007D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-102D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/24/20 PM20C24B 03/24/20 M720C24B JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-007 Matrix: Ground Water Description: MW-102D-031920 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK П 0.20 3. Aroclor-1232 μg/L 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 6. Aroclor-1254 U 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

T: (810) 220-3300

T: (231) 775-8368



Order: 95575 Page: 39 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-102D-031920

Chain of Custody:

184260

Client Project Name: 1-10860

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Sample No:

Collect Date:
Collect Time:

03/19/20

10:30

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 95575-007 Matrix: Ground Water

Description: MW-102D-031920

Ground Water

					Prepa	aration	A	nalysis
Parameter(s)	Result C	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/27/20	PS20C27A	03/27/20	SF20C27A RDK
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	03/27/20	PS20C27A	03/27/20	SF20C27A RDK

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 95575-007E Matrix: Ground Water

Sample Matrix:

Method: EPA 5030C/EPA 8260D Description: MW-102D-031920

					Prepa	ration	Δ	Analysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Acetone	U	μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 2. Acrylonitrile	U	μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
3. Benzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
4. Bromobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
5. Bromochloromethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
6. Bromodichloromethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
7. Bromoform	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
8. Bromomethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
9.2-Butanone	U	μg/L	25	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
10. n-Butylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
11. sec-Butylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
12.tert-Butylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
13. Carbon Disulfide	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
14. Carbon Tetrachloride	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
15. Chlorobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
16. Chloroethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
17. Chloroform	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
18. Chloromethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
19.2-Chlorotoluene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
20.1,2-Dibromo-3-chloropropane (SIM)	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
21. Dibromochloromethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
22. Dibromomethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
23.1,2-Dichlorobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
24.1,3-Dichlorobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
25.1,4-Dichlorobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
26. Dichlorodifluoromethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
27.1,1-Dichloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
28.1,2-Dichloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
29.1,1-Dichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 40 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-102D-031920

Chain of Custody:

184260

Client Project Name:

Sample No:

Collect Date:

03/19/20

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time: 10:30

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D

Aliquot ID: 95575-007E Description: MW-102D-031920

Matrix: Ground Water

						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	. JI
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
35. Ethylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
36. Ethylene Dibromide	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
37.2-Hexanone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
38. Isopropylbenzene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
39.4-Methyl-2-pentanone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
40. Methylene Chloride	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
41.2-Methylnaphthalene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
42.MTBE	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	ر ا
43. Naphthalene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
44. n-Propylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
45. Styrene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	. J
46.1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	ر ا
47.1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	ı J
48. Tetrachloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
49. Toluene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
50.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
52.1,1,2-Trichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
53. Trichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	. J
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	. J
55.1,2,3-Trichloropropane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	, J
56.1,2,3-Trimethylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
57.1,2,4-Trimethylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
58.1,3,5-Trimethylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
59. Vinyl Chloride	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
60.m&p-Xylene	U		μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
61.o-Xylene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
62. Xylenes	U		μg/L	3.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	



Order: 95575 Page: 41 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-102D-031920 Chain of Custody:

184260

Client Project Name:

1-10860

Sample No:

Collect Date:

03/19/20

1-10860 Client Project No:

Sample Matrix: **Ground Water** Collect Time:

10:30

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E

Aliquot ID: 95575-007 Description: MW-102D-031920

Matrix: Ground Water

Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 1. Acenaphthene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 2. Acenaphthylene U ua/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 3. Aniline U 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L U PS20C24A 4 Anthracene 5.0 1.0 03/24/20 03/24/20 SN20C24B GJP μg/L 5. Azobenzene U 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L U 6. Benzo(a)anthracene μg/L 10 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 7. Benzo(a)pyrene U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U PS20C24A 03/24/20 SN20C24B GJP 8. Benzo(b)fluoranthene 1+ μg/L 10 1.0 03/24/20 9. Benzo(ghi)perylene U 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP ua/L U 10. Benzo(k)fluoranthene L+ μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 11. Benzyl Alcohol U 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 12. Bis(2-chloroethoxy)methane U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U PS20C24A SN20C24B GJP 13. Bis(2-chloroethyl)ether ua/L 10 1.0 03/24/20 03/24/20 14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15.4-Bromophenyl Phenylether U 5.0 1.0 PS20C24A 03/24/20 SN20C24B GJP L+ μg/L 03/24/20 16. Butyl Benzyl Phthalate U 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L U 17. Di-n-butyl Phthalate 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L U 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B 18. Carbazole μg/L 5.0 GJP 19.4-Chloro-3-methylphenol U 5.0 1.0 PS20C24A 03/24/20 SN20C24B GJP μg/L 03/24/20 U 20.2-Chloronaphthalene μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 5.0 1.0 PS20C24A 21.2-Chlorophenol µg/L 03/24/20 03/24/20 SN20C24B GJP 22.4-Chlorophenyl Phenylether U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 23. Chrysene μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U L+ 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP µg/L U 1.0 PS20C24A 03/24/20 SN20C24B GJP 26.2.4-Dichlorophenol 5.0 03/24/20 μg/L 27. Diethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 5.0 1.0 PS20C24A 03/24/20 SN20C24B GJP 28.2,4-Dimethylphenol μg/L 03/24/20 U 5.0 PS20C24A 29. Dimethyl Phthalate μg/L 1.0 03/24/20 03/24/20 SN20C24B GJP U 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30.2.4-Dinitrophenol μg/L 31.2,4-Dinitrotoluene U L+ 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP µg/L U 32.2.6-Dinitrotoluene L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP µg/L U 34. Fluorene μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 5.0 1.0 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene μg/L 03/24/20 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U V-PS20C24A SN20C24B GJP 37. Hexachlorocyclopentadiene μg/L 5.0 1.0 03/24/20 03/24/20

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Order: 95575 Page: 42 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-102D-031920

Ground Water

Aliquot ID:

95575-007

Description: MW-102D-031920

Chain of Custody:

184260

10:30

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date:
Collect Time:

Matrix: Ground Water

03/19/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier

Method: EPA 3510C/EPA 8270E

62.1,2,4-Trichlorobenzene

63.2,4,5-Trichlorophenol

64.2,4,6-Trichlorophenol

Base/Neutral/Acid Semivolatiles by GC/MS

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 38. Hexachloroethane U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 39. Indeno(1,2,3-cd)pyrene U ua/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 40. Isophorone U L+ 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L U 41.2-Methyl-4,6-dinitrophenol 1+ 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 42.2-Methylnaphthalene U 5.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 1.0 03/24/20 u PS20C24A 03/24/20 43.2-Methylphenol μg/L 5.0 1.0 SN20C24B GJP ‡ 44.3&4-Methylphenol U μg/L 10 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 45. Naphthalene u 5.0 SN20C24B GJP μg/L 1.0 03/24/20 PS20C24A 03/24/20 U 46.2-Nitroaniline 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP ua/L U 20 47.3-Nitroaniline μg/L 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 48.4-Nitroaniline U L+ 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 49. Nitrobenzene U μg/L 3.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U L+ μg/L 5.0 1.0 PS20C24A 03/24/20 SN20C24B GJP 50 2-Nitrophenol 03/24/20 51.4-Nitrophenol U L+ μg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 5.0 1.0 PS20C24A 03/24/20 52. N-Nitrosodimethylamine μg/L 03/24/20 SN20C24B GJP 53. N-Nitrosodi-n-propylamine U 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L 54. N-Nitrosodiphenylamine U L+ 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L U 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B 55. Di-n-octyl Phthalate μg/L 56.2,2'-Oxybis(1-chloropropane) U 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP μg/L U 57. Pentachlorophenol μg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 2.0 1.0 58. Phenanthrene L+ μg/L 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 59. Phenol µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 60. Pyrene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP U 5.0 1.0 03/24/20 PS20C24A SN20C24B GJP 61. Pvridine μg/L 03/24/20

pH, Electrometric Aliquot ID: 95575-007A Matrix: Ground Water

μg/L

μg/L

μg/L

Method: EPA 9040C Description: MW-102D-031920

U

U

U

L+

Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Date A. Date A. Batch Dilution P. Batch Н 8.08 -1.00 1.0 NA NA 03/24/20 14:17 WD20C24A AMW 1.pH pH Units

5.0

5.0

4.0

1.0

1.0

1.0

03/24/20

03/24/20

03/24/20

PS20C24A

PS20C24A

PS20C24A

03/24/20

03/24/20

03/24/20

SN20C24B GJP

SN20C24B GJP

SN20C24B GJP

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Order: 95575 Page: 43 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: MW-102D-031920 Chain of Custody: 184260 Client Identification: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:30 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-007A Matrix: Ground Water Method: EPA 9056A Description: MW-102D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WC20C24A CMB 1. Chloride 16000 μg/L 10000 1.0 03/24/20 PW20C24B 03/24/20 Residue, Filterable (TDS) Aliquot ID: 95575-007A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-102D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch P. Date 1. Total Dissolved Solids WH20C25A VO 320000 50000 WH20C25A 03/26/20 μg/L 1.3 03/25/20 95575-007B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-102D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N WU20D03A RKB 61 μg/L 10 1.0 04/03/20 PW20D03A 04/03/20



Order: 95575 Page: 44 of 98 Date: 04/07/20

184260 Client Identification: Applied Science & Technology, Sample Description: MW-109D-031820 Chain of Custody: Inc. - Brighton 1-10860 03/18/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:15 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-008C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-109D-031820 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 0.072 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-008D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-109D-031820 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C25A CJA 1. Arsenic μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 2. Barium 520 100 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 3. Chromium U μg/L 10 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 4. Copper U 4.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 5.Lead U 3.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L 6. Manganese 120 10 04/07/20 T420D07A JLH 50 03/25/20 PT20C25A μg/L 7. Nickel U μg/L 20 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA 10 Vanadium U IIV-4 0 10 03/25/20 PT20C25A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/25/20 PT20C25A 03/25/20 T420C25A CJA μg/L Mercury by CVAAS, Total 95575-008D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-109D-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/27/20 PM20C27A 03/27/20 M720C27A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-008 Matrix: Ground Water Description: MW-109D-031820 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK П 0.20 3. Aroclor-1232 μg/L 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 6. Aroclor-1254 U 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311

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Cadillac, MI 49601

8660 S. Mackinaw Trail



Order: 95575 Page: 45 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-109D-031820

Chain of Custody:

184260

Client Project Name: 1-

1-10860

Sample No:

Collect Date:

03/18/20

Client Project No: 1-10860

Sample Matrix:

Ground Water

Collect Time:

15:15

Sample Comments:

Definitions: Q:

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 95575-008 Matrix: Ground Water

Description: MW-109D-031820

					Prepa	ration	А	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/27/20	PS20C27A	03/27/20	SF20C27A RDK
± 9 Aroclor-1268	U	ua/l	0.20	1.0	03/27/20	PS20C27A	03/27/20	SF20C27A RDK

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 95575-008E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D

Description: MW-109D-031820

Preparation Analysis Result Ω Units Reporting Limit Dilution P. Date Parameter(s) P. Batch A. Date A. Batch Init. 1. Acetone U Y1 03/26/20 VM20C26A 03/26/20 VM20C26A JMF µg/L 50 5.0 2. Acrylonitrile U Y1 μg/L 5.0 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF 3. Benzene U Y1 2.5 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF μg/L 4. Bromobenzene U Y1 2.5 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF μg/L U 2.5 5.0 03/26/20 03/26/20 5. Bromochloromethane Y1 VM20C26A VM20C26A JMF μg/L 6. Bromodichloromethane U Y1 μg/L 2.5 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF U Y1 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF 7. Bromoform μg/L 5.0 8. Bromomethane U Y1 μg/L 10 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF 9 2-Butanone U 25 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF Y1 μg/L 10. n-Butylbenzene U 2.5 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF Y1 μg/L U 25 5.0 03/26/20 VM20C26A 03/26/20 11. sec-Butylbenzene Y1 VM20C26A JMF μg/L 12. tert-Butylbenzene U 03/26/20 VM20C26A 03/26/20 VM20C26A JMF Y1 μg/L 2.5 5.0 13. Carbon Disulfide U Y1 5.0 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF μg/L 14 Carbon Tetrachloride U Y1 μg/L 5.0 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF U Y1 25 03/26/20 VM20C26A 03/26/20 15. Chlorobenzene μg/L 5.0 VM20C26A JMF 16. Chloroethane U Y1 5.0 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF μg/L μg/L 17. Chloroform U Y1 2.5 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF 18. Chloromethane U Y1 μg/L 5.0 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF 19.2-Chlorotoluene U Y1 μg/L 5.0 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF ‡ 20.1,2-Dibromo-3-chloropropane (SIM) U Y1 2.5 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF μg/L 21. Dibromochloromethane U Y1 5.0 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF μg/L U Y1 5.0 5.0 22. Dibromomethane μg/L 03/26/20 VM20C26A 03/26/20 VM20C26A JMF 23.1,2-Dichlorobenzene U Y1 μg/L 2.5 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF U 25 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF 24.1.3-Dichlorobenzene Y1 μg/L 25.1,4-Dichlorobenzene U Y1 2.5 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF ua/L U 26. Dichlorodifluoromethane Y1 μg/L 5.0 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF 27.1,1-Dichloroethane U Y1 25 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF μg/L 28.1,2-Dichloroethane U Y1 μg/L 2.5 5.0 03/26/20 VM20C26A 03/26/20 VM20C26A JMF U Y1 2.5 03/26/20 VM20C26A 03/26/20 VM20C26A JMF 29.1.1-Dichloroethene μg/L 5.0

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Order: 95575 46 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-109D-031820

Chain of Custody:

184260

Client Project Name: 1-10860

Sample No:

Collect Date:

03/18/20

Client Project No: 1-10860

Definitions:

Sample Comments:

Sample Matrix: **Ground Water** Collect Time: 15:15

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D

Aliquot ID:

95575-008E

Matrix: Ground Water

Description: MW-109D-031820

	LI A 30300/LI A 02000 Description. Inter-1030-03						33D-031020					
						Prepa	ration	А	nalysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lni		
30. cis-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JN		
31. trans-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JN		
32.1,2-Dichloropropane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J١		
33. cis-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J۱		
34. trans-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JN		
35. Ethylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J١		
36. Ethylene Dibromide	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JN		
37.2-Hexanone	U	Y1	μg/L	50	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J١		
38. Isopropylbenzene	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JN		
39.4-Methyl-2-pentanone	U	Y1	μg/L	50	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	Jľ		
40. Methylene Chloride	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JI		
41.2-Methylnaphthalene	U	Y1	μg/L	15	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JI		
42.MTBE	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JI		
43. Naphthalene	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
44. n-Propylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
45. Styrene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
46.1,1,1,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
47.1,1,2,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
48. Tetrachloroethene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
49. Toluene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
50.1,2,4-Trichlorobenzene	U	Y1	μg/L	10	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JI		
51.1,1,1-Trichloroethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JI		
52.1,1,2-Trichloroethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JI		
53. Trichloroethene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JI		
54. Trichlorofluoromethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	. JI		
55.1,2,3-Trichloropropane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JI		
56.1,2,3-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
57.1,2,4-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
58.1,3,5-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
59. Vinyl Chloride	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JI		
60. m&p-Xylene	6.3	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JI		
61.o-Xylene	2.8	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		
‡ 62. Xylenes	9.1	Y1	μg/L	7.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	J		



Order: 95575 47 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-109D-031820

Ground Water

Chain of Custody:

184260

1-10860 Client Project Name:

Sample No:

Collect Date: Collect Time: 03/18/20

15:15

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	95575-008 MW-109D-031820		round Water		
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
3. Aniline	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
4. Anthracene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
8. Benzo(b)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
10. Benzo(k)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
15.4-Bromophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
‡ 18. Carbazole	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
22.4-Chlorophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
23. Chrysene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
25. Dibenzofuran	U	L+	μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
27. Diethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
29. Dimethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
30.2,4-Dinitrophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
31.2,4-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
32.2,6-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
34. Fluorene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
35. Hexachlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP

μg/L

U V-

1.0

03/24/20

PS20C24A

03/24/20

SN20C24B GJP

RSN: 95575-200407152242

5.0

37. Hexachlorocyclopentadiene



Order: 95575 Page: 48 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-109D-031820

Ground Water

Chain of Custody:

184260

15:15

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

03/18/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID:	95575-008 MW-109D-031820	Matrix: G	round Water		
wiethod. EFA 3310C/EFA 6270E				Des	сприоп.					
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepara P. Date	P. Batch	A. Date	nalysis A. Batch	Init
38. Hexachloroethane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	
40. Isophorone	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
41.2-Methyl-4,6-dinitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
43.2-Methylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
45. Naphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
46.2-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
47.3-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
48.4-Nitroaniline	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
49. Nitrobenzene	U		μg/L	3.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
50.2-Nitrophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
51.4-Nitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
54. N-Nitrosodiphenylamine	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
57. Pentachlorophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
58. Phenanthrene	2.3	L+	μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
59. Phenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
60. Pyrene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
61. Pyridine	U	L-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
63.2,4,5-Trichlorophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJI
pH, Electrometric				Aliq	uot ID:	95575-008A	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-109D-031820				
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

1.pH

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

12.6

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

-1.00

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

03/24/20 15:48 WD20C24C AMW

NA

NA



Order: 95575 Page: 49 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: MW-109D-031820 Chain of Custody: 184260 Client Identification: Inc. - Brighton 1-10860 03/18/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:15 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-008A Matrix: Ground Water Method: EPA 9056A Description: MW-109D-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WC20C24A CMB 1. Chloride 32000 μg/L 10000 1.0 03/24/20 PW20C24B 03/24/20 Residue, Filterable (TDS) Aliquot ID: 95575-008A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-109D-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Batch A. Date A. Batch Dilution P. Date 1. Total Dissolved Solids 2000000 50000 WH20C25A 03/26/20 WH20C25A VO μg/L 1.3 03/25/20 95575-008B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Description: MW-109D-031820 Method: SM 4500-NH3 G-2011 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N WU20D03A RKB 2900 μg/L 10 1.0 04/03/20 PW20D03A 04/03/20



Order: 95575 Page: 50 of 98 Date: 04/07/20

MW107D-031920 184260 Client Identification: Applied Science & Technology, Sample Description: Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:20 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-009C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW107D-031920 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 0.51 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-009D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW107D-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C26A CJA 1. Arsenic μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 2. Barium U 100 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 3. Chromium U μg/L 10 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 4. Copper 4.9 4.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 5.Lead U 3.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 6. Manganese 79 10 T420D07A JLH 50 03/26/20 PT20C26A 04/07/20 μg/L U 7. Nickel μg/L 20 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 10 Vanadium U LLV-4 0 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L Mercury by CVAAS, Total 95575-009D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW107D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/27/20 PM20C27A 03/27/20 M720C27A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-009 Matrix: Ground Water Description: MW107D-031920 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK П 0.20 3. Aroclor-1232 μg/L 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 6. Aroclor-1254 U 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311

Cadillac, MI 49601

8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

F: (231) 775-8584

T: (231) 775-8368



Order: 95575 51 of 98 Page: Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW107D-031920

Chain of Custody:

184260

Client Project Name:

1-10860

Sample No:

Collect Date:

03/19/20

Client Project No:

1-10860

Sample Matrix: **Ground Water** Collect Time:

15:20

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Method: EPA 5030C/EPA 8260D

					Prepa	ration	A	nalysis	
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/27/20	PS20C27A	03/27/20	SF20C27A	RDK
† 9 Δroclor-1268	- 11	ua/l	0.20	1.0	03/27/20	PS20C27A	03/27/20	SE20C27A	BUK

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID:

Aliquot ID:

95575-009E

95575-009

Description: MW107D-031920

Matrix: Ground Water

Description: MW107D-031920

						Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lni
1. Acetone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
2. Acrylonitrile	U		μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
3. Benzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
4. Bromobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
5. Bromochloromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J۱
6. Bromodichloromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	١J١
7. Bromoform	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
8. Bromomethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
9.2-Butanone	U		μg/L	25	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
10. n-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
11. sec-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
12. tert-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
13. Carbon Disulfide	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
15. Chlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
16. Chloroethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
17. Chloroform	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
18. Chloromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
19.2-Chlorotoluene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
21. Dibromochloromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
22. Dibromomethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A)

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 Page: 52 of 98 Date: 04/07/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW107D-031920

Chain of Custody:

184260

1-10860 Client Project Name:

Sample No:

Collect Date:

03/19/20

1-10860 Client Project No:

Ground Water Collect Time:

15:20

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	GC/MS		•	uot ID: cription:	95575-009E MW107D-031920	Matrix: G	round Water		
					Prepar	ation	Aı	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
31.trans-1,2-Dichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
32.1,2-Dichloropropane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
33. cis-1,3-Dichloropropene	U	μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
34. trans-1,3-Dichloropropene	U	μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
35. Ethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
36. Ethylene Dibromide	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
37.2-Hexanone	U	μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
38. Isopropylbenzene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
39.4-Methyl-2-pentanone	U	μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
40. Methylene Chloride	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 41.2-Methylnaphthalene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
42.MTBE	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
43. Naphthalene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
44. n-Propylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
45. Styrene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
46.1,1,1,2-Tetrachloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
47.1,1,2,2-Tetrachloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
48. Tetrachloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
49. Toluene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
50.1,2,4-Trichlorobenzene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
51.1,1,1-Trichloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
52.1,1,2-Trichloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
53. Trichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
54. Trichlorofluoromethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
55.1,2,3-Trichloropropane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
56.1,2,3-Trimethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
57.1,2,4-Trimethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
58.1,3,5-Trimethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
59. Vinyl Chloride	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
60.m&p-Xylene	U	μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
61.o-Xylene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 62. Xylenes	U	μg/L	3.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF



Order: 95575 Page: 53 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW107D-031920

Ground Water

Chain of Custody:

184260

Client Project Name: 1-10860

Sample No:

Collect Date:

03/19/20 15:20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	95575-009	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW107D-031920				
						Prepara		Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Acenaphthene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
3. Aniline	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
4. Anthracene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
‡ 5. Azobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
8. Benzo(b)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
10. Benzo(k)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
15.4-Bromophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
‡ 18.Carbazole	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
21.2-Chlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
22.4-Chlorophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
23. Chrysene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
25. Dibenzofuran	U	L+	μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
27. Diethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
29. Dimethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
30.2,4-Dinitrophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
31.2,4-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
32.2,6-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
33. Fluoranthene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
34. Fluorene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	
35. Hexachlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	

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Order: 95575 54 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW107D-031920 Chain of Custody:

184260

Client Project Name:

Collect Date:

03/19/20

1-10860 1-10860 Sample No: Sample Matrix:

Ground Water Collect Time:

15:20

Sample Comments:

Client Project No:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E

Aliquot ID:

95575-009

Matrix: Ground Water

Description: MW107D-031920

wethod: EPA 3510C/EPA 62/0E			Description: MW107D-031920								
						Prepai	ration	A	nalysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In	
38. Hexachloroethane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.	
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
40. Isophorone	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G.	
41.2-Methyl-4,6-dinitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
43.2-Methylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
44.3&4-Methylphenol	U		μg/L	10	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
45. Naphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
46.2-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
47.3-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
48.4-Nitroaniline	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
49. Nitrobenzene	U		μg/L	3.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
50.2-Nitrophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
51.4-Nitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
54. N-Nitrosodiphenylamine	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
57. Pentachlorophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
58. Phenanthrene	U	L+	μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
59. Phenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
60. Pyrene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
61. Pyridine	U	L-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
63.2,4,5-Trichlorophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	G	
pH. Electrometric				Δlin	uot ID:	95575-009A	Matrix: G	round Water			
Method: EPA 90/10C						MW107D-031020		. Jana Hatol			

Method: EPA 9040C Description: MW107D-031920

Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch Н -1.00 NA NA 03/24/20 14:27 WD20C24A AMW 1.pH 8.12 pH Units 1.0



Order: 95575 Page: 55 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: MW107D-031920 Chain of Custody: 184260 Client Identification: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:20 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-009A Matrix: Ground Water Method: EPA 9056A Description: MW107D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20C25C WC20C25A CMB 1. Chloride 24000 μg/L 10000 1.0 03/25/20 03/25/20 Residue, Filterable (TDS) Aliquot ID: 95575-009A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW107D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 03/25/20 380000 50000 WH20C25A 03/26/20 WH20C25A VO μg/L 1.3 Aliquot ID: 95575-009B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Description: MW107D-031920 Method: SM 4500-NH3 G-2011 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N WU20D03A RKB 430 μg/L 10 1.0 04/03/20 PW20D03A 04/03/20



Order: 95575 Page: 56 of 98 Date: 04/07/20

184260 Client Identification: Applied Science & Technology, Sample Description: MW-107S-031920 Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 16:15 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-010C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-107S-031920 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 4.0 mg/L 0.50 100 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-010D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-107S-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C26A CJA 1. Arsenic μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 2. Barium U 100 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 3. Chromium U μg/L 10 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 4. Copper U 4.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L U 5.Lead 3.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 6. Manganese U 10 T420D07A JLH 50 03/26/20 PT20C26A 04/07/20 μg/L U 7. Nickel μg/L 20 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 10 Vanadium U LLV-4 0 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L Mercury by CVAAS, Total 95575-010D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-107S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/27/20 PM20C27A 03/27/20 M720C27A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-010 Matrix: Ground Water Description: MW-107S-031920 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/27/20 PS20C27A 03/31/20 SF20C30A BDA 2. Aroclor-1221 U μg/L 0.20 1.0 03/27/20 PS20C27A 03/31/20 SF20C30A BDA П 0.20 3. Aroclor-1232 μg/L 1.0 03/27/20 PS20C27A 03/31/20 SF20C30A BDA μg/L 4. Aroclor-1242 U 0.20 1.0 03/27/20 PS20C27A 03/31/20 SF20C30A BDA U 5. Aroclor-1248 μg/L 0.20 1.0 03/27/20 PS20C27A 03/31/20 SF20C30A BDA 6. Aroclor-1254 U 0.20 1.0 03/27/20 PS20C27A 03/31/20 SF20C30A BDA μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/27/20 PS20C27A 03/31/20 SF20C30A BDA 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311

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F: (231) 775-8584

Cadillac, MI 49601

8660 S. Mackinaw Trail



Order: 95575 57 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-107S-031920

Chain of Custody:

184260

Client Project Name:

Sample No:

Collect Date:

03/19/20

Client Project No:

1-10860 1-10860

Sample Matrix:

Ground Water Collect Time: 16:15

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water

Method: EPA 3510C/EPA 8082A

Aliquot ID: Description: MW-107S-031920

Polychlorinated Biphenyls (PCBs)

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 8. Aroclor-1262 U μg/L 0.20 1.0 03/27/20 PS20C27A 03/31/20 SF20C30A BDA U 9. Aroclor-1268 μg/L 0.20 1.0 03/27/20 PS20C27A 03/31/20 SF20C30A BDA

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

95575-010E

95575-010

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-107S-031920

					Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Acetone	U	μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 2. Acrylonitrile	U	μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
3. Benzene	1.7	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
4. Bromobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
5. Bromochloromethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
6. Bromodichloromethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
7. Bromoform	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
8. Bromomethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
9.2-Butanone	U	μg/L	25	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
10. n-Butylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
11. sec-Butylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
12. tert-Butylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
13. Carbon Disulfide	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
14. Carbon Tetrachloride	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
15. Chlorobenzene	1.1	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
16. Chloroethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
17. Chloroform	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
18. Chloromethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
19.2-Chlorotoluene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
21. Dibromochloromethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
22. Dibromomethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
23.1,2-Dichlorobenzene	4.5	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
24.1,3-Dichlorobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
25.1,4-Dichlorobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
26. Dichlorodifluoromethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
27.1,1-Dichloroethane	4.4	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
28.1,2-Dichloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
29.1,1-Dichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI

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Order: 95575 58 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107S-031920

Ground Water

Chain of Custody:

184260

Client Project Name:

1-10860

Sample No:

Sample Matrix:

Collect Date:

03/19/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Collect Time: 16:15

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 95575-010E **Matrix: Ground Water**

Method: EPA 5030C/EPA 8260D Description: MW-107S-031920

Metrica. Li A 30300/Li A 0200D		Description: MW-1070-001920								
						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lni
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J۱
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J١
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
35. Ethylbenzene	1.1		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J۱
36. Ethylene Dibromide	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
37.2-Hexanone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
38. Isopropylbenzene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
39.4-Methyl-2-pentanone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
40. Methylene Chloride	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
41.2-Methylnaphthalene	12		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
42.MTBE	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
43. Naphthalene	140		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
44. n-Propylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
45. Styrene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
46.1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
47.1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
48. Tetrachloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
49. Toluene	3.4		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
50.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
52.1,1,2-Trichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
53. Trichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
55.1,2,3-Trichloropropane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
56.1,2,3-Trimethylbenzene	4.9		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
57.1,2,4-Trimethylbenzene	4.2		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
58.1,3,5-Trimethylbenzene	1.6		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
59. Vinyl Chloride	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
60.m&p-Xylene	3.3		μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
61.o-Xylene	3.1		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
62. Xylenes	6.4		μg/L	3.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J



Order: 95575 Page: 59 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-107S-031920

Ground Water

Chain of Custody:

184260

Client Project Name: 1-10860

60

Collect Date:
Collect Time:

03/19/20

16:15

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample No:

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 95575-010 Matrix: Ground Water Method: EPA 3510C/EPA 8270E Description: MW-107S-031920

Method: EPA 3510C/EPA 8270E				Des	cription:	MW-107S-031920				
						Prepara	tion	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	5.6		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
2. Acenaphthylene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
3. Aniline	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
4. Anthracene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
‡ 5. Azobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
8. Benzo(b)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
10. Benzo(k)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
15.4-Bromophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
18.Carbazole	5.1		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
21.2-Chlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
22.4-Chlorophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
23. Chrysene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
25. Dibenzofuran	U	L+	μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
27. Diethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
28.2,4-Dimethylphenol	140		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
29. Dimethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
30.2,4-Dinitrophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
31.2,4-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
32.2,6-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
33. Fluoranthene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
34. Fluorene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
35. Hexachlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF

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Order: 95575 Page: 60 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-107S-031920

Ground Water

Chain of Custody:

184260

16:15

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

03/19/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	95575-010	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-107S-031920				
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
40. Isophorone	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
41.2-Methyl-4,6-dinitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
42.2-Methylnaphthalene	8.9		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
43.2-Methylphenol	7.2		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
‡ 44.3&4-Methylphenol	83		μg/L	10	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
45. Naphthalene	110		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
46.2-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ'
47.3-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
48.4-Nitroaniline	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
49. Nitrobenzene	U		μg/L	3.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
50.2-Nitrophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
51.4-Nitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
54. N-Nitrosodiphenylamine	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
57. Pentachlorophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
58. Phenanthrene	2.5	L+	μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
59. Phenol	37		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
60. Pyrene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
61. Pyridine	U	L-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
63.2,4,5-Trichlorophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJ
pH, Electrometric				Aliq	uot ID:	95575-010A	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-107S-031920				
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

1.pH

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

12.1 H

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

NA

NA

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

03/24/20 15:49 WD20C24C AMW

-1.00



‡ 1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 95575 Laboratory Sample Number: 95575-010

Order: 95575 Page: 61 of 98 Date: 04/07/20

WU20D03A RKB

Applied Science & Technology, Sample Description: MW-107S-031920 Chain of Custody: 184260 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 03/19/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 16:15 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-010A Matrix: Ground Water Method: EPA 9056A Description: MW-107S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20C25C WC20C25A CMB 1. Chloride 28000 μg/L 10000 1.0 03/25/20 03/25/20 Residue, Filterable (TDS) Aliquot ID: 95575-010A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-107S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Date P. Batch A. Date A. Batch Dilution 1. Total Dissolved Solids WH20C25A VO 840000 50000 WH20C25A 03/26/20 μg/L 1.3 03/25/20 95575-010B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-107S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

20

2.0

04/03/20

PW20D03A

04/03/20

11000

μg/L



Order: 95575 Page: 62 of 98 Date: 04/07/20

184259 Client Identification: Applied Science & Technology, Sample Description: MW-106-031920 Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:20 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-011C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-106-031920 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 0.16 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-011D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-106-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C26A CJA 1. Arsenic μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 2. Barium 200 100 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 3. Chromium 19 μg/L 10 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 4. Copper 12 4.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 5.Lead 4.3 3.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 6. Manganese U 10 T420D07A JLH 50 03/26/20 PT20C26A 04/07/20 μg/L 7. Nickel U μg/L 20 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 10 Vanadium U LLV-4 0 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L Mercury by CVAAS, Total 95575-011D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-106-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/27/20 PM20C27A 03/27/20 M720C27A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-011 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-106-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK П 3. Aroclor-1232 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 6. Aroclor-1254 U 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/27/20 PS20C27A 03/27/20 SF20C27A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311

Cadillac, MI 49601

8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

F: (231) 775-8584

T: (231) 775-8368



Order: 95575 Page: Date:

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Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-106-031920

Ground Water

Chain of Custody:

184259

1-10860 Client Project Name:

Sample No:

Collect Date:

03/19/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Collect Time:

14:20

Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-011 **Matrix: Ground Water**

Method: EPA 3510C/EPA 8082A Description: MW-106-031920

					Prepa	ration	А	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/27/20	PS20C27A	03/27/20	SF20C27A RDK
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	03/27/20	PS20C27A	03/27/20	SF20C27A RDK

Volatile Organic Compounds (VOCs) by GC/MS 95575-011E **Matrix: Ground Water** Aliquot ID:

Method: EPA 5030C/EPA 8260D Description: MW-106-031920

						Prepa		А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Acetone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
3. Benzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
4. Bromobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
5. Bromochloromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
6. Bromodichloromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
7. Bromoform	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
8. Bromomethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
9.2-Butanone	U		μg/L	25	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
10.n-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
11. sec-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
12. tert-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
13. Carbon Disulfide	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
15. Chlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
16. Chloroethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
17. Chloroform	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
18. Chloromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
19.2-Chlorotoluene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
21. Dibromochloromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
22. Dibromomethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 64 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-106-031920

Chain of Custody:

184259

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date:

03/19/20

Client Project No:

Ground Water Collect Time:

14:20

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS		Ali	quot ID:	95575-011E	Matrix: G	Matrix: Ground Water			
Method: EPA 5030C/EPA 8260D			De	scription:	MW-106-031920				
					Prepa	ration	Ar	nalysis	
Parameter(s)	Result	Q Unit	s Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
31.trans-1,2-Dichloroethene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
32.1,2-Dichloropropane	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
33. cis-1,3-Dichloropropene	U	μg/l	_ 0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
34. trans-1,3-Dichloropropene	U	μg/l	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
35. Ethylbenzene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
36. Ethylene Dibromide	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
37.2-Hexanone	U	μg/l	_ 50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
38. Isopropylbenzene	U	μg/l	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
39.4-Methyl-2-pentanone	U	μg/l	_ 50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
40. Methylene Chloride	U	μg/l	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 41.2-Methylnaphthalene	U	μg/l	_ 5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
42.MTBE	U	μg/l	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
43. Naphthalene	U	μg/l	_ 5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
44. n-Propylbenzene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
45. Styrene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
46.1,1,1,2-Tetrachloroethane	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
47.1,1,2,2-Tetrachloroethane	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
48. Tetrachloroethene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
49. Toluene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
50.1,2,4-Trichlorobenzene	U	μg/l	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
51.1,1,1-Trichloroethane	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 52.1,1,2-Trichloroethane	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
53. Trichloroethene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
54. Trichlorofluoromethane	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
55.1,2,3-Trichloropropane	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 56.1,2,3-Trimethylbenzene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
57.1,2,4-Trimethylbenzene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
58.1,3,5-Trimethylbenzene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
59. Vinyl Chloride	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
60.m&p-Xylene	U	μg/l	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
61.o-Xylene	U	μg/l	_ 1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 62. Xylenes	U	μg/l	_ 3.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF



Order: 95575 Page: 65 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-106-031920

Ground Water

Chain of Custody:

184259

14:20

Client Project Name: 1-10860

O Sample No:

Collect Date:
Collect Time:

03/19/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. P. Batch A. Date A. Batch Inst.	Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	95575-011	Matrix: G	Fround Water		
Parameter(s)	Method: EPA 3510C/EPA 8270E				Des	cription:	MW-106-031920				
1. Acenaphthene							Prepar	ation	Ar	nalysis	
2. Acenaphthylene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 3. Aniline U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 4. Anthracene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 5. Arobenzene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 6. Benzo(a)anthracene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 7. Benzo(a)pyrene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 8. Benzo(a)pyrene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 9. Benzo(a)pyrene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 10. Benzo(b)fluoranthene U L+ µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 11. Benzo(a)fluoranthene U L+ µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 11. Benzo(a)fluoranthene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 11. Benzo(A)fluoranthene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 12. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 13. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 14. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23. Chlorophenyl Phenylether U µg/L	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
3. Anilline U µg/L 4.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 4. Anthracene U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 5. Acobenzene U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 6. Benzo(a)anthracene U µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 7. Benzo(a)pyrene U µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 7. Benzo(a)pyrene U µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 9. Benzo(a)pyrene U µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 9. Benzo(a)pyrene U µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 9. Benzo(a)pyrene U µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 9. Benzo(a)pyrene U µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 11. Benzyl Acohol U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 12. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 12. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 14. Bis(2-chlyrex)pyrhatate U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 25. Chloroethophol U µg/L 5.0	1. Acenaphthene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
4. Anthracene U μg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJR20C24B GJR20C24B GJR20C24B GJR24C2 SN20C24B GJR20C24B GJR24C2 SN20C24A GJR24C2 SN20C24A GJR24C2 SN20C24B GJR2 7. Benzo(a)pyrene U μg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 8. Benzo(h)fluoranthene U L μg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 9. Benzo(h)fluoranthene U L μg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 11. Benzyl Alcohol U μg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 12. Bis(2-chloroethox)/mether U μg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 14. Bis(2-enhiorethy)/enheri U μg/L 5.0 1.0	2. Acenaphthylene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
## 5. Azobenzene	3. Aniline	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
6. Benzo(a)anthracene U µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 7. Benzo(a)pyrene U µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 8. Benzo(b)fluoranthene U L+ µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 9. Benzo(b)fluoranthene U L+ µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 10. Benzo(b)fluoranthene U L+ µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 10. Benzo(b)fluoranthene U L+ µg/L 1.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 11. Benzo(b)fluoranthene U U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 11. Benzo(b)fluoranthene U U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 13. Bis(2-chloroethox)methane U U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 13. Bis(2-chloroethox)methane U U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 14. Bis(2-chloroethy)lether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 14. Bis(2-chloroethy)lether U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 15.4-Bromophenyl Phenylether U L+ µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 16. Butyl Benzyl Phthalate U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 18. Carbozo-shrephylethenol U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 18. Carbozo-shrephylethenol U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 20.2-Chloronaphthalene U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 21.2-Chlorophenyl Phenylether U L+ µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 22.2-Chlorophenyl Phenylether U L+ µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 22.2-Chlorophenyl Phenylether U L+ µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 23. Chlorophenyl Phenylether U L+ µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 23. Chlorophenol U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 23. Chlorophenol U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 23. Chlorophenol U µg/L 5.0 1.0 0324/20 PS20C24A 0324/20 SN20C24B GJP 23. Chloritorphenol U µg/L 5.0 1.0 0324/20 PS20C24A	4. Anthracene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
7. Benzo(a)pyrene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 8. Benzo(ph)porylene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 9. Benzo(ph)perylene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 10. Benzo(ph)perylene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 11. Benzyl Alcohol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 12. Bis(2-chroethoxyl)methane U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 14. Bis(2-ethylhexyl)phthalate U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15Bromophenyl Phenylether U L+ µg/L 5.0 1.0 03/2	‡ 5. Azobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
8. Benzo(b)fluoranthene U L+ µg/L 1.0 1.0 0.3/24/20 PS20C24A 0.3/24/20 SN20C24B GJP 9. Benzo(k)fluoranthene U L+ µg/L 1.0 1.0 0.3/24/20 PS20C24A 0.3/24/20 SN20C24B GJP 11. Benzy Alcohol U µg/L 5.0 1.0 0.3/24/20 PS20C24A 0.3/24/20 SN20C24B GJP 12. Bis(2-chloroethoxy)methane U µg/L 5.0 1.0 0.3/24/20 PS20C24A 0.3/24/20 SN20C24B GJP 13. Bis(2-chloroethoxy)hether U µg/L 5.0 1.0 0.3/24/20 PS20C24A 0.3/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U L+ µg/L 5.0 1.0 0.3/24/20 PS20C24A 0.3/24/20 SN20C24B GJP 16. Bulyl Benzyl Phihalate U µg/L 5.0 1.0 0.3/24/20 PS20C24A 0.3/24/20 SN20C24B GJP 16. Bulyl Benzyl Phihalate U µg/L 5.0 1.0 0.3/24/20 PS20C24A	6. Benzo(a)anthracene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
9. Benzo(ghi)perylene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 10. Benzo(k)(llucranthene U Lµg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 11. Benzyl Alcohol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 12. Bis(2-chloroethy)gether U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 14. Bis(2-ethylnexyl)phthalate U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 16. Butyl Benzyl Phthalate U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 17. Di-rbutyl Phthalate U µg/L 5.0 1.0 03/24/2	7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
10. Benzo(k)fluoranthene	8. Benzo(b)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
11. Benzyl Alcohol	9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
12. Bis(2-chloroethoxy)methane	10. Benzo(k)fluoranthene	U	L+	μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
13. Bis(2-chloroethyl)ether U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 21. 2-Chlorophenyl Phenylether U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23. Chrysene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 24-Dichlorophenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 24-Dichlorophenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 24-Dimethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30. 24-Dimitrofoluene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 24-Dimitrofoluene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobotuaciene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/2	11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 15. 4-Bromophenyl Phenylether U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 18. Carbazole U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 20. 2-Chloronaphthalene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 21. 2-Chlorophenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 22. 4-Chlorophenyl Phenylether U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23. Chrysene U μg/L 3. Chrysene U μg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U L+ μg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30. 2,4-Dimitroplenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dimitroplenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
15.4-Bromophenyl Phenylether	13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
16. Butyl Bnzyl Phthalate U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 18. Carbazole U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 20. 2-Chloronaphthalene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 21. 2-Chlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 22. 4-Chlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23. Chrysene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U µg/L 25. Dibenzofuran U L+ µg/L 26. 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethylphenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30. 2,4-Dimitrophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dimitrophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dimitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dimitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobutadiene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B	14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
17. Di-n-butyl Phthalate U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP ‡ 18. Carbazole U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 20. 2-Chloropaphthalene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 21. 2-Chlorophenyl Phenylether U L μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23. Chrysene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U L + μg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthala	15.4-Bromophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
‡ 18.Carbazole U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 19.4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 20.2-Chloroaphthalene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 21.2-Chlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 22.4-Chlorophenol U Ly Ly 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23. Chrysene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U L+ µg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol	16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
19.4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 20.2-Chloronaphthalene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 21.2-Chlorophenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 22.4-Chlorophenyl Phenylether U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23. Chrysene U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzofuran U L+ μg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 <t< td=""><td>17. Di-n-butyl Phthalate</td><td>U</td><td></td><td>μg/L</td><td>5.0</td><td>1.0</td><td>03/24/20</td><td>PS20C24A</td><td>03/24/20</td><td>SN20C24B</td><td>GJP</td></t<>	17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
20.2-Chloronaphthalene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 21.2-Chlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 22.4-Chlorophenyl Phenylether U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23. Chrysene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U L+ µg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30. 2,4-Dinitrophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dinitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dinitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32. 2,6-Dinitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobenzene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	‡ 18. Carbazole	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
21.2-Chlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 22.4-Chlorophenyl Phenylether U Ly Ly 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23. Chrysene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U Ly Ly 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN2	19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
22.4-Chlorophenyl Phenylether U L+ µg/L 3.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 23. Chrysene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U L+ µg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethylphenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30. 2,4-Dinitrophenol U µg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dinitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32. 2,6-Dinitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	20.2-Chloronaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
23. Chrysene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U L+ µg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30. 2,4-Dinitrophenol U µg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dinitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32. 2,6-Dinitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobenzene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene	21.2-Chlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
24. Dibenzo(a,h)anthracene U μg/L 2.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 25. Dibenzofuran U L+ μg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethyl phenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32. 2,6-Dinitrotoluene U μg/L 5.0	22.4-Chlorophenyl Phenylether	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
25. Dibenzofuran U L+ µg/L 4.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethylphenol U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30. 2,4-Dinitrophenol U µg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dinitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32. 2,6-Dinitrotoluene U L+ µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U µg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	23. Chrysene	U		μg/L	1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
26. 2,4-Dichlorophenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 27. Diethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30. 2,4-Dinitrophenol U μg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32. 2,6-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
27. Diethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 28. 2,4-Dimethylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29. Dimethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30. 2,4-Dinitrophenol U L+ μg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32. 2,6-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U μg/L 5.0 </td <td>25. Dibenzofuran</td> <td>U</td> <td>L+</td> <td>μg/L</td> <td>4.0</td> <td>1.0</td> <td>03/24/20</td> <td>PS20C24A</td> <td>03/24/20</td> <td>SN20C24B</td> <td>GJP</td>	25. Dibenzofuran	U	L+	μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
28.2,4-Dimethylphenol U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 29.Dimethyl Phthalate U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 30.2,4-Dinitrophenol U μg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31.2,4-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32.2,6-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33.Fluoranthene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34.Fluorene U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35.Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36.Hexachlorobutadiene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
29. Dimethyl Phthalate U L+ μg/L 30. 2,4-Dinitrophenol U μg/L 30. 2,4-Dinitrotoluene U L+ μg/L 30. 2,6-Dinitrotoluene U L+ μg/L 30. 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31. 2,4-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32. 2,6-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	27. Diethyl Phthalate	U	L+		5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
30.2,4-Dinitrophenol U μg/L 20 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 31.2,4-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32.2,6-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
31.2,4-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 32.2,6-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	29. Dimethyl Phthalate	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
32.2,6-Dinitrotoluene U L+ μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 33. Fluoranthene U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	30.2,4-Dinitrophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
33. Fluoranthene U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	31.2,4-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
33. Fluoranthene U μg/L 1.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 34. Fluorene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	32.2,6-Dinitrotoluene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	33. Fluoranthene	U			1.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
35. Hexachlorobenzene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	34. Fluorene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
	35. Hexachlorobenzene	U			5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
37. Hexachlorocyclopentadiene U V- μg/L 5.0 1.0 03/24/20 PS20C24A 03/24/20 SN20C24B GJP	36. Hexachlorobutadiene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP
, , , , , , , , , , , , , , , , , , , ,	37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJP



Order: 95575 Page: 66 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-106-031920

Chain of Custody:

184259

Client Project Name: 1-

1-10860

Sample No:

Sample Matrix:

Collect Date:

03/19/20

Client Project No:

·

Ground Water Collect Time:

14:20

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	95575-011 MW-106-031920	Matrix:	Ground Water		
					op	Prepar	ation	Δr	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	lnit.
38. Hexachloroethane	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
40. Isophorone	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
41.2-Methyl-4,6-dinitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
43.2-Methylphenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
45. Naphthalene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
46.2-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
47.3-Nitroaniline	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
48.4-Nitroaniline	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
49. Nitrobenzene	U		μg/L	3.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
50.2-Nitrophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
51.4-Nitrophenol	U	L+	μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
54. N-Nitrosodiphenylamine	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
57. Pentachlorophenol	U		μg/L	20	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
58. Phenanthrene	U	L+	μg/L	2.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
59. Phenol	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
60. Pyrene	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
61. Pyridine	U	L-	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
63.2,4,5-Trichlorophenol	U	L+	μg/L	5.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	03/24/20	PS20C24A	03/24/20	SN20C24B	GJF
pH, Electrometric				Aliq	uot ID:	95575-011A	Matrix:	Ground Water		
Method: EPA 9040C				Des	cription:	MW-106-031920				
						Prepar	ation	Ar	alysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	lnit.
1. pH	12.4	Н	pH Units	-1.00	1.0	NA	NA	03/24/20 15:51	WD20C24C	AMV

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 Page: 67 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: MW-106-031920 Chain of Custody: 184259 Client Identification: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:20 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-011A Matrix: Ground Water Method: EPA 9056A Description: MW-106-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20C25C WC20C25A CMB 1. Chloride 38000 μg/L 10000 1.0 03/25/20 03/25/20 Residue, Filterable (TDS) Aliquot ID: 95575-011A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-106-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 03/25/20 WH20C25A VO 1300000 50000 WH20C25A 03/26/20 μg/L 1.3 95575-011B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-106-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N WU20D03A RKB 990 μg/L 10 1.0 04/03/20 PW20D03A 04/03/20



Order: 95575 Page: 68 of 98 Date: 04/07/20

184259 Client Identification: Applied Science & Technology, Sample Description: MW-105-031820 Chain of Custody: Inc. - Brighton 1-10860 03/18/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:10 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-012C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-105-031820 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 0.32 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-012D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-105-031820 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 7.3 T420C26A CJA 1. Arsenic μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 2. Barium U 100 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 3. Chromium U μg/L 10 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 4. Copper U 4.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L U 5.Lead 3.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 6. Manganese U 10 T420D07A JLH 50 03/26/20 PT20C26A 04/07/20 μg/L U 7. Nickel μg/L 20 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 10 Vanadium U LLV-4 0 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L Mercury by CVAAS, Total 95575-012D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-105-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/27/20 PM20C27A 03/27/20 M720C27A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-012 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-105-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK П 3. Aroclor-1232 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 6. Aroclor-1254 U 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311

T: (231) 775-8368

F: (231) 775-8584

Cadillac, MI 49601

8660 S. Mackinaw Trail



Order: Page: Date:

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Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-105-031820

Ground Water

Chain of Custody:

03/18/20 Collect Date:

1-10860 Client Project Name:

Sample No:

Collect Time:

15:10

184259

Client Project No: Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) 95575-012 **Matrix: Ground Water** Aliquot ID:

Sample Matrix:

Method: EPA 3510C/EPA 8082A Description: MW-105-031820

					Prepa	ration	Analysis		
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.	
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/26/20	PS20C26A	03/26/20	SF20C26A RDK	
‡ 9. Aroclor-1268	U	ua/L	0.20	1.0	03/26/20	PS20C26A	03/26/20	SF20C26A RDK	

Volatile Organic Compounds (VOCs) by GC/MS 95575-012E **Matrix: Ground Water** Aliquot ID:

Method: EPA 5030C/EPA 8260D Description: MW-105-031820

						Prepa			nalysis	
Parameter(s)	Result	Q I	Jnits	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acetone	U		µg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
2. Acrylonitrile	U		µg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
3. Benzene	1.1		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
4. Bromobenzene	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
5. Bromochloromethane	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
6. Bromodichloromethane	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
7. Bromoform	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
8. Bromomethane	U		µg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
9.2-Butanone	U		µg/L	25	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
10. n-Butylbenzene	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
11. sec-Butylbenzene	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
12. tert-Butylbenzene	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
13. Carbon Disulfide	U		µg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
15. Chlorobenzene	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
16. Chloroethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
17. Chloroform	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
18. Chloromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
19.2-Chlorotoluene	U		µg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
21. Dibromochloromethane	U		µg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
22. Dibromomethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
23.1,2-Dichlorobenzene	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
24.1,3-Dichlorobenzene	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
25.1,4-Dichlorobenzene	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
27.1,1-Dichloroethane	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JN
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J۱
29.1,1-Dichloroethene	U		µg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 Page: 70 of 98 Date: 04/07/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-105-031820

Chain of Custody:

184259

1-10860 Client Project Name:

Sample No:

Collect Date:

03/18/20

1-10860 Client Project No:

Ground Water Collect Time:

15:10

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	GC/MS		•	uot ID:	95575-012E MW-105-031820		round Water		
					Prepa		Δ	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
31.trans-1,2-Dichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
32.1,2-Dichloropropane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
33. cis-1,3-Dichloropropene	U	μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
34. trans-1,3-Dichloropropene	U	μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
35. Ethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
36. Ethylene Dibromide	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
37.2-Hexanone	U	μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
38. Isopropylbenzene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
39.4-Methyl-2-pentanone	U	μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
40. Methylene Chloride	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 41.2-Methylnaphthalene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
42.MTBE	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
43. Naphthalene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
44. n-Propylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
45. Styrene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
46.1,1,1,2-Tetrachloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
47.1,1,2,2-Tetrachloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
48. Tetrachloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
49. Toluene	4.7	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
50.1,2,4-Trichlorobenzene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
51.1,1,1-Trichloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
52.1,1,2-Trichloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
53. Trichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
54. Trichlorofluoromethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
55.1,2,3-Trichloropropane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
56.1,2,3-Trimethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
57.1,2,4-Trimethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
58.1,3,5-Trimethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
59. Vinyl Chloride	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
60.m&p-Xylene	U	μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
61.o-Xylene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 62. Xylenes	U	μg/L	3.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF



Order: 95575 Page: 71 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-105-031820

Chain of Custody:

184259

Client Project Name: 1-10860

Sample No:

Collect Date:

03/18/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable : Parameter not included in NELAC Scope of Analysis.

Ground Water

Collect Time: 15:10

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 95575-012 Matrix: Ground Water

Sample Matrix:

Method: EPA 3510C/EPA 8270E Description: MW-105-031820 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 1. Acenaphthene U G+ μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 2. Acenaphthylene U G+ ua/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 3. Aniline U 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP μg/L G+ PS20C25E 03/25/20 4 Anthracene U 5.0 1.0 03/25/20 SN20C25A GJP μg/L U G+ 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 5. Azobenzene μg/L U 6. Benzo(a)anthracene G+ μg/L 10 1.0 03/25/20 PS20C25F 03/25/20 SN20C25A GJP 7. Benzo(a)pyrene U G+ μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 03/25/20 PS20C25F 03/25/20 SN20C25A GJP 8. Benzo(b)fluoranthene U G+ μg/L 10 1.0 9. Benzo(ghi)perylene U L+ 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP ua/L U 10. Benzo(k)fluoranthene G+ μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 11. Benzyl Alcohol U G+ µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 12. Bis(2-chloroethoxy)methane U G+ μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP U G+ PS20C25E 03/25/20 SN20C25A GJP 13. Bis(2-chloroethyl)ether ua/L 10 1.0 03/25/20 14. Bis(2-ethylhexyl)phthalate U G+ μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP U 15.4-Bromophenyl Phenylether G+ 5.0 1.0 PS20C25E 03/25/20 SN20C25A GJP μg/L 03/25/20 16. Butyl Benzyl Phthalate U G+ 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP μg/L U 17. Di-n-butyl Phthalate G+ 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP μg/L U G+ 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 18. Carbazole μg/L 5.0 19.4-Chloro-3-methylphenol U G+ 5.0 1.0 PS20C25E 03/25/20 SN20C25A GJP μg/L 03/25/20 20.2-Chloronaphthalene U G+ μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP U G+ 5.0 1.0 PS20C25E 03/25/20 21.2-Chlorophenol µg/L 03/25/20 SN20C25A GJP 22.4-Chlorophenyl Phenylether U G+ μq/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 23. Chrysene U G+ μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 24. Dibenzo(a,h)anthracene U G+ 2.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP ua/L 25. Dibenzofuran U G+ 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP μg/L U G+ 1.0 PS20C25E 03/25/20 SN20C25A GJP 26.2.4-Dichlorophenol 5.0 03/25/20 μg/L 27. Diethyl Phthalate U G+ μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 21 G+ 5.0 1.0 PS20C25E 03/25/20 28.2,4-Dimethylphenol μg/L 03/25/20 SN20C25A GJP U 5.0 PS20C25E 29. Dimethyl Phthalate G+ μg/L 1.0 03/25/20 03/25/20 SN20C25A GJP U G+ 20 1.0 PS20C25E 03/25/20 SN20C25A GJP 30.2.4-Dinitrophenol μg/L 03/25/20 31.2,4-Dinitrotoluene U G+ 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP µg/L 32.2.6-Dinitrotoluene U G+ μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP 33. Fluoranthene Ū G+ 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP µg/L 34. Fluorene U G+ μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP U G+ 5.0 1.0 PS20C25E 03/25/20 SN20C25A GJP 35. Hexachlorobenzene μg/L 03/25/20 36. Hexachlorobutadiene U G+ μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJP U V-PS20C25E 03/25/20 SN20C25A GJP 37. Hexachlorocyclopentadiene µg/L 5.0 1.0 03/25/20

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Order: 95575 Page: 72 of 98 Date: 04/07/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-105-031820 Chain of Custody:

184259

Client Project Name:

1-10860

Sample No:

Collect Date:

03/18/20

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time:

15:10

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

95575-012 **Matrix: Ground Water** Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: Method: EPA 3510C/EPA 8270E Description: MW-105-031820

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lni
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
40. Isophorone	U	L+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G٠
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJ
42.2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
43.2-Methylphenol	6.3	G+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
44.3&4-Methylphenol	30	G+	μg/L	10	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
45. Naphthalene	U	G+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
46.2-Nitroaniline	U	G+	μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
47.3-Nitroaniline	U	G+	μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
48.4-Nitroaniline	U	G+	μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
50.2-Nitrophenol	U	G+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
51.4-Nitrophenol	U	G+	μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
52. N-Nitrosodimethylamine 53. N-Nitrosodi-n-propylamine	U	G+ G+	μg/L μg/L	5.0 5.0	1.0 1.0	03/25/20 03/25/20	PS20C25E PS20C25E	03/25/20 03/25/20	SN20C25A SN20C25A	
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
56.2,2'-Oxybis(1-chloropropane)	U	G+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
57. Pentachlorophenol	U	V-	μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
58. Phenanthrene	U	G+	μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
59. Phenol	36	*	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
60. Pyrene	U	G+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
61. Pyridine	U	L-	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
62.1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
63.2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
64.2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
H, Electrometric				Aliq	uot ID:	95575-012A	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-105-031820				

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 11.9 Н NA 03/24/20 15:54 WD20C24C AMW 1.pH pH Units -1.00 1.0 NA



Order: 95575 Page: 73 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: MW-105-031820 Chain of Custody: 184259 Client Identification: Inc. - Brighton 1-10860 03/18/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:10 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-012A Matrix: Ground Water Method: EPA 9056A Description: MW-105-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20C25C WC20C25A CMB 1. Chloride 24000 μg/L 10000 1.0 03/25/20 03/25/20 Residue, Filterable (TDS) Aliquot ID: 95575-012A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-105-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 03/25/20 WH20C25A VO 620000 50000 WH20C25A 03/26/20 μg/L 1.3 95575-012B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-105-031820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N WU20D03A RKB 3900 μg/L 10 1.0 04/03/20 PW20D03A 04/03/20



11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 95575 Laboratory Sample Number: 95575-013

Order: 95575 Page: 74 of 98 Date: 04/07/20

184259 Client Identification: Applied Science & Technology, Sample Description: MW-110D-031920 Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 12:10 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-013C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-110D-031920 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 0.062 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-013D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-110D-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C26A CJA 1. Arsenic µg/L 5.0 10 03/26/20 PT20C26A 03/26/20 2. Barium 510 100 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 3. Chromium 17 μg/L 10 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 4. Copper 4.5 4.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA µg/L 5.Lead 7.2 3.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 6. Manganese U 10 T420D07A JLH 50 03/26/20 PT20C26A 04/07/20 μg/L 7. Nickel U μg/L 20 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 10 Vanadium U LLV-4 0 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L Mercury by CVAAS, Total 95575-013D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-110D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/27/20 PM20C27A 03/27/20 M720C27A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-013 Matrix: Ground Water Description: MW-110D-031920 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK П 3. Aroclor-1232 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 6. Aroclor-1254 U 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

T: (810) 220-3300

T: (231) 775-8368



Order: 95575 75 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-110D-031920

Chain of Custody:

184259

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date:

03/19/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Collect Time:

12:10

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Aliquot ID: Description: MW-110D-031920

Ground Water

95575-013

Matrix: Ground Water

					Prepa	ration	A	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/26/20	PS20C26A	03/26/20	SF20C26A RDK
‡ 9. Aroclor-1268	U	ua/L	0.20	1.0	03/26/20	PS20C26A	03/26/20	SF20C26A RDK

Volatile Organic Compounds (VOCs) by GC/MS 95575-013E **Matrix: Ground Water** Aliquot ID:

Method: EPA 5030C/EPA 8260D Description: MW-110D-031920

						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Acetone	U	Y1	μg/L	50	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
‡ 2. Acrylonitrile	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
3. Benzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
4. Bromobenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
5. Bromochloromethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
6. Bromodichloromethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
7. Bromoform	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
8. Bromomethane	U	Y1	μg/L	10	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
9.2-Butanone	U	Y1	μg/L	25	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
10. n-Butylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JM
11.sec-Butylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
12.tert-Butylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JM
13. Carbon Disulfide	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JM
14. Carbon Tetrachloride	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
15. Chlorobenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JM
16. Chloroethane	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JM
17. Chloroform	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JM
18. Chloromethane	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JM
19.2-Chlorotoluene	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
20.1,2-Dibromo-3-chloropropane (SIM)	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
21. Dibromochloromethane	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
22. Dibromomethane	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
23.1,2-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
24.1,3-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
25.1,4-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
26. Dichlorodifluoromethane	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
27.1,1-Dichloroethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
28.1,2-Dichloroethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMI
29.1,1-Dichloroethene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF

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Order: 95575 Page: 76 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-110D-031920

Chain of Custody:

184259

Client Project Name: 1-10860

Sample No:

Collect Date:

03/19/20

Client Project No: 1-10860

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Ground Water Collect Time:

ollect Time: 12:10

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	GC/MS			•	uot ID: cription:	95575-013E MW-110D-031920		Fround Water		
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
31.trans-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
32.1,2-Dichloropropane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
33. cis-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
34. trans-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
35. Ethylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
36. Ethylene Dibromide	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
37.2-Hexanone	U	Y1	μg/L	50	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
38. Isopropylbenzene	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
39.4-Methyl-2-pentanone	U	Y1	μg/L	50	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
40. Methylene Chloride	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
‡ 41.2-Methylnaphthalene	U	Y1	μg/L	15	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
42.MTBE	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
43. Naphthalene	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
44. n-Propylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
45. Styrene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
46.1,1,1,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
47.1,1,2,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
48. Tetrachloroethene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
49. Toluene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
50.1,2,4-Trichlorobenzene	U	Y1	μg/L	10	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
51.1,1,1-Trichloroethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
‡ 52.1,1,2-Trichloroethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
53. Trichloroethene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
54. Trichlorofluoromethane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
55.1,2,3-Trichloropropane	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
‡ 56.1,2,3-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
57.1,2,4-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
58.1,3,5-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
59. Vinyl Chloride	U	Y1	μg/L	2.5	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF
60. m&p-Xylene	U	Y1	μg/L	5.0	5.0	03/26/20	VM20C26A	03/26/20	VM20C26A	JMF

μg/L

μg/L

U Y1

U Y1

5.0

5.0

03/26/20

03/26/20

VM20C26A

VM20C26A

03/26/20

03/26/20

2.5

7.5

61.o-Xylene

‡ 62. Xylenes

VM20C26A JMF

VM20C26A JMF



Order: 95575 Page: 77 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-110D-031920

Ground Water

Chain of Custody:

184259

Client Project Name: 1-10860

O Sample No:

Collect Date:
Collect Time:

03/19/20

12:10

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS		95575-013	Matrix: Ground Water
Method: EPA 3510C/EPA 8270E	Description:	MW-110D-031920	

						VIVV-110D-03132				
						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	I
1. Acenaphthene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	C
2. Acenaphthylene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	. (
3. Aniline	U	*	μg/L	4.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	. (
4. Anthracene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	. (
5. Azobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	(
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	. (
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	. (
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	. (
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
18. Carbazole	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
21.2-Chlorophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
23. Chrysene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
25. Dibenzofuran	U		μg/L	4.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
27. Diethyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
30.2,4-Dinitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
33. Fluoranthene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
34. Fluorene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
35. Hexachlorobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	ı
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	

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Order: 95575 78 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-110D-031920

Chain of Custody:

184259

Client Project Name: 1-10860

Sample No:

Collect Date:

03/19/20

Client Project No: Sample Comments:

Sample Matrix: **Ground Water** Collect Time:

12:10

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	95575-013	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-110D-031920				
						Prepara	ntion	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
38. Hexachloroethane	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJF
40. Isophorone	U	L+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJF
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJF
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJF
43.2-Methylphenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
45. Naphthalene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
46.2-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
47.3-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
48.4-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
49. Nitrobenzene	U		μg/L	3.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
50.2-Nitrophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
51.4-Nitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
57. Pentachlorophenol	U	V-	μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
58. Phenanthrene	U		μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
59. Phenol	U	*	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
60. Pyrene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
61. Pyridine	U	L-	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
pH, Electrometric				Aliq	uot ID:	95575-013A	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-110D-031920				
December(s)	D- "	_	11.2	Denort II !	Dil e	Prepara			nalysis	1. 19
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

1.pH

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

12.5 H

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

NA

NA

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

03/24/20 16:01 WD20C24C AMW

-1.00



‡ 1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 95575 Laboratory Sample Number: 95575-013

Order: 95575 Page: 79 of 98 Date: 04/07/20

WU20D03A RKB

Applied Science & Technology, Sample Description: MW-110D-031920 Chain of Custody: 184259 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 03/19/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 12:10 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-013A Matrix: Ground Water Method: EPA 9056A Description: MW-110D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20C25C WC20C25A CMB 1. Chloride 39000 μg/L 10000 1.0 03/25/20 03/25/20 Residue, Filterable (TDS) Aliquot ID: 95575-013A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-110D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Date P. Batch A. Date A. Batch Dilution 1. Total Dissolved Solids 1800000 50000 WH20C25A 03/26/20 WH20C25A VO μg/L 1.3 03/25/20 95575-013B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-110D-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

10

1.0

04/03/20

PW20D03A

04/03/20

3100

μg/L



95575 Order: Page: 80 of 98 Date: 04/07/20

184259 Client Identification: Applied Science & Technology, Sample Description: MW-110S-031920 Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 12:50 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-014C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-110S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free U mg/L 0.0050 1.0 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-014D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-110S-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C26A CJA 1. Arsenic μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 2. Barium 310 100 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 3. Chromium 48 μg/L 10 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 4. Copper 5.6 4.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 5.Lead U 3.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 6. Manganese U 10 T420D07A JLH 50 03/26/20 PT20C26A 04/07/20 μg/L 7. Nickel U μg/L 20 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 10 Vanadium U LLV-4 0 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L Mercury by CVAAS, Total 95575-014D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-110S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/27/20 PM20C27A 03/27/20 M720C27A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-014 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-110S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK П 0.20 3. Aroclor-1232 μg/L 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 6. Aroclor-1254 U 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584

8660 S. Mackinaw Trail



Order: 95575 81 of 98 Page: Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-110S-031920

Chain of Custody:

184259

Client Project Name:

1-10860

Sample No:

Collect Date:

03/19/20

Client Project No:

1-10860 Sample Matrix:

Ground Water Collect Time: 12:50

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

95575-014 Aliquot ID: Description: MW-110S-031920

					Prepa	ration	А	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/26/20	PS20C26A	03/26/20	SF20C26A RDK
‡ 9. Aroclor-1268	U	ua/L	0.20	1.0	03/26/20	PS20C26A	03/26/20	SF20C26A RDK

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

95575-014E

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D

Description: MW-110S-031920

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
3.Benzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
4. Bromobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
5. Bromochloromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
6. Bromodichloromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
7. Bromoform	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
8. Bromomethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
9.2-Butanone	U		μg/L	25	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
10.n-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
11. sec-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
12.tert-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
13. Carbon Disulfide	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
15. Chlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
16. Chloroethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
17. Chloroform	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
18. Chloromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
19.2-Chlorotoluene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
21. Dibromochloromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
22. Dibromomethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 Page: 82 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-110S-031920

Chain of Custody:

184259

Client Project Name:

1-10860

Sample No:

Collect Date:

03/19/20

Client Project No:

10000

Sample Matrix:

Ground Water Collect Time:

12:50

Sample Comments:

Definitions: Q:

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 95575-014E

Method: EPA 5030C/EPA 8260D

Description: MW-110S-031920

						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	. Ji
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JI
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	. J
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	J
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	. J
35. Ethylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
36. Ethylene Dibromide	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
37.2-Hexanone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
38. Isopropylbenzene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
39.4-Methyl-2-pentanone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
40. Methylene Chloride	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
41.2-Methylnaphthalene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
42.MTBE	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
43. Naphthalene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
44. n-Propylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
45. Styrene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
46.1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
47.1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
48. Tetrachloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
49. Toluene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
50.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
52.1,1,2-Trichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
53. Trichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
55.1,2,3-Trichloropropane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
56.1,2,3-Trimethylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
57.1,2,4-Trimethylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
58.1,3,5-Trimethylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
59. Vinyl Chloride	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	Ĺ
60.m&p-Xylene	U		μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
61.o-Xylene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
62. Xylenes	U		μg/L	3.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	



Order: 95575 Page: 83 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-110S-031920

Chain of Custody:

184259

Client Project Name: 1-1

1-10860

Sample No:

Sample Matrix:

Collect Date:

03/19/20 12:50

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 95575-014 Matrix: Ground Water

Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-110S-031920

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepa P. Date	ration P. Batch	A. Date	nalysis A. Batch	Init
1. Acenaphthene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJ
2. Acenaphthylene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJ
3. Aniline	U	*	μg/L	4.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJ
4. Anthracene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
5. Azobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
6.Benzo(a)anthracene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
18. Carbazole	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
21.2-Chlorophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
23. Chrysene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
25. Dibenzofuran	U		μg/L	4.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
27 Diethyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
30.2,4-Dinitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
33. Fluoranthene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
34. Fluorene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
35. Hexachlorobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 84 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Base/Neutral/Acid Semivolatiles by GC/MS

Inc. - Brighton

Sample Description: MW-110S-031920

Ground Water

Aliquot ID:

95575-014

Chain of Custody:

Matrix: Ground Water

184259

12:50

Client Project Name: 1-10860

Sample No:

Collect Date: Collect Time: 03/19/20

Client Project No: Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Marks at EDA 25400/EDA 20705				•		5557 5-0 14 BBN 4400 004000		Tourid Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-110S-031920				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepara P. Date	ation P. Batch	A. Date	nalysis A. Batch	Init
	U						PS20C25E	03/25/20	SN20C25A	
38. Hexachloroethane			μg/L	5.0	1.0	03/25/20				
39. Indeno(1,2,3-cd)pyrene	U	1.	μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
40. Isophorone	U	L+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
43.2-Methylphenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
44.3&4-Methylphenol	U		μg/L	10	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
45. Naphthalene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
46.2-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	
47.3-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
48.4-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
49. Nitrobenzene	U		μg/L	3.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
50.2-Nitrophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
51.4-Nitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
57. Pentachlorophenol	U	V-	μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
58. Phenanthrene	U		μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
59. Phenol	U	*	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
60. Pyrene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
61. Pyridine	U	L-	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	G.
oH, Electrometric				Alia	uot ID:	95575-014A	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-110S-031920				

						Prepar	ation	Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1.pH	12.4	Н	pH Units	-1.00	1.0	NA	NA	03/24/20 16:03	3 WD20C24C	CAMW	



Parameter(s)

‡ 1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 95575 Laboratory Sample Number: 95575-014

Order: 95575 Page: 85 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: MW-110S-031920 Chain of Custody: 184259 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 03/19/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 12:50 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-014A Matrix: Ground Water Method: EPA 9056A Description: MW-110S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20C25C WC20C25A CMB 1. Chloride 46000 μg/L 10000 1.0 03/25/20 03/25/20 Residue, Filterable (TDS) Aliquot ID: 95575-014A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-110S-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Date P. Batch A. Date A. Batch Dilution 1. Total Dissolved Solids 1300000 50000 WH20C26A WH20C26A VO μg/L 1.3 03/26/20 03/27/20 95575-014B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Method: SM 4500-NH3 G-2011 Description: MW-110S-031920 Preparation Analysis

Reporting Limit

10

Dilution

1.0

P. Date

04/03/20

P. Batch

PW20D03A

A. Date

04/03/20

A. Batch

WU20D03A RKB

Init.

Result

3700

Q

Units

μg/L



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 95575 Laboratory Sample Number: 95575-015

Order: 95575 Page: 86 of 98 Date: 04/07/20

184259 Client Identification: Applied Science & Technology, Sample Description: MW-108-031920 Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:30 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-015C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-108-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free U mg/L 0.0050 1.0 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-015D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-108-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C26A CJA 1. Arsenic μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 2. Barium 330 100 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 3. Chromium 26 μg/L 10 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 4. Copper 78 4.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 5.Lead 72 3.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 6. Manganese U 10 T420D07A JLH 50 03/26/20 PT20C26A 04/07/20 μg/L 7. Nickel U μg/L 20 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 10 Vanadium U LLV-4 0 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L Mercury by CVAAS, Total 95575-015D Matrix: Ground Water Aliquot ID: Method: EPA 7470A Description: MW-108-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/27/20 PM20C27A 03/27/20 M720C27A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-015 Matrix: Ground Water Description: MW-108-031920 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK П 0.20 3. Aroclor-1232 μg/L 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 6. Aroclor-1254 U 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584 8660 S. Mackinaw Trail



Order: 95575 Page: 87 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-108-031920

Chain of Custody:

184259

Client Project Name: 1-10860

Sample No:

Collect Date:

03/19/20

Client Project No:

1-10860 Sample Matrix:

Ground Water Collect Time:

13:30

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-015 Matrix: Ground Water

Method: EPA 3510C/EPA 8082A Description: MW-108-031920

					Prepa	ration	А	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/26/20	PS20C26A	03/26/20	SF20C26A RDK
‡ 9. Aroclor-1268	U	ua/L	0.20	1.0	03/26/20	PS20C26A	03/26/20	SF20C26A RDK

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 95575-015E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-108-031920

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
3.Benzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
4. Bromobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
5. Bromochloromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
6. Bromodichloromethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
7. Bromoform	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
8. Bromomethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
9.2-Butanone	U		μg/L	25	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
10.n-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
11. sec-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
12.tert-Butylbenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
13. Carbon Disulfide	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
15. Chlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
16. Chloroethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
17. Chloroform	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
18. Chloromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
19.2-Chlorotoluene	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
21. Dibromochloromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
22. Dibromomethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: 95575 88 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-108-031920

Chain of Custody:

184259

1-10860 Client Project Name:

Sample No:

Collect Date:

03/19/20

1-10860 Client Project No:

Sample Matrix:

Ground Water Collect Time:

13:30

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D			•	uot ID:	95575-015E MW-108-031920		round Water		
- Inclined: El /tesses/El /tesses				onp	Prepa		Δ	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
31.trans-1,2-Dichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
32.1,2-Dichloropropane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
33. cis-1,3-Dichloropropene	U	μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
34. trans-1,3-Dichloropropene	U	μg/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
35. Ethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
36. Ethylene Dibromide	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
37.2-Hexanone	U	μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
38. Isopropylbenzene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
39.4-Methyl-2-pentanone	U	μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
40. Methylene Chloride	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 41.2-Methylnaphthalene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
42.MTBE	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
43. Naphthalene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
44. n-Propylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
45. Styrene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
46.1,1,1,2-Tetrachloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
47.1,1,2,2-Tetrachloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
48. Tetrachloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
49. Toluene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
50.1,2,4-Trichlorobenzene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
51.1,1,1-Trichloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
52.1,1,2-Trichloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
53. Trichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
54. Trichlorofluoromethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
55.1,2,3-Trichloropropane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
56.1,2,3-Trimethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
57.1,2,4-Trimethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
58.1,3,5-Trimethylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
59. Vinyl Chloride	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
60.m&p-Xylene	U	μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
61.o-Xylene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 62. Xylenes	U	μg/L	3.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF



95575 Order: Page: 89 of 98 Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Base/Neutral/Acid Semivolatiles by GC/MS

12. Bis(2-chloroethoxy)methane

13. Bis(2-chloroethyl)ether

14. Bis(2-ethylhexyl)phthalate

15.4-Bromophenyl Phenylether

Inc. - Brighton

Sample Description: MW-108-031920

Ground Water

Aliquot ID:

95575-015

Chain of Custody:

Matrix: Ground Water

184259

1-10860 Client Project Name:

Sample No:

Collect Date: Collect Time: 03/19/20

13:30

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

μg/L

μg/L

μg/L

μg/L

U

U

U

U

U

U

U

U

U

U

U

U V-

Sample Matrix:

Method: EPA 3510C/EPA 8270E	Description: MW-108-031920											
						Prepa	ration	ation Analysis				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.		
1. Acenaphthene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	GJP		
2. Acenaphthylene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A (GJP		
3. Aniline	U	*	μg/L	4.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A (GJP		
4. Anthracene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A (GJP		
5. Azobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A (GJP		
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A (GJP		
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A (GJP		
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A (GJP		
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A (GJP		
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A (GJF		
11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A (GJF		

5.0

10

5.0

5.0

20

5.0

5.0

1.0

5.0

5.0

5.0

5.0

1.0

1.0

1.0

1.0

03/25/20

03/25/20

03/25/20

03/25/20

03/25/20

03/25/20

03/25/20

03/25/20

03/25/20

03/25/20

03/25/20

03/25/20

PS20C25E

PS20C25E

PS20C25E

PS20C25E

PS20C25E

PS20C25E

PS20C25E

PS20C25E

PS20C25E

PS20C25E

PS20C25E

PS20C25E

03/26/20

03/26/20

03/26/20

03/26/20

SN20C26A GJP

SN20C26A GJP

SN20C26A GJP

SN20C26A GJP

SN20C26A GJP

SN20C26A GJP

SN20C26A GJP

SN20C26A GJP

SN20C26A GJP

SN20C26A GJP

SN20C26A GJP

SN20C26A GJP

RSN: 95575-200407152242

16. Butyl Benzyl Phthalate U 5.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP μg/L U 17. Di-n-butyl Phthalate 5.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP μg/L ‡ 18. Carbazole U 5.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP μg/L 19.4-Chloro-3-methylphenol U 5.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP μg/L 20.2-Chloronaphthalene U PS20C25E μg/L 5.0 1.0 03/25/20 03/26/20 SN20C26A GJP U 21.2-Chlorophenol 5.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP μg/L μg/L 22.4-Chlorophenyl Phenylether U 5.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP U 23. Chrysene μg/L 1.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP 24. Dibenzo(a,h)anthracene U 2.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP μg/L 25. Dibenzofuran U μg/L 4.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP 26.2,4-Dichlorophenol U 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP μg/L 5.0 27. Diethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP 28.2,4-Dimethylphenol U 5.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP μg/L U 5.0 1.0 03/25/20 PS20C25E 03/26/20 SN20C26A GJP 29. Dimethyl Phthalate μg/L

> 1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

μg/L

μg/L

μg/L

μg/L

μg/L

μg/L

μg/L

μg/L

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

1.0

1.0

1.0

1.0

1.0

1.0

1.0

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

03/26/20

03/26/20

03/26/20

03/26/20

03/26/20

03/26/20

03/26/20

03/26/20

30.2.4-Dinitrophenol

31.2,4-Dinitrotoluene

32.2.6-Dinitrotoluene

35. Hexachlorobenzene

36. Hexachlorobutadiene

37. Hexachlorocyclopentadiene

33. Fluoranthene

34. Fluorene



Order: 95575 Page: 90 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-108-031920

Ground Water

Chain of Custody:

184259

Client Project Name: 1-10860

10860

Sample No:
Sample Matrix:

Collect Date:

03/19/20

Client Project No:

Sample Comments:

Definitions:

ample Comments:

Collect Time: 13:30

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 95575-015 Matrix: Ground Water Method: EPA 3510C/EPA 8270E Description: MW-108-031920

							Preparation		Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lni
38. Hexachloroethane	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
40. Isophorone	U	L+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
43.2-Methylphenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
44.3&4-Methylphenol	U		μg/L	10	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
45. Naphthalene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
46.2-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
47.3-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
48.4-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
49. Nitrobenzene	U		μg/L	3.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
50.2-Nitrophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
51.4-Nitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
57. Pentachlorophenol	U	V-	μg/L	20	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
58. Phenanthrene	U		μg/L	2.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
59. Phenol	U	*	μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
60. Pyrene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
61. Pyridine	U	L-	μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	03/25/20	PS20C25E	03/26/20	SN20C26A	G
H, Electrometric				Aliq	uot ID:	95575-015A	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-108-031920				

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 12.3 Н NA 03/24/20 16:04 W D20C24C AMW 1.pH pH Units -1.00 1.0 NA



Order: 95575 Page: 91 of 98 Date: 04/07/20

-											
Client Identification:	Applied Science & Techn Inc Brighton	ology,		Sample D	escription: MW-	108-031920)	Chain	of Custody:	184259	
Client Project Name:	1-10860			Sample N	0:			Collec	t Date:	03/19/20	
Client Project No:	1-10860			Sample M	latrix: Gro u	nd Water		Collec	t Time:	13:30	
Sample Comments:											
Definitions:	Q: Qualifier (see definition	ns at end	of report) NA: No	ot Applicable ‡: F	Parameter i	not included in NEL	AC Scope of A	nalysis.		
Inorganic Anions by	IC				AI	iquot ID:	95575-015A	Matrix: G	round Water		
Method: EPA 9056A					De	scription:	MW-108-031920				
							Prepa	ration	A	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limi	t Dilution	n P. Date	P. Batch	A. Date	A. Batch	Init.
1. Chloride		28000		μg/L	10000	1.0	03/25/20	PW20C25C	03/25/20	WC20C25A	CMB
Residue, Filterable (TDS)				Al	iquot ID:	95575-015A	Matrix: G	round Water		
Method: SM 2540 C-	2011				De	scription:	MW-108-031920				
-							Prepa	ration	A	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limi	t Dilution	n P. Date	P. Batch	A. Date	A. Batch	Init.
1. Total Dissolved	Solids	1200000		μg/L	50000	1.3	03/26/20	WH20C26A	03/27/20	WH20C26A	VO
Nitrogen, Ammonia	(Auto Analyzer)				Al	iquot ID:	95575-015B	Matrix: G	round Water		
Method: SM 4500-Ni	H3 G-2011				De	scription:	MW-108-031920				
							Prepa	ration	A	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limi	Dilution	n P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Ammonia-N		1500		μg/L	10	1.0	04/03/20	PW20D03A	04/03/20	WU20D03A	RKB



11766 E. Grand River

8660 S. Mackinaw Trail

Analytical Laboratory Report Laboratory Project Number: 95575 Laboratory Sample Number: 95575-016

Order: 95575 Page: 92 of 98 Date: 04/07/20

Sample Description: DUPLICATE-031920 184259 Client Identification: Applied Science & Technology, Chain of Custody: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: NA Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 95575-016C **Matrix: Ground Water** Method: ASTM D7237-10 Description: DUPLICATE-031920 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20C27A CMB 1. Cyanide, Free 1.1 mg/L 0.050 10 03/27/20 PW20C27A 03/27/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 95575-016D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: DUPLICATE-031920 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. U T420C26A CJA 1. Arsenic μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 2. Barium 400 100 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 3. Chromium U μg/L 10 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 4. Copper U 4.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 5.Lead U 3.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L 6. Manganese U 10 T420D07A JLH 50 03/26/20 PT20C26A 04/07/20 μg/L U 7. Nickel μg/L 20 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH U μg/L 5.0 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 8. Selenium 9. Silver U μg/L 0.20 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA 10 Vanadium U LLV-4 0 10 03/26/20 PT20C26A 04/07/20 T420D07A JLH μg/L 11.Zinc U 50 10 03/26/20 PT20C26A 03/26/20 T420C26A CJA μg/L Mercury by CVAAS, Total 95575-016D **Matrix: Ground Water** Aliquot ID: Method: EPA 7470A Description: DUPLICATE-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.20 1.0 03/27/20 PM20C27A 03/27/20 M720C27A JLH Polychlorinated Biphenyls (PCBs) Aliquot ID: 95575-016 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: DUPLICATE-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 2. Aroclor-1221 U μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK П 0.20 3. Aroclor-1232 μg/L 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK μg/L 4. Aroclor-1242 U 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK U 5. Aroclor-1248 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 6. Aroclor-1254 U 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 03/26/20 PS20C26A 03/26/20 SF20C26A RDK 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

T: (810) 220-3300

T: (231) 775-8368

F: (810) 220-3311

F: (231) 775-8584

Brighton, MI 48116

Cadillac, MI 49601



Order: 95575 Page: 93 of 98 Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: **DUPLICATE-031920**

Ground Water

Chain of Custody:

184259

1-10860 Client Project Name:

Sample No:

Collect Date:

03/19/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs)

Sample Matrix:

Collect Time: NA

95575-016 **Matrix: Ground Water** Aliquot ID:

Method: EPA 3510C/EPA 8082A Description: DUPLICATE-031920

					Prepa	ration	A	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	03/26/20	PS20C26A	03/26/20	SF20C26A RDK
‡ 9. Aroclor-1268	U	ua/L	0.20	1.0	03/26/20	PS20C26A	03/26/20	SF20C26A RDK

Volatile Organic Compounds (VOCs) by GC/MS 95575-016E **Matrix: Ground Water** Aliquot ID:

Method: EPA 5030C/EPA 8260D Description: DUPLICATE-031920

					Prepa	Preparation		Analysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	μg/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 2. Acrylonitrile	U	μg/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
3. Benzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
4. Bromobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
5. Bromochloromethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
6. Bromodichloromethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
7. Bromoform	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
8. Bromomethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
9.2-Butanone	U	μg/L	25	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
10. n-Butylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
11. sec-Butylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
12.tert-Butylbenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
13. Carbon Disulfide	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
14. Carbon Tetrachloride	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
15. Chlorobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
16. Chloroethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
17. Chloroform	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
18. Chloromethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
19.2-Chlorotoluene	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
21. Dibromochloromethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
22. Dibromomethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
23.1,2-Dichlorobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
24.1,3-Dichlorobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
25.1,4-Dichlorobenzene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
26. Dichlorodifluoromethane	U	μg/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
27.1,1-Dichloroethane	3.0	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
28.1,2-Dichloroethane	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF
29.1,1-Dichloroethene	U	μg/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMF

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 94 of 98 Page: Date: 04/07/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: **DUPLICATE-031920**

Chain of Custody:

184259

Client Project Name: 1-10860

Sample No:

Collect Date:

03/19/20

Client Project No:

Sample Matrix: **Ground Water** Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

95575-016E **Matrix: Ground Water**

Statile Organic Compounds (VOCS) by COMO										
Method: EPA 5030C/EPA 8260D				Desc	cription:	DUPLICATE-0319	920			
						Prepar	ation	Aı	nalysis	
Parameter(s)	Result	Q U	nits	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
30. cis-1,2-Dichloroethene	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
31. trans-1,2-Dichloroethene	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
32.1,2-Dichloropropane	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
33. cis-1,3-Dichloropropene	U	μ	g/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
34. trans-1,3-Dichloropropene	U	μ	g/L	0.50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
35. Ethylbenzene	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
36. Ethylene Dibromide	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
37.2-Hexanone	U	μ	g/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
38. Isopropylbenzene	U	μ	g/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
39.4-Methyl-2-pentanone	U	μ	g/L	50	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JMI
40. Methylene Chloride	U	μ	g/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
‡ 41.2-Methylnaphthalene	15	μ	g/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
42.MTBE	U	μ	g/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
43. Naphthalene	22		g/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
44. n-Propylbenzene	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
45. Styrene	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
46.1,1,1,2-Tetrachloroethane	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
47.1,1,2,2-Tetrachloroethane	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
48. Tetrachloroethene	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
49. Toluene	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
50.1,2,4-Trichlorobenzene	U	μ	g/L	5.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
51.1,1,1-Trichloroethane	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
\$ 52.1,1,2-Trichloroethane	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
53. Trichloroethene	1.1	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
54. Trichlorofluoromethane	U	μ	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
55.1,2,3-Trichloropropane	U		g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
56.1,2,3-Trimethylbenzene	U		g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
57.1,2,4-Trimethylbenzene	U		g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	JM
58.1,3,5-Trimethylbenzene	U	•	g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
59. Vinyl Chloride	U		g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
60.m&p-Xylene	U	•	g/L	2.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
61.o-Xylene	U		g/L	1.0	1.0	03/24/20	VM20C24A	03/24/20	VM20C24A	
,										



Order: 95575 Page: 95 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: **DUPLICATE-031920**

Chain of Custody:

184259

Client Project Name: 1-10860

10000

Sample No:

Collect Date:

03/19/20

Client Project No: 1-10860

Sample Matrix:

Ground Water Collect Time:

Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS	Aliquot ID:	95575-016	Matrix: Ground Water
Method: EPA 3510C/EPA 8270E	Description:	DUPLICATE-031920	

1. Acenaphthene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 2. Acenaphthylene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 3. Aniline U µg/L 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 4. Anthracene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 5. Azobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 6. Benzo(a)anthracene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 7. Benzo(a)pyrene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 8. Benzo(b)fluoranthene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 9. Benzo(ghi)perylene U L+ µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20							Prepa	ration	Δ	nalysis	
2. Acenaphthylene U μg/L 3. Aniline U ' μg/L 4.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 3. Aniline U ' μg/L 4.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 4. Anthracene U μg/L 5.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 5. Azobenzane U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 6. Benzo(a)anthracene U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 7. Benzo(a)pyrene U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 8. Benzo(a)pyrene U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 11. Benzy Alcohol U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 11. Benzy Alcohol U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 11. Benzy Alcohol U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 11. Bis(2-chloroethoxy)methane U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 14. Bis(2-chloroethoxy)methane U μg/L 1.0 1.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 14. Bis(2-chloroethoxy)methane U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 15. 4-Bromopheny/ Phenylether U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 15. 4-Bromopheny/ Phenylether U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 17. Di-r-buy/ Phthalate U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 18. Carbazole U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 19. 4-Chloro-3-methylphenol U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 17. Di-r-buy/ Phthalate U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 17. Di-r-buy/ Phthalate U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 18. Carbazole U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 19. 4-Chloro-3-methylphenol U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN20/25A G.JF 19. 4-Chloro-3-methylphenol U μg/L 1.0 0.0 03/25/20 PS20/25E 03/25/20 SN2	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
3. Anilline	1. Acenaphthene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJF
4. Anthracene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 5.5. Azobenzene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 7. Benzo(a)phrene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 7. Benzo(a)pyrene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 7. Benzo(a)pyrene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 11. Benzo(h)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 11. Benzo(h)fluoranthene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 11. Benzo(h)fluoranthene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 12. Big/c-chloroethoxylmethane U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 14. Bis/c-chloroethyylmether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 14. Bis/c-chloroethyylphthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 15. 4-Bromopheny/ Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 16. Buyl Benzy/ Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Gartazole U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Gartazole U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Gartazole U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Gartazole U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Gartazole U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Gartazole U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Gartazole U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 22. 4-Chloronphenhol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 23. Chloronphenhol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 23. Chloronphenhol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	2. Acenaphthylene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJF
5. Azobenzene	3. Aniline	U	*	μg/L	4.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
6. Benzo(a)anthracene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 7. Benzo(a)pyrene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 9. Benzo(a)pyrene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 9. Benzo(b)fluoranthene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 9. Benzo(b)fluoranthene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 10. Benzo(k)fluoranthene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 11. Benzy Alcohol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 11. Benzy Alcohol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 11. Benzy Alcohol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 13. Bis(2-chloroethox)/methane U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 14. Bis(2-chloroethy)bether U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 14. Bis(2-chlyhexyl)phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 14. Bis(2-chlyhexyl)phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 16. Butyl Benzyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 17. Din-butyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Carbazole U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/2	4. Anthracene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
7. Benzo(a)pyrene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJR 8. Benzo(b)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 9. Benzo(b)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 11. Benzyl Alcohol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 12. Bis(2-chloroethoxy)methane U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 14. Bis(2-ethylnexyl)phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 15. 4. Bromophenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 03/25/20<	‡ 5. Azobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
8. Benzo(h)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 9. Benzo(qh)liperylene U L+ μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 10. Benzo(h)fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 11. Benzyl Alcohol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 12. Bis(2-chloroethoxy)methane U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 13. Bis(2-chloroethy)ghether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 13. Bis(2-chloroethy)ghether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 14. Bis(2-thlyexy)phrhalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 16. Bulyl Benzyl Phrhalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 16. Bulyl Benzyl Phrhalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-phenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 20. 2-Chloro-phenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 21. Chloro-phenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 22. 4-Chloro-phenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 23. Chloro-phenyl Phrhalate U μg/L 5.0 1.0 03/25/20	6. Benzo(a)anthracene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
9. Benzo(ghi)perylene U L+ µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 10. Benzo(k)fluoranthene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 11. Benzo(k)fluoranthene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 11. Benzo(k)fluoranthene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 13. Bis(2-chloroethox)/methane U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 13. Bis(2-chloroethy))ether U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 14. Bis(2-ethylhexy)phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 14. Bis(2-ethylhexy)phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 16. Butyl Benzyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 18. Carbazole U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 18. Carbazole U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 20.2-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 21.2-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 21.2-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 21.2-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 21.2-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 21.2-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 22.4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 23. Chnysene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 24. Dibenzo(a,h)anthracene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 25. Dibenzofuran U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 26. 2,4-Dinhorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 28. 2,4-Dinhorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25	7. Benzo(a)pyrene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
10. Benzo(k)filuoranthene	8.Benzo(b)fluoranthene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
11. Benzyl Alcohol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJZ 12. Bis(2-chloroethox)methane U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJZ 13. Bis(2-chloroethy)ether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 14. Bis(2-chlynexyl)phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 16. Buyl Benzyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 18. Carbazole U μg/L 5.0 1.0 03/25/20	9.Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
11. Benzyl Alcohol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJZ 12. Bis(2-chloroethox)methane U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJZ 13. Bis(2-chloroethy)ether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 14. Bis(2-chlynexyl)phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 15. 4-Bromophenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 16. Buyl Benzyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 18. Carbazole U μg/L 5.0 1.0 03/25/20	10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
13. Bis(2-chloroethyljether U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 14. Bis(2-ethylhexyl)phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 15.4-Bromophenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 16. Butyl Benzyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 17. Di-n-butyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Carbazole U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19.4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19.4-Chloro-3-methylphenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19.4-Chlorophenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 20.2-Chlorophenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 21.2-Chlorophenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 22.4-Chlorophenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 23. Chlorophenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 23. Chlorophenyl Phenylether U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 24. Dibenzo(a,h)anthracene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 25. Dibenzofuran U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 25. Dibenzofuran U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 25. Dibenzofuran U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 27. Diethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 27. Diethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31.2,4-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31.2,4-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31.2,4-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31.2,4-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A G	11. Benzyl Alcohol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
14. Bis(2-ethylhexyl)phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 15. 4-Bromophenyl Phenylether U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 16. Buyl Benzyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 17. Din-buyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Carbazole U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 20. 2-Chloronaphthalene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 21. 2-Chlorophenol U µg/L 5.0 1.0 03/25/20	12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
15.4-Bromophenyl Phenylether U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 16. Butyl Benzyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Carbazole U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 20. 2-Chloronaphthalene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 21.2-Chlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 22.4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/25/20	13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
16. Butyl Benzyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 17. Di-n-butyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 18. Carbazole U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 20. 2-Chloronaphthalene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 21. 2-Chlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 23. Chrysene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 24. Dibenzo(a,h)anthracene U µg/L 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 26. 2.4-Dichlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 26. 2.4-Dichlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 26. 2.4-Dinethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 28. 2.4-Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 28. 2.4-Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/2	14.Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
17. Di-n-butyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 18. Carbazole U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 19. 4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 20. 2-Chloronaphthalene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 21. 2-Chlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 22. 4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 23. Chrysene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 24. Dibenzo(a,h)anthracene U µg/L 25. Dibenzo(a,h)anthracene U µg/L 26. 2. 4-Dichlorophenol U µg/L 27. Diethyl Phthalate U µg/L 28. 2. 4-Dimethylphenol U µg/L 29. 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 28. 2. 4-Dimethylphenol 43 µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 28. 2. 4-Dimethylphenol 43 µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 28. 2. 4-Dimethylphenol 43 µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 29. Dimethyl Phthalate U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 29. Dimethyl Phthalate U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 30. 2. 4-Dinitrotoluene U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 30. 2. 4-Dinitrotoluene U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 31. 2. 4-Dinitrotoluene U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 33. 3-Fluoranthene U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 33. 3-Fluoranthene U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 34. Fluorene U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 35. Hexachlorobutadiene U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 36. Hexachlorobutadiene U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 36. Hexachlorobutadiene U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 36. Hexachlorobutadiene U µg/L 50 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 37. SN20C25A GJE 38. Hexachlorobutadiene U µg/L	15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
18. Carbazole	16. Butyl Benzyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
19.4-Chloro-3-methylphenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 20.2-Chloronaphthalene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 21.2-Chlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 22.4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 23. Chrysene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 25. Dibenzofuran U µg/L 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 26.2,4-Dichlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 27. Diethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 28.2,4-Dimethylphenol 43 µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31.2,4-Dimitrolulene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31.2,4-Dimitrolulene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C	17. Di-n-butyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
20.2-Chloronaphthalene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A G.B. 21.2-Chlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A G.B. 22.4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A G.B. 23. Chrysene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A G.B. 24. Dibenzofuran U µg/L 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A G.B. 25. Dibenzofuran U µg/L 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A G.B. 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A G.B. 27. Diethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E	‡ 18.Carbazole	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
21.2-Chlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GLR 22.4-Chlorophenyl Phenylether U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GLR 23. Chrysene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GLR 24. Dibenzofuran U µg/L 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJR 25. Dibenzofuran U µg/L 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJR 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJR 27. Diethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJR 28. 2,4-Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E	19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
22.4-Chlorophenyl Phenylether U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 23. Chrysene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 25. Dibenzofuran U µg/L 2.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 25. Dibenzofuran U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 27. Diethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 28. 2,4-Dimethylphenol 43 µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 30. 2,4-Dinitrophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 30. 2,4-Dinitrophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31. 2,4-Dinitrotoluene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31. 2,4-Dinitrotoluene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 32. 2,6-Dinitrotoluene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	20.2-Chloronaphthalene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
23. Chrysene U µg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 25. Dibenzofuran U µg/L 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 27. Diethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 28. 2,4-Dimethylphenol 43 µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 28. 2,4-Dimethylphenol 43 µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 30. 2,4-Dinitrophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 31. 2,4-Dinitrophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 31. 2,4-Dinitrotoluene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 32. 2,6-Dinitrotoluene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 33. Fluoranthene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 33. Fluoranthene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 34. Fluorene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 35. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 36. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 36. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJE 36. Hexachlorobutadiene	21.2-Chlorophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
24. Dibenzo(a,h)anthracene U µg/L 2.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 25. Dibenzofuran U µg/L 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 27. Diethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 28. 2,4-Dimethyl phenol 43 µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 30. 2,4-Dinitrophenol U µg/L 20 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31. 2,4-Dinitrotoluene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 32. 2,6-Dinitrotoluene U µg/L 5.0 1.0 03/25/20 PS20C25E 0	22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
25. Dibenzofuran U μg/L 4.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 26. 2,4-Dichlorophenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 27. Diethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 28. 2,4-Dimethylphenol 43 μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 30. 2,4-Dinitrophenol U μg/L 20 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	23. Chrysene	U		μg/L	1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
26. 2,4-Dichlorophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 27. Diethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 28. 2,4-Dimethylphenol 43 µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 30. 2,4-Dinitrophenol U µg/L 20 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31. 2,4-Dinitrophenol U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 32. 2,6-Dinitrotoluene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene	24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
27. Diethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 28. 2,4-Dimethyl phenol 43 μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 30. 2,4-Dinitrophenol U μg/L 20 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31. 2,4-Dinitrophenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U	25. Dibenzofuran	U		μg/L	4.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
28.2,4-Dimethylphenol 43 μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 29. Dimethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 30.2,4-Dinitrophenol U μg/L 20 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31.2,4-Dinitrophenol U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 32.2,6-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene	26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
29. Dimethyl Phthalate U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 30. 2,4-Dinitrophenol U μg/L 20 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	27. Diethyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
30. 2,4-Dinitrophenol U μg/L 20 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene	28.2,4-Dimethylphenol	43		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	29. Dimethyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 33. Fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	30.2,4-Dinitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
33. Fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
33. Fluoranthene U μg/L 1.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 34. Fluorene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 35. Hexachlorobenzene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
35. Hexachlorobenzene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF 36. Hexachlorobutadiene U μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	33. Fluoranthene	U			1.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
36. Hexachlorobutadiene U µg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	34. Fluorene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
1,0	35. Hexachlorobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
37. Hexachlorocyclopentadiene U V- μg/L 5.0 1.0 03/25/20 PS20C25E 03/25/20 SN20C25A GJF	36. Hexachlorobutadiene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
	37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 95575 Page: 96 of 98 Date: 04/07/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: **DUPLICATE-031920**

Chain of Custody:

184259

NA

Client Project Name: 1-10860

O Sample No:

Collect Date:

03/19/20

Client Project No: 1-10860

Sample Matrix:

Ground Water Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS	Aliquot ID:	95575-016	Matrix: Ground Water
Method: EPA 3510C/EPA 8270E	Description:	DUDUICATE-031020	

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
38. Hexachloroethane	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
39. Indeno(1,2,3-cd)pyrene	U		μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
40. Isophorone	U	L+	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
42.2-Methylnaphthalene	12		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
43.2-Methylphenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
45. Naphthalene	18		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
46.2-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
47.3-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
48.4-Nitroaniline	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
49. Nitrobenzene	U		μg/L	3.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
50.2-Nitrophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
51.4-Nitrophenol	U		μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
55. Di-n-octyl Phthalate	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
57. Pentachlorophenol	U	V-	μg/L	20	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
58. Phenanthrene	3.9		μg/L	2.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
59. Phenol	7.2	*	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
60. Pyrene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
61. Pyridine	U	L-	μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	03/25/20	PS20C25E	03/25/20	SN20C25A	GJP

pH, Electrometric Aliquot ID: 95575-016A Matrix: Ground Water

Method: EPA 9040C Description: DUPLICATE-031920

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1.pH	12.5	Н	pH Units	-1.00	1.0	NA	NA	03/24/20 16:05	WD20C24C	CAMW

DCSID: G-610.19 (10/01/19)



Order: 95575 Page: 97 of 98 Date: 04/07/20

Applied Science & Technology, Sample Description: DUPLICATE-031920 Chain of Custody: 184259 Client Identification: Inc. - Brighton 1-10860 03/19/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: NA Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 95575-016A **Matrix: Ground Water** Method: EPA 9056A Description: DUPLICATE-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20C25C WC20C25A CMB 1. Chloride 26000 μg/L 10000 1.0 03/25/20 03/25/20 Residue, Filterable (TDS) Aliquot ID: 95575-016A Matrix: Ground Water Method: SM 2540 C-2011 Description: DUPLICATE-031920 Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Batch A. Date A. Batch Dilution P. Date 1. Total Dissolved Solids 1500000 50000 WH20C26A 03/27/20 WH20C26A VO μg/L 1.3 03/26/20 Aliquot ID: 95575-016B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Description: DUPLICATE-031920 Method: SM 4500-NH3 G-2011 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. ‡ 1. Ammonia-N WU20D03A RKB 2900 μg/L 10 1.0 04/03/20 PW20D03A 04/03/20



Analytical Laboratory Report Laboratory Project Number: 95575

Order: 95575 Page: 98 of 98 Date: 04/07/20

Definitions/ Qualifiers:

- A: Spike recovery or precision unusable due to dilution.
- B: The analyte was detected in the associated method blank.
- E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J: The concentration is an estimated value.
- M: Modified Method
- **U:** The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

: Duplicate analysis not within control limits.

E1 : The reported value is estimated due to the presence of interference.

G+ : Recovery of the associated Surrogate Compound exceeds the upper control limit. Results may be biased high.

H : Hold time exceeded.

L- : Recovery in the associated laboratory sample (LCS) exceeds the lower control limit. Results may be biased low.
 L+ : Recovery in the associated laboratory sample (LCS) exceeds the upper control limit. Results may be biased high.
 LLV- : Recovery in the associated low-level continuing calibration verification sample (LLCCV) exceeds the lower control limit.

Results may be biased low.

: Recovery in the associated continuing calibration verification sample (CCV) exceeds the lower control limit. Results

may be biased low.

: Recovery in the associated continuing calibration verification sample (CCV) exceeds the upper control limit. Results may be biased high.

Y1 : Sample was diluted due to a sample matrix issue.

Analysis Locations:

V-

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)



Thursday, June 11, 2020

Fibertec Project Number: 96300

Project Identification: 1-10860 /1-10860

Submittal Date: 05/28/2020

Mr. Greg Oslosky
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Oslosky,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

Please note that due to high results on samples -001 & -002 the LLHg test was changed to Total Mercury.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Rikki Lott at 4:07 PM, Jun 11, 2020

For Daryl P. Strandbergh Laboratory Director

Enclosures



Order: 96300 Page: 2 of 18 Date: 06/11/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-100s-052720

Ground Water

Chain of Custody:

187649

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date: Collect Time: 05/27/20 14:06

Client Project No: Sample Comments:

Definitions:

Mercury by CVAAS, Total

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water Aliquot ID: 96300-001

Method: EPA 7470A Description: MW-100s-052720

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. M720F2B. AVC 0.110 0.025 06/03/20 PM20F03D 06/03/20 1. Mercury μg/L 1.0



Order: 96300 Page: 3 of 18 Date: 06/11/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-100i-052720

Chain of Custody:

187649

1-10860 Client Project Name:

Sample No:

μg/L

Collect Date:

05/27/20

Sample Comments:

1-10860

Sample Matrix:

Ground Water

Collect Time:

13:20

1. Mercury

Client Project No:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Mercury by CVAAS, Total Method: EPA 7470A

Aliquot ID:

0.025

96300-002

Matrix: Ground Water

Description: MW-100i-052720

Parameter(s) Result Q Units Reporting Limit

0.424

Dilution 1.0

P. Date P. Batch 06/03/20 PM20F03D

Preparation

A. Date A. Batch Init. 06/03/20

Analysis

M720F2B. AVC

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 96300 Page: 4 of 18 Date: 06/11/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-102-052720

Chain of Custody:

187649

1-10860 Client Project Name:

Sample No:

Collect Date:

05/27/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Aliquot ID:

Collect Time:

14:37

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water

Mercury by CVAFS, Low-Level, Total Method: EPA 1631E

Description: MW-102-052720

96300-003

Preparation

Analysis A. Date A. Batch Init.

Parameter(s) 1. Mercury

Result Q Units 0.88 ng/L

0.50

Reporting Limit

Dilution 1.0

P. Date 06/03/20

P. Batch PM20F03E

06/04/20

M520F04A CJA

lab@fibertec.us



Order: 96300 Page: 5 of 18 Date: 06/11/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-103-052720

Chain of Custody:

187649

Client Project Name: 1-10860

Sample No:

Sample Matrix:

Collect Date:

05/27/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Ground Water Collect

Collect Time: 15:45

Mercury by CVAFS, Low-Level, Total Aliquot ID: 96300-004 Matrix: Ground Water

Method: EPA 1631E Description: MW-103-052720

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 2.0 06/03/20 PM20F03E M520F04A CJA 1. Mercury 27 ng/L 4.0 06/04/20



Order: 96300 Page: 6 of 18 Date: 06/11/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-104-052720

Chain of Custody:

187649

Client Project Name:

Sample No:

Collect Date:

05/27/20

Client Project No:

1-10860 1-10860

Sample Matrix:

Ground Water Collect Time: 15:55

Sample Comments:

Method: EPA 1631E

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Mercury by CVAFS, Low-Level, Total

Aliquot ID: 96300-005 **Matrix: Ground Water**

Description: MW-104-052720

Preparation

Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 22 2.0 06/03/20 PM20F03E M520F04A CJA 1. Mercury ng/L 4.0 06/04/20



Order: 96300 Page: 7 of 18 Date: 06/11/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-107s-052720

Sample No:

Sample Matrix:

Chain of Custody:

Collect Time:

187649

Client Project Name: 1-10860

1860

Collect Date:

05/27/20 17:06

Client Project No:

Sample Comments:

Definitions: Q: Qual

Mercury by CVAFS, Low-Level, Total

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Ground Water

Aliquot ID: 96300-006 Matrix: Ground Water

Method: EPA 1631E Description: MW-107s-052720

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 47 5.0 06/03/20 PM20F03E M520F04A CJA 1. Mercury ng/L 10 06/04/20



Order: 96300 Page: 8 of 18 Date: 06/11/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107D-052720

Ground Water

Aliquot ID:

Chain of Custody:

187649

17:05

1-10860 Client Project Name:

Sample No:

Collect Date: Collect Time: 05/27/20

Client Project No: Sample Comments:

Definitions:

Mercury by CVAFS, Low-Level, Total

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Matrix: Ground Water

Method: EPA 1631E Description: MW-107D-052720

96300-007

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 0.50 06/03/20 PM20F03E M520F04A CJA 1. Mercury ng/L 1.0 06/04/20



Order: 96300 Page: 9 of 18 Date: 06/11/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: TMW-26-052720

Reporting Limit

2.0

Chain of Custody:

187649

1-10860 Client Project Name:

Sample No: Sample Matrix: Collect Date:

05/27/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Result

20

Q

Ground Water

Collect Time:

14:37

Mercury by CVAFS, Low-Level, Total Aliquot ID:

Units

ng/L

Method: EPA 1631E

Parameter(s)

1. Mercury

Dilution

4.0

96300-008

Matrix: Ground Water

P. Batch

PM20F03E

Description: TMW-26-052720

Preparation P. Date

06/03/20

A. Date A. Batch Init. M520F04A CJA 06/04/20

Analysis

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 96300 10 of 18 Page: Date: 06/11/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-105-052820

Chain of Custody:

189212

1-10860 Client Project Name:

Sample No:

Collect Date:

05/28/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Ground Water

Collect Time:

08:50

Mercury by CVAFS, Low-Level, Total Aliquot ID:

Method: EPA 1631E

96300-009

Matrix: Ground Water

Description: MW-105-052820

Analysis

A. Batch Init.

Parameter(s) 1. Mercury

Result Q Units 5.6 ng/L

Reporting Limit Dilution 0.50

1.0

06/03/20

P. Date

Preparation

P. Batch PM20F03E

A. Date 06/04/20

M520F04A CJA



Order: 96300 11 of 18 Page: Date: 06/11/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-106-052820

Ground Water

Chain of Custody:

189212

1-10860 Client Project Name:

Sample No:

Collect Date:

05/28/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Collect Time:

09:25

Mercury by CVAFS, Low-Level, Total **Matrix: Ground Water** Aliquot ID: 96300-010

Sample Matrix:

Method: EPA 1631E

Description: MW-106-052820

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 0.82 0.50 06/03/20 PM20F03E M520F04A CJA 1. Mercury ng/L 1.0 06/04/20



Order: 96300 Page: 12 of 18 Date: 06/11/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-108-052820

Chain of Custody:

189212

1-10860 Client Project Name:

Sample No:

Sample Matrix:

Collect Date:

05/28/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Ground Water

Collect Time:

10:50

Mercury by CVAFS, Low-Level, Total Aliquot ID:

Method: EPA 1631E

96300-011

Matrix: Ground Water

Description: MW-108-052820

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 0.50 06/03/20 PM20F03E M520F04A CJA 1. Mercury 0.78 ng/L 1.0 06/04/20



Order: 96300 13 of 18 Page: Date: 06/11/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-109D-052820

Chain of Custody:

189212

1-10860 Client Project Name:

Sample No:

Collect Date:

05/28/20

Sample Comments:

Client Project No:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Ground Water

Collect Time:

10:35

Mercury by CVAFS, Low-Level, Total Aliquot ID: 96300-012

Sample Matrix:

Method: EPA 1631E

Description: MW-109D-052820

Matrix: Ground Water

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1.2 0.50 06/03/20 PM20F03E M520F04A CJA 1. Mercury ng/L 1.0 06/04/20



Order: 96300 14 of 18 Page: Date: 06/11/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-110s-052820

Chain of Custody:

189212

1-10860 Client Project Name:

Sample No:

Result

0.69

Collect Date:

05/28/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

1-10860

Sample Matrix:

Ground Water

Collect Time:

13:20

Mercury by CVAFS, Low-Level, Total Aliquot ID: 96300-013

Method: EPA 1631E

Matrix: Ground Water

Description: MW-110s-052820

Preparation

Analysis A. Date A. Batch Init.

Parameter(s) 1. Mercury Q Units ng/L

Reporting Limit 0.50

1.0

Dilution

06/03/20

P. Date

P. Batch PM20F03E

06/04/20

M520F04A CJA



Sample Description: MW-110D-052820

Order: 96300 Page: 15 of 18 Date: 06/11/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

- Brighton

Chain of Custody:

189212

Client Project Name: 1-10860

Sample No:

Sample Matrix:

Collect Date:

05/28/20

Sample Comments:

Client Project No:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Ground Water

Collect Time:

13:20

Mercury by CVAFS, Low-Level, Total Aliquot ID: 96300-014 Matrix: Ground Water

Method: EPA 1631E Description: MW-110D-052820

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1.8 0.50 06/03/20 PM20F03E M520F04A CJA 1. Mercury ng/L 1.0 06/04/20



Order: 96300 16 of 18 Page: Date: 06/11/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-101-052820

Chain of Custody:

189212

1-10860 Client Project Name:

Sample No:

Collect Date:

05/28/20

Client Project No: 1-10860

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Ground Water

Collect Time:

12:30

Mercury by CVAFS, Low-Level, Total Aliquot ID:

Method: EPA 1631E

96300-015

Matrix: Ground Water

Description: MW-101-052820

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 12 06/03/20 PM20F03E M520F04A CJA 1. Mercury ng/L 1.0 2.0 06/04/20



Order: 96300 17 of 18 Page: Date: 06/11/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: DUP-MW

Chain of Custody:

189212

Client Project Name:

Sample No:

Collect Date:

05/28/20

Client Project No:

1-10860 1-10860

Sample Matrix:

Ground Water

Collect Time:

NA

Sample Comments:

Definitions:

Method: EPA 1631E

Mercury by CVAFS, Low-Level, Total

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 96300-016

Description: DUP-MW

Matrix: Ground Water

						Prepai	ration	Α	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	0.75		ng/L	0.50	1.0	06/03/20	PM20F03E	06/04/20	M520F04A	CJA



Analytical Laboratory Report Laboratory Project Number: 96300

Order: 96300 Page: 18 of 18 Date: 06/11/20

Definitions/ Qualifiers:

- A: Spike recovery or precision unusable due to dilution.
- B: The analyte was detected in the associated method blank.
- E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J: The concentration is an estimated value.
- M: Modified Method
- **U:** The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)



Friday, June 19, 2020

Fibertec Project Number: 96319

Project Identification: 1-10860 /1-10860

Submittal Date: 05/28/2020

Mr. Greg Oslosky
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Oslosky,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

Please note that samples 1, 2, 4, 12, 13, 14, 16, for mentals analysis, arrived at the lab with a pH outside of the specified criteria of ≤2. The pH was adjusted at the lab. Results may be biased low.

Please note that sample 001 for Total Phosphorus analysis arrived at the lab with a pH outside of the specified criteria of ≤2. The pH as adjusted at the lab. Results may be biased low.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Jesse Alton at 9:57 AM, Jun 19, 2020

For Daryl P. Strandbergh Laboratory Director

Enclosures



1914 Holloway Drive

11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Holt, MI 48842

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-001

Order: 96319 Page: 2 of 100 Date: 06/19/20

Applied Science & Technology, 187648 Client Identification: Sample Description: MW-100s-052720 Chain of Custody: Inc. - Brighton 1-10860 05/27/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: 14:06 Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-001D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-100s-052720 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.59 mg/L 0.050 10 06/04/20 PW20F04B 06/04/20 WQ20F04A AMW Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-001E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-100s-052720 Preparation Analysis Q Units Reporting Limit Dilution Parameter(s) Result P. Date P. Batch A. Date A. Batch Init. 5.0 PT20F04A T420F04B JLH 1. Arsenic 15 μg/L 10 06/04/20 06/04/20 2. Barium 670 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium U μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper U 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L U 5. Lead 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel 35 20 10 06/04/20 PT20F04A 06/04/20 T420F04B μg/L 8. Selenium 9.0 μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver U μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B U LLV-10 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 06/04/20 U LLV+ T420F04B JLH 11. Zinc μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-001E Matrix: Ground Water Method: EPA 7470A Description: MW-100s-052720 Preparation Analysis Q Units P. Date A. Date Parameter(s) Result Reporting Limit Dilution P. Batch A. Batch Init. 1. Mercury 0.098 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC μg/L Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-001 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-100s-052720 Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/08/20 SF20F08A TKT 2. Aroclor-1221 U Y1 μg/L 1.5 10 06/03/20 PS20F03E 06/08/20 SF20F08A TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/08/20 SF20F08A TKT μg/L 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/08/20 SF20F08A TKT μg/L 5. Aroclor-1248 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/08/20 SF20F08A TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F08A TKT ua/L 06/08/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/08/20 SF20F08A TKT

F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

T: (517) 699-0345

T: (810) 220-3300

T: (231) 775-8368



Order: Page: Date:

96319 3 of 100 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-100s-052720 Chain of Custody:

187648

1-10860 Client Project Name:

Sample No:

Collect Date: Collect Time: 05/27/20 14:06

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Aliquot ID: 96319-001

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water

Description: MW-100s-052720

					Prepa	aration	ļ	Analysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

Ground Water

96319-001F

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D				Des	cription: N	IW-100s-052720)		
						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch In
1. Acetone	57	Y1	μg/L	50	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
‡ 2. Acrylonitrile	U	Y1	μg/L	10	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
3. Benzene	76	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
4. Bromobenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
5. Bromochloromethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
6. Bromodichloromethane	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
7. Bromoform	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
8. Bromomethane	U	Y1	μg/L	25	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
9. 2-Butanone	U	Y1	μg/L	25	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
10. n-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
11. sec-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
12. tert-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
13. Carbon Disulfide	9.6	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
14. Carbon Tetrachloride	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
15. Chlorobenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
16. Chloroethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
17. Chloroform	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
18. Chloromethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
19. 2-Chlorotoluene	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
20.1,2-Dibromo-3-chloropropane (SIM)	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
21. Dibromochloromethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
22. Dibromomethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
23. 1,2-Dichlorobenzene	5.7	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
24. 1,3-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
25. 1,4-Dichlorobenzene	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
26. Dichlorodifluoromethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
27.1,1-Dichloroethane	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
28. 1,2-Dichloroethane	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL
29. 1,1-Dichloroethene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A JL

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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Order: 96319 Page: 4 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-100s-052720

Chain of Custody:

187648

Client Project Name: 1-10860

O Sample No:

Collect Date:

05/27/20

Client Project No: 1-10

1-10860 Sample Matrix:

Ground Water

Collect Time:

14:06

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: No

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 96319-001F

Description: MW-100s-052720

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 30. cis-1,2-Dichloroethene 5.3 Y1 μg/L 2.5 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 31. trans-1.2-Dichloroethene U Y1 μg/L 2.5 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 32. 1,2-Dichloropropane U Y1 2.5 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L 33. cis-1,3-Dichloropropene u 25 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM Y1 μg/L 34. trans-1,3-Dichloropropene U 2.5 06/03/20 VB20F03A 06/03/20 VB20F03A JLM Y1 μg/L 5.0 Y1 25 VB20F03A 06/03/20 VB20F03A JLM 35. Ethylbenzene 9.3 μg/L 5.0 06/03/20 36. Ethylene Dibromide U Y1 μg/L 2.5 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 37.2-Hexanone 5.0 VB20F03A VB20F03A JLM U Y1 μg/L 50 06/03/20 06/03/20 38. Isopropylbenzene U Y1 5.0 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JI M ua/L 50 5.0 VB20F03A 39. 4-Methyl-2-pentanone u Y1 μg/L 06/03/20 06/03/20 VB20F03A JLM 40. Methylene Chloride U Y1 $\mu g/L$ 5.0 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM ‡ 41.2-Methylnaphthalene U V+ μg/L 25 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 42. MTBE U 5.0 5.0 VB20F03A VB20F03A JLM Y1 μg/L 06/03/20 06/03/20 43. Naphthalene 240 Y1 5.0 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L 44. n-Propylbenzene Y1 25 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM U μg/L U 5.0 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 45. Styrene Y1 μg/L 46. 1,1,1,2-Tetrachloroethane U Y1 5.0 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L U 2.5 06/03/20 VB20F03A 06/03/20 VB20F03A 47. 1,1,2,2-Tetrachloroethane Y1 μg/L 5.0 U Y1 25 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 48. Tetrachloroethene μg/L 49. Toluene 20 Y1 25 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM ua/L 5.0 U Y1 50. 1,2,4-Trichlorobenzene μg/L 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 51.1,1,1-Trichloroethane U Y1 μg/L 2.5 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM ‡ 52.1,1,2-Trichloroethane U Y1 μg/L 5.0 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM U Y1 μg/L 2.5 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 53. Trichloroethene 54. Trichlorofluoromethane U Y1 2.5 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L U 55. 1,2,3-Trichloropropane Y1 5.0 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L ‡ 56.1,2,3-Trimethylbenzene 9.9 Y1 μg/L 2.5 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 15 Y1 2.5 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 57. 1,2,4-Trimethylbenzene 5.0 μg/L 58. 1,3,5-Trimethylbenzene 12 Y1 2.5 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L 5.0 59. Vinyl Chloride 7.6 2.5 5.0 VB20F03A VB20F03A JLM Y1 μg/L 06/03/20 06/03/20 60. m&p-Xylene 55 Y1 μg/L 5.0 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 61. o-Xylene 29 Y1 μg/L 2.5 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM ‡ 62. Xylenes 84 Y1 7.5 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L



Order: 96319 Page: 5 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100s-052720

Chain of Custody:

187648

Client Project Name: 1

1-10860

Sample No:

Collect Date:

05/27/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

NA: Not Applicable

Ground Water

Collect Time:

‡: Parameter not included in NELAC Scope of Analysis.

14:06

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 96319-001 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-100s-052720

Welliou. EFA 33100/EFA 0270E				Des	cription. w	1005-052720	J			
						Prepa	ration	A	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
1. Acenaphthene	6.0	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
3. Aniline	7.3	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
4. Anthracene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
5. Azobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	G
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	C
15. 4-Bromophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
18. Carbazole	7.8	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
19. 4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
20. 2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
22. 4-Chlorophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
23. Chrysene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
25. Dibenzofuran	4.2	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
28. 2,4-Dimethylphenol	39	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	(
30. 2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
31. 2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
32. 2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
33. Fluoranthene	1.1	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
34. Fluorene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
35. Hexachlorobenzene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
37. Hexachlorocyclopentadiene	U		μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
22		<u> </u>	r9' -	3.0		00,02,20	. 020. 021	00,00,20	3.120.000	_

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: 96319 Page: 6 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-100s-052720

Chain of Custody:

187648

Client Project Name: 1-1

1-10860

Sample No:

Collect Date:

05/27/20

Client Project No:

Sample Matrix:

Ground Water Collect Time:

t Time: 14:06

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

1-10860

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	96319-001 MW-100s-052720	Matrix: G	round Water		
					op	Prepara	ation	Δr	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
40. Isophorone	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
42.2-Methylnaphthalene	7.3	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
43. 2-Methylphenol	8.9	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
‡ 44.3&4-Methylphenol	150	G+	μg/L	10	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
45. Naphthalene	170	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
47.3-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
48.4-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
58. Phenanthrene	5.8	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
59. Phenol	57	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
60. Pyrene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
61. Pyridine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
63.2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
64.2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
pH, Electrometric				Aliq	uot ID:	96319-001B	Matrix: G	round Water		
Method: EPA 9040C				•		MW-100s-052720				

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Parameter(s)

1. pH

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

Units

pH Units

Reporting Limit

-1.00

Result

12.6

Q

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

Dilution

1.0

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

A. Date

Analysis

06/03/20 21:05 WD20F03A JMK

A. Batch

Preparation

P. Batch

NA

P. Date

NA



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-001

Order: 96319 Page: 7 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: MW-100s-052720 Chain of Custody: 187648 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/27/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:06 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-001B Matrix: Ground Water Method: EPA 9056A Description: MW-100s-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F06A CMB 1. Chloride 290000 μg/L 10000 10 06/06/20 06/06/20 Residue, Filterable (TDS) Aliquot ID: 96319-001A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-100s-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 2900000 06/03/20 06/04/20 WH20F03A JMK μg/L 1.3 Aliquot ID: 96319-001C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-100s-052720

Reporting Limit

50

Dilution

5.0

DCSID: G-610.19 (10/01/19)

Preparation

P. Batch

PW20F02A

P. Date

06/02/20

Result

29000

Q

Units

μg/L

Analysis

A. Batch

WU20F02A VO

Init.

A. Date

06/02/20



Order: Page: Date:

96319 8 of 100 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-100i-052720

Ground Water

Chain of Custody:

187648

Client Project Name: 1-10860

Sample No: Sample Matrix: Collect Date: Collect Time: 05/27/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

13:20

Cyanide, Free (without distillation) Aliquot ID: 96319-002D

NA: Not Applicable

Method: ASTM D7237-10

Description: MW-100i-052720

‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water

Preparation Analysis Reporting Limit Parameter(s) Result Q Units Dilution P. Date P. Batch A. Date A. Batch Init. WQ20F04A AMW 1. Cyanide, Free 0.45 mg/L 0.050 10 06/04/20 PW20F04B 06/04/20

Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-002E Matrix: Ground Water

Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-100i-052720

						Prepa	ration	Α	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	400		μg/L	5.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
2. Barium	U		μg/L	100	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
3. Chromium	12		μg/L	10	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
4. Copper	27		μg/L	4.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
5. Lead	29		μg/L	3.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
6. Manganese	240		μg/L	50	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
7. Nickel	U		μg/L	20	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
8. Selenium	U		μg/L	5.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
9. Silver	U		μg/L	0.20	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
10. Vanadium	15	LLV-	μg/L	4.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
11 Zinc	60	ПV	ua/l	50	10	06/04/20	PT20F04A	06/04/20	T420F04B	JILE

Mercury by CVAAS, Total Aliquot ID: 96319-002E Matrix: Ground Water

Method: EPA 7470A Description: MW-100i-052720

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury 0.139 μg/L 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC

Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-002 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-100i-052720

						Preparation		Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT
2. Aroclor-1221	U	Y1	μg/L	0.75	5.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT
3. Aroclor-1232	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT
4. Aroclor-1242	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT
5. Aroclor-1248	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT
6. Aroclor-1254	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT
7. Aroclor-1260	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT

1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 96319 9 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-100i-052720 Chain of Custody:

187648

Client Project Name:

1-10860

Sample No:

Collect Date:

05/27/20

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time: 13:20

Sample Comments:

Definitions:

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 96319-002 **Matrix: Ground Water**

Description: MW-100i-052720

					Prepa	ration	Δ	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/08/20	SF20F08A TKT

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-002F **Matrix: Ground Water** Method: EPA 5030C/EPA 8260D Description: MW-100i-052720

Davamatav(a)	Deavli	0	Unite	Deposition Limit	Dilution	Prepa P. Date	ration P. Batch	A. Date	nalysis A. Batch	le:
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date		A. Date		lni
1. Acetone	U		μg/L	100	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
2. Acrylonitrile	U	Y1	μg/L	40	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
3. Benzene	24	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
4. Bromobenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
5. Bromochloromethane	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
6. Bromodichloromethane	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
7. Bromoform	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
8. Bromomethane	U	Y1	μg/L	100	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
9. 2-Butanone	U	Y1	μg/L	100	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
10. n-Butylbenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	Jl
11. sec-Butylbenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
12. tert-Butylbenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
13. Carbon Disulfide	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
14. Carbon Tetrachloride	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
15. Chlorobenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
16. Chloroethane	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
17. Chloroform	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
18. Chloromethane	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
19. 2-Chlorotoluene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
20. 1,2-Dibromo-3-chloropropane (SIM)	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
21. Dibromochloromethane	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
22. Dibromomethane	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
23. 1,2-Dichlorobenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
24. 1,3-Dichlorobenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
25. 1,4-Dichlorobenzene	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
26. Dichlorodifluoromethane	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
27. 1,1-Dichloroethane	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
28. 1,2-Dichloroethane	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J
29. 1,1-Dichloroethene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	J



Order: 96319 Page: 10 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100i-052720

Chain of Custody:

187648

Client Project Name: 1

1-10860

Sample No: Sample Matrix: Collect Date:

05/27/20

13:20

Client Project No:

Gampi

Ground Water Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

• , , ,	ntile Organic Compounds (VOCs) by GC/MS nod: EPA 5030C/EPA 8260D					96319-002F	Matrix: G	round Water		
Method: EPA 5030C/EPA 8260D				Des	cription:	MW-100i-052720				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepara P. Date	ation P. Batch	A. Date	nalysis A. Batch	Init.
30. cis-1,2-Dichloroethene	20	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
31. trans-1,2-Dichloroethene		Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
32. 1,2-Dichloropropane	U			10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
33. cis-1,3-Dichloropropene		Y1	μg/L μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
34. trans-1,3-Dichloropropene	U		μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
35. Ethylbenzene		Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
36. Ethylene Dibromide	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
37. 2-Hexanone		Y1	μg/L	100	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
38. Isopropylbenzene	U	Y1		100	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
39. 4-Methyl-2-pentanone		Y1	μg/L μg/L	50	20	06/03/20	VB20F03A VB20F03A	06/03/20	VB20F03A	
40. Methylene Chloride	U	Y1		10			VB20F03A VB20F03A		VB20F03A VB20F03A	
•		V+	μg/L	100	20 20	06/03/20 06/03/20	VB20F03A VB20F03A	06/03/20 06/03/20	VB20F03A VB20F03A	
41.2-Methylnaphthalene 42.MTBE			μg/L						VB20F03A VB20F03A	
	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20		
43. Naphthalene		Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
44. n-Propylbenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
45. Styrene		Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
46. 1,1,1,2-Tetrachloroethane	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
47.1,1,2,2-Tetrachloroethane		Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
48. Tetrachloroethene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
49. Toluene		Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
50.1,2,4-Trichlorobenzene	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
51.1,1,1-Trichloroethane		Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
‡ 52.1,1,2-Trichloroethane	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
53. Trichloroethene		Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
54. Trichlorofluoromethane	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
55. 1,2,3-Trichloropropane		Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
‡ 56. 1,2,3-Trimethylbenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
57. 1,2,4-Trimethylbenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
58. 1,3,5-Trimethylbenzene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
59. Vinyl Chloride	22	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
60. m&p-Xylene	U	Y1	μg/L	20	20	06/03/20	VB20F03A	06/03/20	VB20F03A	
61. o-Xylene	U	Y1	μg/L	10	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
‡ 62. Xylenes	U	Y1	μg/L	30	20	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM



Order: 96319 11 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

MW-100i-052720 Sample Description:

Chain of Custody:

187648

Client Project Name:

1-10860

Sample No:

Collect Date:

05/27/20

Client Project No:

1-10860

Sample Matrix: **Ground Water**

Collect Time:

13:20

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS

Aliquot ID:

96319-002

Matrix: Ground Water

Method: EPA 3510C/EPA 8270E

Description: MW-100i-052720

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepai P. Date	ration P. Batch	A. Date	nalysis A. Batch	Init
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
3. Aniline	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
4. Anthracene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
5. Azobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
6. Benzo(a)anthracene	1.0	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
8. Benzo(b)fluoranthene	1.3	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
15.4-Bromophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
18. Carbazole	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
19.4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
20.2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
22.4-Chlorophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
23. Chrysene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
28. 2,4-Dimethylphenol	7.2	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
30.2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
32.2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
33. Fluoranthene	3.1	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
34. Fluorene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
35. Hexachlorobenzene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: 96319 Page: 12 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100i-052720

Ground Water

Chain of Custody:

187648

Client Project Name: 1-10

1-10860

Sample No:

Sample Matrix:

Collect Date:
Collect Time:

05/27/20

13:20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 96319-002 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E				Des	cription: M	W-100i-052720				
						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
40. Isophorone	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
42.2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
43.2-Methylphenol	13	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
‡ 44.3&4-Methylphenol	31	G+	μg/L	10	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
45. Naphthalene	5.9	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
46.2-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
47.3-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
56.2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
58. Phenanthrene	4.4	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
59. Phenol	24	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
60. Pyrene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
61. Pyridine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
62.1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
63.2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
64.2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF

pH, Electrometric Aliquot ID: 96319-002B Matrix: Ground Water

Method: EPA 9040C Description: MW-100i-052720

						Prepara	ation	An	alysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. pH	10.7	Н	pH Units	-1.00	1.0	NA	NA	06/03/20 20:53	WD20F03A	JMK



Order: 96319 Page: 13 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: MW-100i-052720 Chain of Custody: 187648 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/27/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:20 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-002B Matrix: Ground Water Method: EPA 9056A Description: MW-100i-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F06A CMB 1. Chloride 140000 μg/L 10000 5.0 06/06/20 06/06/20 Residue, Filterable (TDS) Aliquot ID: 96319-002A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-100i-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 2600000 06/03/20 06/04/20 WH20F03A JMK μg/L 1.3 Aliquot ID: 96319-002C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-100i-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N 23000 50 5.0 06/02/20 PW20F02A 06/02/20 WU20F02A VO μg/L



11766 E. Grand River

8660 S. Mackinaw Trail

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-003

96319 Order: Page: 14 of 100 Date: 06/19/20

Applied Science & Technology, 187648 Client Identification: Sample Description: MW-102-052720 Chain of Custody: Inc. - Brighton 1-10860 05/27/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: 11:12 Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-003D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-102-052720 Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.0059 mg/L 0.0050 1.0 06/04/20 PW20F04B 06/04/20 WQ20F04A AMW Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-003E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-102-052720 Preparation Analysis Q Units Reporting Limit Dilution Parameter(s) Result P. Date P. Batch A. Date A. Batch Init. U LLV-PT20F04A 5.0 T420F04B JLH 1. Arsenic μg/L 10 06/04/20 06/04/20 2. Barium U 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium U μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper U 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L U 5. Lead 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel U 20 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 8. Selenium μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver U μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B U LLV-10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 U LLV+ T420F04B JLH 11. Zinc μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-003E Matrix: Ground Water Method: EPA 7470A Description: MW-102-052720 Preparation Analysis Result Q Units P. Date A. Date Parameter(s) Reporting Limit Dilution P. Batch A. Batch Init. 1. Mercury U μg/L 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-003 Matrix: Ground Water Description: MW-102-052720 Method: EPA 3510C/EPA 8082A Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT ua/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

T: (810) 220-3300

F: (810) 220-3311

F: (231) 775-8584



Order: 963
Page: 15 c
Date: 06/

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Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-102-052720

Chain of Custody:

187648

Client Project Name: 1-10

1-10860

Sample No:
Sample Matrix:

Collect Date:

05/27/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Ground Water

‡: Parameter not included in NELAC Scope of Analysis.

Collect Time: 11:12

Polychlorinated Biphenyls (PCBs)

Aliquot ID: 96319-003 Matrix: Ground Water

NA: Not Applicable

Method: EPA 3510C/EPA 8082A Description: MW-102-052720

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. SF20F04C TKT 8. Aroclor-1262 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 U 9. Aroclor-1268 $\mu g/L$ 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-003F Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-102-052720

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
3. Benzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
4. Bromobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
5. Bromochloromethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
6. Bromodichloromethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
7. Bromoform	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
8. Bromomethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
9. 2-Butanone	U		μg/L	25	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
10. n-Butylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
11. sec-Butylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
12. tert-Butylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
13. Carbon Disulfide	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
15. Chlorobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
16. Chloroethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
17. Chloroform	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
18. Chloromethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
19. 2-Chlorotoluene	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
21. Dibromochloromethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
22. Dibromomethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
24. 1,3-Dichlorobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM

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Order: 96319 Page: 16 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-102-052720

Chain of Custody:

187648

Client Project Name: 1-10860

Sample No:

Collect Date:

05/27/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Ground Water

‡: Parameter not included in NELAC Scope of Analysis.

Collect Time:

11:12

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-003F Matrix: Ground Water

NA: Not Applicable

Sample Matrix:

Method: EPA 5030C/EPA 8260D Description: MW-102-052720 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 30. cis-1,2-Dichloroethene U μg/L 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM 31. trans-1.2-Dichloroethene U μg/L 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM 32. 1,2-Dichloropropane U 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM μg/L U 33. cis-1,3-Dichloropropene 0.50 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JI M μg/L 34. trans-1,3-Dichloropropene U 0.50 06/02/20 VB20F02A 06/02/20 VB20F02A JLM μg/L 1.0 U VB20F02A 06/02/20 VB20F02A JLM 35. Ethylbenzene μg/L 1.0 10 06/02/20 36. Ethylene Dibromide U μg/L 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM 37.2-Hexanone 06/02/20 VB20F02A VB20F02A JLM U V+ μg/L 50 10 06/02/20 38. Isopropylbenzene U 5.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JI M ua/L u 50 VB20F02A 39. 4-Methyl-2-pentanone μg/L 1.0 06/02/20 06/02/20 VB20F02A JLM 40. Methylene Chloride U 5.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM μg/L ‡ 41.2-Methylnaphthalene U V+ μg/L 5.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM 42. MTBE U 5.0 1.0 VB20F02A VB20F02A JLM μg/L 06/02/20 06/02/20 43. Naphthalene U 5.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM μg/L 44. n-Propylbenzene U 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JI M μg/L U 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM 45. Styrene μg/L 46. 1,1,1,2-Tetrachloroethane U 10 10 06/02/20 VB20F02A 06/02/20 VB20F02A JLM μg/L U 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A 47. 1,1,2,2-Tetrachloroethane μg/L U 06/02/20 VB20F02A 06/02/20 VB20F02A JI M 48. Tetrachloroethene μg/L 1.0 1.0 49. Toluene U 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM ua/L U 5.0 1.0 50. 1,2,4-Trichlorobenzene μg/L 06/02/20 VB20F02A 06/02/20 VB20F02A JLM U 51.1,1,1-Trichloroethane μq/L 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM U ‡ 52.1,1,2-Trichloroethane μg/L 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM U 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM 53. Trichloroethene μq/L 54. Trichlorofluoromethane U 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM μg/L U 55. 1,2,3-Trichloropropane 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM μg/L ‡ 56.1,2,3-Trimethylbenzene U μg/L 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM U 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM 57. 1,2,4-Trimethylbenzene μg/L 1.0 58. 1,3,5-Trimethylbenzene U 06/02/20 VB20F02A 06/02/20 VB20F02A JLM μg/L 1.0 1.0 59. Vinyl Chloride U 1.0 1.0 VB20F02A 06/02/20 VB20F02A JLM μg/L 06/02/20 U 60. m&p-Xylene μg/L 2.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM П 61. o-Xylene μg/L 1.0 1.0 06/02/20 VB20F02A 06/02/20 VB20F02A JLM

μg/L

U

1.0

06/02/20

VB20F02A

06/02/20

3.0

‡ 62. Xylenes

VB20F02A JLM



Order: 96319 17 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

MW-102-052720 Sample Description:

Ground Water

Chain of Custody:

187648

Client Project Name: 1-10860

Sample No:

Collect Date: Collect Time: 05/27/20 11:12

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				-	uot ID: cription:	96319-003 MW-102-052720	Matrix: G	round Water		
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
3. Aniline	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
4. Anthracene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
15. 4-Bromophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
‡ 18. Carbazole	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
19. 4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
20. 2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
22.4-Chlorophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
23. Chrysene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
28. 2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
30.2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
32.2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
34. Fluorene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
35. Hexachlorobenzene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF

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Order: 96319 Page: Date:

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Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

MW-102-052720 Sample Description:

Chain of Custody:

187648

Client Project Name:

1-10860

Sample No:

Collect Date:

05/27/20

Client Project No:

Sample Matrix:

Ground Water Collect Time:

11:12

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				-	uot ID:	96319-003 MW-102-052720	Matrix: G	Pround Water		
Michiga. El A 65100/El A 62702				DC3(oription.	Prepara	ntion	٨	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
40. Isophorone	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
42. 2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
‡ 44.3&4-Methylphenol	U	G+	μg/L	10	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
45. Naphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
47. 3-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
58. Phenanthrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
59. Phenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
60. Pyrene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
61. Pyridine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
64.2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
pH, Electrometric				Aliq	uot ID:	96319-003B	Matrix: G	Ground Water		
Method: EPA 9040C				Desc	cription:	MW-102-052720				
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

1.pH

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

8.25 H

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

-1.00

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

06/03/20 20:36 WD20F03A JMK

NA

NA



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-003

Order: 96319 Page: 19 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: MW-102-052720 Chain of Custody: 187648 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/27/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 11:12 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-003B Matrix: Ground Water Method: EPA 9056A Description: MW-102-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 17000 μg/L 10000 1.0 06/05/20 06/05/20 Residue, Filterable (TDS) Aliquot ID: 96319-003A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-102-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 300000 1.3 06/03/20 06/04/20 WH20F03A JMK μg/L Aliquot ID: 96319-003C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-102-052720 Preparation Analysis

Reporting Limit

10

Dilution

1.0

P. Date

06/02/20

P. Batch

PW20F02A

A. Date

06/02/20

A. Batch

WU20F02A VO

Init.

Result

58

Q

Units

μg/L

RSN: 96319-200619094841



Order: Page: Date:

96319 20 of 100 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-103-052720 Chain of Custody:

187648

1-10860 Client Project Name:

Sample No:

Result

0.14

Collect Date:

05/27/20

WQ20F04A AMW

Client Project No: Sample Comments:

Parameter(s)

1. Cyanide, Free

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix: **Ground Water** Collect Time:

15:45

NA: Not Applicable

Cyanide, Free (without distillation) Method: ASTM D7237-10

Aliquot ID:

1.0

96319-004D Matrix: Ground Water

PW20F04B

‡: Parameter not included in NELAC Scope of Analysis.

06/04/20

Description: MW-103-052720

Preparation Analysis Dilution P. Date P. Batch A. Date A. Batch Init.

06/04/20

Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-004E Matrix: Ground Water

Units

mg/L

Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-103-052720

Q

					Prepa	ration	Α	nalysis	
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Arsenic	U LLV-	μg/L	5.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
2. Barium	450	μg/L	100	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
3. Chromium	U	μg/L	10	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
4. Copper	U	μg/L	4.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
5. Lead	5.9	μg/L	3.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
6. Manganese	U	μg/L	50	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
7. Nickel	U	μg/L	20	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
8. Selenium	U	μg/L	5.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
9. Silver	U	μg/L	0.20	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
10. Vanadium	U LLV-	μg/L	4.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
11. Zinc	U LLV+	ua/L	50	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH

Reporting Limit

0.0050

Mercury by CVAAS, Total Aliquot ID: 96319-004E Matrix: Ground Water

Method: EPA 7470A Description: MW-103-052720

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		μg/L	0.025	1.0	06/02/20	PM20F02B	06/02/20	M720F2B.	AVC

Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-004 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-103-052720

					Prepa	ration	Į.	Analysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
2. Aroclor-1221	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
3. Aroclor-1232	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
4. Aroclor-1242	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
5. Aroclor-1248	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
6. Aroclor-1254	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
7. Aroclor-1260	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT

1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 96
Page: 21
Date: 06

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Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-103-052720

Chain of Custody:

187648

Client Project Name: 1-10860

Sample No:

Collect Date:

05/27/20

Client Project No: 1-10

Ground Water Collect Time:

ne: **15:45**

Sample Comments:

Definitions: Q: Qualifie

Method: EPA 5030C/EPA 8260D

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter

Sample Matrix:

‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs)
Method: EPA 3510C/EPA 8082A

Aliquot ID:

96319-004

Matrix: Ground Water

Description: MW-103-052720

					Prepa	ration	Д	nalysis	
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

96319-004F

Matrix: Ground Water

Description: MW-103-052720

						Prepa	ration	Α	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	Y1	μg/L	50	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
‡ 2. Acrylonitrile	U	Y1	μg/L	10	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
3. Benzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
4. Bromobenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
5. Bromochloromethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
6. Bromodichloromethane	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
7. Bromoform	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
8. Bromomethane	U	Y1	μg/L	25	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
9.2-Butanone	U	Y1	μg/L	25	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
10. n-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
11. sec-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
12. tert-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
13. Carbon Disulfide	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
14. Carbon Tetrachloride	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
15. Chlorobenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
16. Chloroethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
17. Chloroform	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
18. Chloromethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
19. 2-Chlorotoluene	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
21. Dibromochloromethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
22. Dibromomethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
23. 1,2-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
24. 1,3-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
25. 1,4-Dichlorobenzene	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
26. Dichlorodifluoromethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
27.1,1-Dichloroethane	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
28. 1,2-Dichloroethane	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
29.1,1-Dichloroethene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368 F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

RSN: 96319-200619094841



Order: 96319 Page: 22 of 100 Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-103-052720 Chain of Custody:

187648

Client Project Name:

1-10860

Sample No:

Sample Matrix:

Collect Date:

05/27/20

15:45

Client Project No:

Ground Water Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by Method: EPA 5030C/EPA 8260D	/ GC/MS			•	uot ID: cription:	96319-004F MW-103-052720	Matrix: G	round Water		
						Prepai	ation	Aı	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
31. trans-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
32.1,2-Dichloropropane	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
33. cis-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
34. trans-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
35. Ethylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
36. Ethylene Dibromide	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
37.2-Hexanone	U	Y1	μg/L	50	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
38. Isopropylbenzene	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
39.4-Methyl-2-pentanone	U	Y1	μg/L	50	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
40. Methylene Chloride	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
‡ 41.2-Methylnaphthalene	U	V+	μg/L	25	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
42. MTBE	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
43. Naphthalene	18	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
44. n-Propylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
45. Styrene	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
46.1,1,1,2-Tetrachloroethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
47.1,1,2,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
48. Tetrachloroethene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
49. Toluene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
50.1,2,4-Trichlorobenzene	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
51.1,1,1-Trichloroethane	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
‡ 52.1,1,2-Trichloroethane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
53. Trichloroethene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
54. Trichlorofluoromethane	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
55. 1,2,3-Trichloropropane	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
‡ 56.1,2,3-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
57. 1,2,4-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
58. 1,3,5-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
59. Vinyl Chloride	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
60. m&p-Xylene	U	Y1	μg/L	5.0	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
61. o-Xylene	U	Y1	μg/L	2.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
‡ 62. Xylenes	U	Y1	μg/L	7.5	5.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM



Order: 96319 Page: 23 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-103-052720

Ground Water

Chain of Custody:

187648

Client Project Name: 1-10860

Sample No:

Collect Date:

05/27/20 15:45

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	96319-004	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-103-052720				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
3. Aniline	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
4. Anthracene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
15.4-Bromophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
‡ 18. Carbazole	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
19. 4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
20. 2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
22.4-Chlorophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
23. Chrysene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
28. 2,4-Dimethylphenol	26	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
30. 2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
32. 2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
34. Fluorene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
35. Hexachlorobenzene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP



Order: 96319 24 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-103-052720 Chain of Custody:

187648

Client Project Name:

Collect Date:

05/27/20

Client Project No:

1-10860 1-10860 Sample No: Sample Matrix:

Ground Water Collect Time:

15:45

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	96319-004	Matrix: G	Ground Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-103-052720				
Davamatav(a)	Dogult	Q	Lleite	Deporting Limit	Dilution	Prepara			nalysis A Batab	Init
Parameter(s)	Result		Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
40. Isophorone	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
42.2-Methylnaphthalene	15	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
‡ 44.3&4-Methylphenol	U	G+	μg/L	10	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
45. Naphthalene	19	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
47.3-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
58. Phenanthrene	4.4	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
59. Phenol	5.7	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
60. Pyrene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
61. Pyridine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
64. 2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
pH, Electrometric				Aliq	uot ID:	96319-004B	Matrix: G	Fround Water		
Method: EPA 9040C				Des	cription:	MW-103-052720				
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

12.4 Н

> T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

NA

NA

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

-1.00

1. pH

06/03/20 20:40 WD20F03A JMK



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-004

Order: 96319 Page: 25 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: MW-103-052720 Chain of Custody: 187648 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/27/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:45 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-004B Matrix: Ground Water Method: EPA 9056A Description: MW-103-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 24000 μg/L 10000 1.0 06/05/20 06/05/20 Residue, Filterable (TDS) Aliquot ID: 96319-004A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-103-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 1600000 1.3 06/03/20 06/04/20 WH20F03A JMK μg/L Aliquot ID: 96319-004C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-103-052720 Preparation Analysis

Reporting Limit

10

Dilution

1.0

P. Date

06/02/20

P. Batch

PW20F02A

A. Date

06/02/20

A. Batch

WU20F02A VO

Init.

Result

2800

Q

Units

μg/L

RSN: 96319-200619094841



Order: Page: Date:

96319 26 of 100 06/19/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-104-052720 Chain of Custody:

187648

1-10860 Client Project Name:

Sample No:

Collect Date:

05/27/20

Client Project No:

1-10860

Sample Matrix: **Ground Water**

Collect Time:

15:55

Sample Comments:

Definitions:

Cyanide, Free (without distillation)

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 96319-005D Matrix: Ground Water

Method: ASTM D7237-10

Description: MW-104-052720

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20F04A AMW 1. Cyanide, Free 14 mg/L 0.50 100 06/04/20 PW20F04B 06/04/20

Trace Elements by ICP/MS, Total Recoverable Method: EPA 3005A (Total Recoverable)/EPA 6020A Aliquot ID:

96319-005E

Matrix: Ground Water

Description: MW-104-052720

	· · · · · /								
					Preparation		Analysis		
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Arsenic	9.2 LLV-	μg/L	5.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLŀ
2. Barium	U	μg/L	100	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
3. Chromium	U	μg/L	10	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLF
4. Copper	U	μg/L	4.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLI
5. Lead	U	μg/L	3.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLŀ
6. Manganese	U	μg/L	50	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLI
7. Nickel	U	μg/L	20	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLI
8. Selenium	U	μg/L	5.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JL
9. Silver	0.36	μg/L	0.20	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLŀ
10. Vanadium	4.6 LLV-	μg/L	4.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JL
11. Zinc	U	μg/L	50	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLŀ

Mercury by CVAAS, Total Aliquot ID: 96319-005E Matrix: Ground Water Method: EPA 7470A Description: MW-104-052720

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury U μg/L 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC

Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-005 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-104-052720

Parameter(s)			Q Units	Reporting Limit	Dilution	Preparation		Analysis		
	Result	Q				P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
2. Aroclor-1221	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
3. Aroclor-1232	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
4. Aroclor-1242	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
5. Aroclor-1248	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
6. Aroclor-1254	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
7. Aroclor-1260	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT

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T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: Page: Date:

96319 27 of 100 06/19/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-104-052720

Ground Water

Chain of Custody:

187648

1-10860 Client Project Name:

Sample No:

Collect Date:

05/27/20

Client Project No: 1-10860 Sample Matrix:

Collect Time:

15:55

Sample Comments:

Definitions:

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

96319-005 Aliquot ID: Description: MW-104-052720

Matrix: Ground Water

					Preparation		Analysis		
Parameter(s)	Result (Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-005F Matrix: Ground Water Method: EPA 5030C/EPA 8260D Description: MW-104-052720

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	50	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
‡ 2. Acrylonitrile	U		μg/L	20	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
3. Benzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
4. Bromobenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
5. Bromochloromethane	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
6. Bromodichloromethane	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
7. Bromoform	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
8. Bromomethane	U		μg/L	50	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
9.2-Butanone	U		μg/L	50	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
10. n-Butylbenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
11. sec-Butylbenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
12. tert-Butylbenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
13. Carbon Disulfide	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
14. Carbon Tetrachloride	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
15. Chlorobenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
16. Chloroethane	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
17. Chloroform	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
18. Chloromethane	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
19.2-Chlorotoluene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
21. Dibromochloromethane	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
22. Dibromomethane	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
23.1,2-Dichlorobenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
24.1,3-Dichlorobenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
25. 1,4-Dichlorobenzene	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
26. Dichlorodifluoromethane	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
27.1,1-Dichloroethane	27		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
28.1,2-Dichloroethane	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN
29. 1,1-Dichloroethene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLN

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F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: 96319 Page: 28 of 100 Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-104-052720 Chain of Custody:

187648

1-10860 Client Project Name:

Sample No:

Collect Date:

05/27/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Ground Water

Collect Time:

15:55

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-005F **Matrix: Ground Water** Method: EPA 5030C/EPA 8260D Description: MW-104-052720

Sample Matrix:

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
31. trans-1,2-Dichloroethene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
32.1,2-Dichloropropane	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
33. cis-1,3-Dichloropropene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
34. trans-1,3-Dichloropropene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
35. Ethylbenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
36. Ethylene Dibromide	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
37.2-Hexanone	U	V+	μg/L	50	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
38. Isopropylbenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
39. 4-Methyl-2-pentanone	U		μg/L	50	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
40. Methylene Chloride	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
‡ 41.2-Methylnaphthalene	U	V+	μg/L	50	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
42. MTBE	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
43. Naphthalene	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
44. n-Propylbenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
45. Styrene	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
46. 1,1,1,2-Tetrachloroethane	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
47.1,1,2,2-Tetrachloroethane	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
48. Tetrachloroethene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
49. Toluene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
50.1,2,4-Trichlorobenzene	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
51.1,1,1-Trichloroethane	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
‡ 52.1,1,2-Trichloroethane	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
53. Trichloroethene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
54. Trichlorofluoromethane	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
55. 1,2,3-Trichloropropane	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
‡ 56.1,2,3-Trimethylbenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
57. 1,2,4-Trimethylbenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
58. 1,3,5-Trimethylbenzene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
59. Vinyl Chloride	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
60. m&p-Xylene	U		μg/L	10	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
61. o-Xylene	U		μg/L	5.0	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
‡ 62. Xylenes	U		μg/L	15	10	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM

DCSID: G-610.19 (10/01/19)



Order: 96319 29 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-104-052720 Chain of Custody:

187648

Client Project Name: 1-10860

Sample No:

Collect Date:

05/27/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Ground Water

‡: Parameter not included in NELAC Scope of Analysis.

Description: MW-104-052720

Collect Time:

15:55

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 96319-005 **Matrix: Ground Water** Method: EPA 3510C/EPA 8270E

NA: Not Applicable

Sample Matrix:

						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Acenaphthene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
2. Acenaphthylene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
3. Aniline	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
4. Anthracene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
‡ 5. Azobenzene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
6. Benzo(a)anthracene	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
7. Benzo(a)pyrene	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
8. Benzo(b)fluoranthene	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
9. Benzo(ghi)perylene	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
10. Benzo(k)fluoranthene	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
11. Benzyl Alcohol	U	Y1	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
13. Bis(2-chloroethyl)ether	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
14. Bis(2-ethylhexyl)phthalate	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
15.4-Bromophenyl Phenylether	U	V+	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
16. Butyl Benzyl Phthalate	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
17. Di-n-butyl Phthalate	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
‡ 18. Carbazole	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
19. 4-Chloro-3-methylphenol	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
20.2-Chloronaphthalene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
21.2-Chlorophenol	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
23. Chrysene	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
24. Dibenzo(a,h)anthracene	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
25. Dibenzofuran	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
26.2,4-Dichlorophenol	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
27. Diethyl Phthalate	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
28. 2,4-Dimethylphenol	340		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
29. Dimethyl Phthalate	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
30.2,4-Dinitrophenol	U	Y1	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
31.2,4-Dinitrotoluene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
32.2,6-Dinitrotoluene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
33. Fluoranthene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
34. Fluorene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
35. Hexachlorobenzene	U	V+	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
36. Hexachlorobutadiene	U	V+	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF
37. Hexachlorocyclopentadiene	U	Y1	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F GJF

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Order: 96319 30 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-104-052720 Chain of Custody:

187648

Client Project Name:

1-10860

Collect Date:

05/27/20

Client Project No:

Sample No:

Ground Water Collect Time: 15:55

Sample Comments:

Definitions:

Sample Matrix:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	96319-005	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-104-052720				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
38. Hexachloroethane	U	Y1	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJI
39. Indeno(1,2,3-cd)pyrene	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJI
40. Isophorone	U	Y1	μg/L	10	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJI
41.2-Methyl-4,6-dinitrophenol	U	Y1	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJI
42. 2-Methylnaphthalene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJI
43. 2-Methylphenol	8.0		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
‡ 44.3&4-Methylphenol	95		μg/L	10	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
45. Naphthalene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
46. 2-Nitroaniline	U		μg/L	20	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
47. 3-Nitroaniline	U		μg/L	20	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
48. 4-Nitroaniline	U		μg/L	20	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
49. Nitrobenzene	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
50. 2-Nitrophenol	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJI
51.4-Nitrophenol	U	V-	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
52. N-Nitrosodimethylamine	U	Y1	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
54. N-Nitrosodiphenylamine	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
55. Di-n-octyl Phthalate	U	Y1	μg/L	10	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
57. Pentachlorophenol	U	Y1	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
58. Phenanthrene	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
59. Phenol	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
60. Pyrene	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
61. Pyridine	U	Y1	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
62. 1,2,4-Trichlorobenzene	U	Y1	μg/L	25	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJF
63. 2,4,5-Trichlorophenol	U		μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJI
64.2,4,6-Trichlorophenol	U	Y1	μg/L	5.0	5.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJI
pH, Electrometric				Aliq	uot ID:	96319-005B	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-104-052720				
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

10.9

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1.0

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

06/03/20 20:55 WD20F03A JMK

RSN: 96319-200619094841

NA

NA

-1.00

1. pH



Order: 96319 Page: 31 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: MW-104-052720 Chain of Custody: 187648 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/27/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:55 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-005B Matrix: Ground Water Method: EPA 9056A Description: MW-104-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F06A CMB 1. Chloride 220000 μg/L 10000 10 06/06/20 06/06/20 Residue, Filterable (TDS) Aliquot ID: 96319-005A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-104-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 800000 1.3 06/03/20 06/04/20 WH20F03A JMK μg/L

Reporting Limit

50

Aliquot ID:

Dilution

5.0

96319-005C

P. Date

06/02/20

Preparation

P. Batch

PW20F02A

Description: MW-104-052720

Result

19000

Q

Units

μg/L

RSN: 96319-200619094841

Matrix: Ground Water

A. Date

06/02/20

Analysis

A. Batch

WU20F02A VO

Init.

Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011

Parameter(s)

1. Ammonia-N



1914 Holloway Drive

11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Holt, MI 48842

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-006

Order: 96319 Page: 32 of 100 Date: 06/19/20

Applied Science & Technology, 187648 Client Identification: Sample Description: MW-107s-052720 Chain of Custody: Inc. - Brighton 1-10860 05/27/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: 17:06 Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-006D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-107s-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 4.9 mg/L 0.25 50 06/04/20 PW20F04B 06/04/20 WQ20F04A AMW Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-006E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-107s-052720 Preparation Analysis Q Units Reporting Limit Dilution Parameter(s) Result P. Date P. Batch A. Date A. Batch Init. U LLV-5.0 PT20F04A T420F04B JLH 1. Arsenic μg/L 10 06/04/20 06/04/20 2. Barium U 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium U μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper U 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L U 5. Lead 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel U 20 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 8. Selenium μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver U μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B 4.1 LLV-10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 U T420F04B JLH 11. Zinc μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-006E Matrix: Ground Water Method: EPA 7470A Description: MW-107s-052720 Preparation Analysis Q Units P. Date A. Date Parameter(s) Result Reporting Limit Dilution P. Batch A. Batch Init. 1. Mercury 0.049 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC μg/L Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-006 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-107s-052720 Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT μg/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT

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T: (231) 775-8368



Order: 96
Page: 33
Date: 06

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Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-107s-052720

Chain of Custody:

187648

Client Project Name: 1-10860

Sample No:

Collect Date:

Matrix: Ground Water

05/27/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Polychlorinated Biphenyls (PCBs)

Sample Matrix:

Ground Water Colle

96319-006

‡: Parameter not included in NELAC Scope of Analysis.

Collect Time: 17:06

NA: Not Applicable

Method: EPA 3510C/EPA 8082A Description: MW-107s-052720

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. SF20F04C TKT 8. Aroclor-1262 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 U 9. Aroclor-1268 $\mu g/L$ 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT

Aliquot ID:

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-006F Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-107s-052720

						Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
3. Benzene	1.4		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
4. Bromobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
5. Bromochloromethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
6. Bromodichloromethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
7. Bromoform	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
8. Bromomethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
9.2-Butanone	U		μg/L	25	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
10. n-Butylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
11. sec-Butylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
12. tert-Butylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
13. Carbon Disulfide	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
15. Chlorobenzene	1.4		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
16. Chloroethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
17. Chloroform	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
18. Chloromethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
19. 2-Chlorotoluene	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
21. Dibromochloromethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
22. Dibromomethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
23.1,2-Dichlorobenzene	7.6		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
25. 1,4-Dichlorobenzene	1.3		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
27.1,1-Dichloroethane	3.1		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM
29. 1,1-Dichloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM

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Order: 96319 Page: 34 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-107s-052720

Chain of Custody:

Collect Date:

Collect Time:

187648

Client Project Name: 1-10860

-10860

Sample No:

Ground Water

05/27/20 17:06

Client Project No: 1-10860

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by GC/MS	Aliquot ID:	96319-006F	Matrix: Ground Water
Method: EPA 5030C/EPA 8260D	Description:	MW-107s-052720	

						Prepa			nalysis	
arameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLI
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
32. 1,2-Dichloropropane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
35. Ethylbenzene	1.1		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
36. Ethylene Dibromide	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
37.2-Hexanone	U	V+	μg/L	50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
38. Isopropylbenzene	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
39. 4-Methyl-2-pentanone	U		μg/L	50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
40. Methylene Chloride	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
41.2-Methylnaphthalene	11	V+	μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
42. MTBE	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	Jl
43. Naphthalene	120		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
44. n-Propylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
45. Styrene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
46. 1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
47.1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
48. Tetrachloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
49. Toluene	3.2		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
50. 1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
52. 1,1,2-Trichloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
53. Trichloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JL
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	Jl
55. 1,2,3-Trichloropropane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	Jl
56. 1,2,3-Trimethylbenzene	5.4		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	Jl
57. 1,2,4-Trimethylbenzene	4.3		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
58. 1,3,5-Trimethylbenzene	1.5		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
59. Vinyl Chloride	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
60. m&p-Xylene	3.2		μg/L	2.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI
61. o-Xylene	2.9		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J
62. Xylenes	6.0		μg/L	3.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J



Order: 96319 35 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107s-052720

Ground Water

Chain of Custody:

187648

1-10860 Client Project Name:

Sample No:

Collect Date: Collect Time: 05/27/20

17:06

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Parameter(s) 1. Acenaphthene 2. Acenaphthylene	Result U U U U U	Q G+ G+	Units μg/L	Reporting Limit	Dilution	Prepara	ation	Ar	nalysis	
1. Acenaphthene	U U U	G+ G+		Reporting Limit	Dilution					
•	U	G+	μg/L			P. Date	P. Batch	A. Date	A. Batch	Init.
2. Acenaphthylene	U			5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJP
		G±	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
3. Aniline	U	СΤ	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
4. Anthracene		G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
15. 4-Bromophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
‡ 18. Carbazole	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
19.4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
20. 2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
22.4-Chlorophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
23. Chrysene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
28. 2,4-Dimethylphenol	59	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
30. 2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
32. 2.6-Dinitrotoluene	U	G+	μg/L μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
33. Fluoranthene	U	G+	μg/L μg/L	1.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
34. Fluorene	U	G+	μg/L μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
35. Hexachlorobenzene	U	V+		5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	
	U	V+ V+	μg/L	5.0		06/02/20	PS20F02I	06/03/20	SN20F03D SN20F03D	
36. Hexachlorobutadiene 37. Hexachlorocyclopentadiene		V+ G+	μg/L μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D SN20F03D	



Order: Page: Date:

96319 36 of 100 06/19/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-107s-052720

Ground Water

Chain of Custody:

187648

Client Project Name:

1-10860

Sample No:

Sample Matrix:

Collect Date: Collect Time: 05/27/20

17:06

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

1-10860

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	96319-006	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-107s-052720				
						Prepara	tion	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJ
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
40. Isophorone	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
42. 2-Methylnaphthalene	6.7	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
‡ 44.3&4-Methylphenol	30	G+	μg/L	10	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
45. Naphthalene	71	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
47. 3-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
58. Phenanthrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
59. Phenol	9.3	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
60. Pyrene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
61. Pyridine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJF
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
64.2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/03/20	SN20F03D	GJI
pH, Electrometric				Aliq	uot ID:	96319-006B	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-107s-052720				
						Prepara	tion	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

1. pH

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

12.1 Н

> T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

-1.00

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

06/03/20 20:47 WD20F03A JMK

NA

NA



1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-006

Order: 96319 Page: 37 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: MW-107s-052720 Chain of Custody: 187648 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/27/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 17:06 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-006B Matrix: Ground Water Method: EPA 9056A Description: MW-107s-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 21000 μg/L 10000 1.0 06/05/20 06/05/20 Residue, Filterable (TDS) Aliquot ID: 96319-006A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-107s-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 810000 1.3 06/03/20 06/04/20 WH20F03A JMK μg/L Aliquot ID: 96319-006C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-107s-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

10

1.0

06/02/20

PW20F02A

06/02/20

WU20F02A VO

8400

μg/L



Order: 96319 Page: 38 of 100 Date: 06/19/20

Applied Science & Technology, MW-107D-052720 187648 Client Identification: Sample Description: Chain of Custody: Inc. - Brighton 1-10860 05/27/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: 17:05 Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-007D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-107D-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 1.3 mg/L 0.050 10 06/04/20 PW20F04B 06/04/20 WQ20F04A AMW Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-007E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-107D-052720 Preparation Analysis Result Q Units Reporting Limit Dilution Parameter(s) P. Date P. Batch A. Date A. Batch Init. U LLV-5.0 PT20F04A T420F04B JLH 1. Arsenic μg/L 10 06/04/20 06/04/20 2. Barium U 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium U μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper U 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L U 5. Lead 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel U 20 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 8. Selenium μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver U μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B U LLV-10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 U T420F04B JLH 11. Zinc μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-007E Matrix: Ground Water Method: EPA 7470A Description: MW-107D-052720 Preparation Analysis Result Q Units P. Date A. Date Parameter(s) Reporting Limit Dilution P. Batch A. Batch Init. 1. Mercury U μg/L 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-007 Matrix: Ground Water Description: MW-107D-052720 Method: EPA 3510C/EPA 8082A Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT ua/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: Page: Date:

96319 39 of 100 06/19/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

MW-107D-052720 Sample Description:

Chain of Custody:

187648

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date:

05/27/20

Client Project No:

1-10860

Ground Water

Collect Time:

17:05

Sample Comments:

Definitions:

Method: EPA 3510C/EPA 8082A

Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs)

Aliquot ID:

96319-007

Matrix: Ground Water

Description: MW-107D-052720

					Prepa	aration	Į.	Analysis	
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-007F Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-107D-052720

						Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
3. Benzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
4. Bromobenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
5. Bromochloromethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
6. Bromodichloromethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
7. Bromoform	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
8. Bromomethane	U	L-	μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
9.2-Butanone	U		μg/L	25	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
10. n-Butylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
11. sec-Butylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
12. tert-Butylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
13. Carbon Disulfide	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
15. Chlorobenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
16. Chloroethane	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
17. Chloroform	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
18. Chloromethane	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
19. 2-Chlorotoluene	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
21. Dibromochloromethane	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
22. Dibromomethane	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
23. 1,2-Dichlorobenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
29. 1,1-Dichloroethene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 96319 40 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

MW-107D-052720 Sample Description:

Chain of Custody:

187648

Client Project Name:

1-10860

Sample No:

Collect Date:

05/27/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time: 17:05

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 96319-007F **Matrix: Ground Water**

Method: EPA 5030C/EPA 8260D Description: MW-107D-052720

						Prepa			nalysis	
arameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLI
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLI
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLI
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
35. Ethylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
36. Ethylene Dibromide	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
37.2-Hexanone	U		μg/L	50	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
38. Isopropylbenzene	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
39. 4-Methyl-2-pentanone	U		μg/L	50	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
40. Methylene Chloride	U	V-	μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
41.2-Methylnaphthalene	U	V+	μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
42. MTBE	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
43. Naphthalene	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
44. n-Propylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
45. Styrene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
46. 1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
47. 1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
48. Tetrachloroethene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
49. Toluene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
50. 1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
52. 1,1,2-Trichloroethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
53. Trichloroethene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
55. 1,2,3-Trichloropropane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
56. 1,2,3-Trimethylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
57. 1,2,4-Trimethylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
58. 1,3,5-Trimethylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
59. Vinyl Chloride	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
60. m&p-Xylene	U		μg/L	2.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
61. o-Xylene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
62. Xylenes	U		μg/L	3.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl



Ground Water

Order: 96319 Page: 41 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-107D-052720

Chain of Custody:

187648

Client Project Name: 1

1-10860

Sample No:

Sample Matrix:

Collect Date:

05/27/20

Client Project No:

ou campi

Collect Time:

17:05

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	96319-007	Matrix: G	round Water
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-107D-052720)	
						Prepar	ation	Ar
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date
		_						

						Prepa	ration	Α	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
3. Aniline	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
4. Anthracene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
15. 4-Bromophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
‡ 18. Carbazole	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
19.4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
20.2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
22.4-Chlorophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
23. Chrysene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
28. 2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
30.2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
32. 2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
34. Fluorene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
35. Hexachlorobenzene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 96319 42 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107D-052720

Ground Water

Chain of Custody:

187648

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date: Collect Time: 05/27/20

17:05

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: **Matrix: Ground Water** 96319-007 Method: EPA 3510C/EPA 8270E Description: MW-107D-052720

tilou. LFA 33100/LFA 0270L	Description: WW-107D-032720									
						Prepa	ration	Д	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJI
40. Isophorone	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
42. 2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
‡ 44.3&4-Methylphenol	U	G+	μg/L	10	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
45. Naphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
47. 3-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
58. Phenanthrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
59. Phenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
60. Pyrene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
61. Pyridine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	G۵
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ
64. 2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJ

pH, Electrometric Aliquot ID: 96319-007B Matrix: Ground Water

Method: EPA 9040C Description: MW-107D-052720

						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. pH	8.06	Н	pH Units	-1.00	1.0	NA	NA	06/03/20 20:51	WD20F03A	JMK



1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-007

Order: 96319 Page: 43 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: MW-107D-052720 Chain of Custody: 187648 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/27/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 17:05 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-007B Matrix: Ground Water Method: EPA 9056A Description: MW-107D-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 24000 μg/L 10000 1.0 06/05/20 06/05/20 Residue, Filterable (TDS) Aliquot ID: 96319-007A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-107D-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 350000 1.3 06/03/20 06/04/20 WH20F03A JMK μg/L Aliquot ID: 96319-007C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-107D-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

10

1.0

06/02/20

PW20F02A

06/02/20

WU20F02A VO

480

μg/L

RSN: 96319-200619094841



Order: Page: Date:

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Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: TMW-26-052720 Chain of Custody:

187648

Client Project Name:

1-10860

Sample No:

Collect Date:

05/27/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time: 11:15

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Cyanide, Free (without distillation) Aliquot ID: 96319-008D Matrix: Ground Water

Method: ASTM D7237-10 Description: TMW-26-052720

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.0066 mg/L 0.0050 1.0 06/04/20 PW20F04B 06/04/20 WQ20F04A VO

Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-008E Matrix: Ground Water

Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: TMW-26-052720

					Prepa	ration	Α	nalysis	
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Arsenic	U LLV-	μg/L	5.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLŀ
2. Barium	U	μg/L	100	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLŀ
3. Chromium	22	μg/L	10	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLI
4. Copper	11	μg/L	4.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLI
5. Lead	U	μg/L	3.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLI
6. Manganese	U	μg/L	50	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLI
7. Nickel	U	μg/L	20	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLI
8. Selenium	U	μg/L	5.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLI
9. Silver	U	μg/L	0.20	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLI
10. Vanadium	9.1 LLV-	μg/L	4.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JL
11 Zinc	П	ua/l	50	10	06/04/20	PT20F04A	06/04/20	T420F04B	.11

Mercury by CVAAS, Total Aliquot ID: 96319-008E Matrix: Ground Water

Method: EPA 7470A Description: TMW-26-052720

Preparation Analysis Q Units Reporting Limit Dilution P. Date A. Date Parameter(s) Result P. Batch A. Batch Init. 1. Mercury 0.031 μg/L 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC

Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-008 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: TMW-26-052720

Preparation Analysis Result Q Units Reporting Limit P. Batch A. Batch Init. Parameter(s) Dilution P. Date A. Date 1. Aroclor-1016 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT μg/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT

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Order: 96
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Date: 06

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Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: TMW-26-052720

Chain of Custody:

187648

Client Project Name:

1-10860

Sample No:
Sample Matrix:

Collect Date:

05/27/20

Client Project No:

Definitions:

Sample Comments:

Q: Qualifier (see definitions at end of report)

Ground Water Collect

Collect Time: 11:15

Polychlorinated Biphenyls (PCBs)

Aliquot ID: 96319-008 Matrix: Ground Water

Method: EPA 3510C/EPA 8082A

Description: TMW-26-052720

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix. Ground Water

					Prepa	aration	ļ	Analysis	
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 96319-008F Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: TMW-26-052720

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
3. Benzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
4. Bromobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
5. Bromochloromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
6. Bromodichloromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
7. Bromoform	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
8. Bromomethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
9.2-Butanone	U		μg/L	25	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
10. n-Butylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
11. sec-Butylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
12. tert-Butylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
13. Carbon Disulfide	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
15. Chlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
16. Chloroethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
17. Chloroform	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
18. Chloromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
19. 2-Chlorotoluene	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
21. Dibromochloromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
22. Dibromomethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
23. 1,2-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
24. 1,3-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
28. 1,2-Dichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM

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Order: 96319 Page: 46 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: TMW-26-052720

Chain of Custody:

187648

Client Project Name: 1-

1-10860

Sample No:
Sample Matrix:

Collect Date:

05/27/20

Client Project No:

--- F--

Ground Water Collect Time:

ollect Time: 11:15

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by	GC/MS			quot ID:	96319-008F		iround Water		
Method: EPA 5030C/EPA 8260D			De	scription:	TMW-26-052720				
Parameter(s)	Result	Q Units	s Reporting Limit	Dilution		aration P. Batch	Ar A. Date	nalysis A. Batch	Init.
30. cis-1,2-Dichloroethene	U			1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
31. trans-1,2-Dichloroethene	U	μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A VB20F03A	
32. 1,2-Dichloropropane	U	μg/L		1.0	06/03/20	VB20F03A VB20F03A	06/03/20	VB20F03A VB20F03A	
33. cis-1,3-Dichloropropene	U	μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A VB20F03A	
	U	μg/L		1.0	06/03/20	VB20F03A VB20F03A	06/03/20	VB20F03A VB20F03A	
34. trans-1,3-Dichloropropene 35. Ethylbenzene	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A VB20F03A	
36. Ethylene Dibromide	U			1.0	06/03/20	VB20F03A VB20F03A	06/03/20	VB20F03A VB20F03A	
37. 2-Hexanone	U	μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A VB20F03A	
38. Isopropylbenzene	U	μg/L		1.0	06/03/20	VB20F03A VB20F03A	06/03/20	VB20F03A VB20F03A	
39. 4-Methyl-2-pentanone	U	μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A VB20F03A	
40. Methylene Chloride	U	μg/L		1.0	06/03/20	VB20F03A VB20F03A	06/03/20	VB20F03A VB20F03A	
‡ 41.2-Methylnaphthalene	U	μg/L V+ μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
42. MTBE	U	1.0		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
43. Naphthalene	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
44. n-Propylbenzene	U			1.0	06/03/20	VB20F03A VB20F03A	06/03/20	VB20F03A VB20F03A	
45. Styrene	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
46. 1,1,1,2-Tetrachloroethane	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
47. 1,1,2,2-Tetrachloroethane	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
48. Tetrachloroethene	U	μg/L μg/L		1.0	06/03/20	VB20F03A VB20F03A	06/03/20	VB20F03A VB20F03A	
49. Toluene	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
50. 1,2,4-Trichlorobenzene	U			1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
51. 1,1,1-Trichloroethane	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
52. 1,1,2-Trichloroethane	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
53. Trichloroethene	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
54. Trichlorofluoromethane	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
55. 1,2,3-Trichloropropane	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
56. 1,2,3-Trimethylbenzene	U	μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
57. 1,2,4-Trimethylbenzene	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
58. 1,3,5-Trimethylbenzene	U	μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
59. Vinyl Chloride	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
60. m&p-Xylene	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
61. o-Xylene	U	μg/L μg/L		1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
‡ 62. Xylenes	U			1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	
+ UL. Aylelies	U	μg/L	. 3.0	1.0	00/03/20	VDZUFUSA	00/03/20	VDZUFUSA	JLIVI



Order: 96319 Page: 47 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

Base/Neutral/Acid Semivolatiles by GC/MS

Inc. - Brighton

Sample Description: TMW-26-052720

Aliquot ID:

Chain of Custody:

187648

Client Project Name: 1-10860

Sample No:

Collect Date:

Matrix: Ground Water

05/27/20

11:15

Client Project No: 1

1-10860 Sample

Ground Water Collect Time:

96319-008

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Method: EPA 3510C/EPA 8270E				-	uol ID: crintion:	TMW-26-052720	Watiix. C	iround water		
					opo	Prepara	ation	Δι	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
3. Aniline	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
4. Anthracene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
15.4-Bromophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
‡ 18. Carbazole	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
19.4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
20.2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
22.4-Chlorophenyl Phenylether	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
23. Chrysene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
28.2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
30.2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
32.2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
34. Fluorene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
35. Hexachlorobenzene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 96319 48 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: TMW-26-052720 Chain of Custody:

187648

11:15

Client Project Name:

1-10860

Sample No:

Sample Matrix:

Collect Date:

05/27/20

Client Project No:

Ground Water Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	96319-008 TMW-26-052720	Matrix: G	iround Water		
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
40. Isophorone	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
42. 2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
‡ 44.3&4-Methylphenol	U	G+	μg/L	10	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
45. Naphthalene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
47.3-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
56.2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
58. Phenanthrene	U	G+	μg/L	2.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
59. Phenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
60. Pyrene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
61. Pyridine	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
64. 2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/02/20	PS20F02I	06/04/20	SN20F03F	GJP
pH, Electrometric				Aliq	uot ID:	96319-008B	Matrix: G	Fround Water		
Method: EPA 9040C				Des	cription:	TMW-26-052720				
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

1. pH

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

pH Units

Н

12.0

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

NA

NA

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

06/03/20 20:46 WD20F03A JMK

-1.00



Order: 96319 Page: 49 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: TMW-26-052720 Chain of Custody: 187648 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/27/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 11:15 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-008B Matrix: Ground Water Method: EPA 9056A Description: TMW-26-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride U μg/L 10000 1.0 06/05/20 06/05/20 Residue, Filterable (TDS) Aliquot ID: 96319-008A Matrix: Ground Water Method: SM 2540 C-2011 Description: TMW-26-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 560000 1.3 06/03/20 06/04/20 WH20F03A JMK μg/L Aliquot ID: 96319-008C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: TMW-26-052720 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N 2100 10 1.0 06/02/20 PW20F02A 06/02/20 WU20F02A VO μg/L

RSN: 96319-200619094841



11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-009

Order: 96319 Page: 50 of 100 Date: 06/19/20

Applied Science & Technology, 184649 Client Identification: Sample Description: MW-105-052820 Chain of Custody: Inc. - Brighton 1-10860 05/28/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: 08:50 Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-009D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-105-052820 Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.097 mg/L 0.0050 1.0 06/04/20 PW20F04B 06/04/20 WQ20F04A VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-009E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-105-052820 Preparation Analysis Result Q Units Reporting Limit Dilution Parameter(s) P. Date P. Batch A. Date A. Batch Init. U LLV-5.0 PT20F04A T420F04B JLH 1. Arsenic μg/L 10 06/04/20 06/04/20 2. Barium U 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium U μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper U 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L U 5. Lead 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel U 20 10 06/04/20 PT20F04A 06/04/20 T420F04B μg/L U 8. Selenium μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver U μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B 30 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 U T420F04B JLH 11. Zinc μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-009E Matrix: Ground Water Method: EPA 7470A Description: MW-105-052820 Preparation Analysis Result Q Units P. Date A. Date Parameter(s) Reporting Limit Dilution P. Batch A. Batch Init. 1. Mercury U μg/L 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-009 Matrix: Ground Water Description: MW-105-052820 Method: EPA 3510C/EPA 8082A Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT ua/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

T: (810) 220-3300

T: (231) 775-8368



Order: 96319
Page: 51 of 100
Date: 06/19/20

Client Identification: Applied Science & Technology, Sample Description: MW-105-052820 Chain of Custody: 184649

Inc. - Brighton

Client Project Name: 1-10860 Sample No: Collect Date: 05/28/20

Client Project No: 1-10860 Sample Matrix: Ground Water Collect Time: 08:50

Sample Comments:

9. Aroclor-1268

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs)
Aliquot ID: 96319-009 Matrix: Ground Water

Method: EPA 3510C/EPA 8082A
Description: MW-105-052820

Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 8. Aroclor-1262 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT

0.20

1.0

06/03/20

PS20F03E

Preparation

06/04/20

SF20F04C TKT

Analysis

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 96319-009F

Matrix: Ground Water

Description: MW-105-052820

μg/L

U

Result Ω I Inits Reporting Limit Dilution P. Date P. Batch A. Date Parameter(s) A. Batch Init. U 1. Acetone 50 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μq/L 2. Acrylonitrile U μg/L 2.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 3. Benzene U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μq/L 4. Bromobenzene U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L U 1.0 1.0 VB20F03A VB20F03A JLM 5. Bromochloromethane μg/L 06/03/20 06/03/20 U 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 6. Bromodichloromethane μg/L 1.0 1.0 7. Bromoform U μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 8. Bromomethane U μg/L 5.0 1.0 06/03/20 VB20F03A 06/03/20 U 25 9.2-Butanone μg/L 1.0 06/03/20 VB20F03A 06/03/20

VB20F03A JLM VB20F03A JLM 10. n-Butylbenzene U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μq/L U 11. sec-Butylbenzene μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 12. tert-Butylbenzene U μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM U 06/03/20 13. Carbon Disulfide μg/L 5.0 1.0 06/03/20 VB20F03A VB20F03A JLM 14. Carbon Tetrachloride U 1.0 VB20F03A VB20F03A JLM μg/L 1.0 06/03/20 06/03/20 15. Chlorobenzene U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L U 5.0 1.0 VB20F03A 06/03/20 VB20F03A JLM 16. Chloroethane μg/L 06/03/20 17. Chloroform U μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM U 1.0 18. Chloromethane μg/L 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 19.2-Chlorotoluene U μg/L 5.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM ‡ 20.1,2-Dibromo-3-chloropropane (SIM) U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L 21. Dibromochloromethane U 5.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L U 1.0 22. Dibromomethane μg/L 5.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 23. 1,2-Dichlorobenzene U μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM U VB20F03A 1.0 06/03/20 06/03/20 VB20F03A JLM 24. 1.3-Dichlorobenzene μg/L 1.0 25. 1,4-Dichlorobenzene U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM ua/L U 5.0 26. Dichlorodifluoromethane μg/L 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM U 27.1,1-Dichloroethane 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JI M μg/L 28.1,2-Dichloroethane U μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM

> 1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

29.1.1-Dichloroethene

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

μg/L

U

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

06/03/20

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

06/03/20

VB20F03A JLM

VB20F03A

1.0



Order: 96319
Page: 52 of 100
Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-105-052820

Ground Water

Chain of Custody:

184649

Client Project Name: 1-1

1-10860

Collect Date:

05/28/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Collect Time: 08:50

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 96319-009F

Matrix: Ground Water

Description: MW-105-052820

Sample No:

Sample Matrix:

Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 30. cis-1,2-Dichloroethene U μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 31. trans-1.2-Dichloroethene U μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 32. 1,2-Dichloropropane U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L U 33. cis-1,3-Dichloropropene 0.50 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L 34. trans-1,3-Dichloropropene U 0.50 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L 1.0 U VB20F03A 06/03/20 VB20F03A JLM 35. Ethylbenzene μg/L 1.0 10 06/03/20 36. Ethylene Dibromide U μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 37.2-Hexanone U VB20F03A VB20F03A JLM μg/L 50 1.0 06/03/20 06/03/20 38. Isopropylbenzene U 5.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JI M ua/L U 50 VB20F03A 39. 4-Methyl-2-pentanone μg/L 1.0 06/03/20 06/03/20 VB20F03A JLM 40. Methylene Chloride U 5.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L ‡ 41.2-Methylnaphthalene U V+ μg/L 5.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 42. MTBE U 5.0 1.0 VB20F03A VB20F03A JLM μg/L 06/03/20 06/03/20 43. Naphthalene U 5.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L 44. n-Propylbenzene U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 45. Styrene μg/L 46. 1,1,1,2-Tetrachloroethane U 10 10 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A 47. 1,1,2,2-Tetrachloroethane μg/L U 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 48. Tetrachloroethene μg/L 1.0 49. Toluene U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM ua/L U 5.0 1.0 50. 1,2,4-Trichlorobenzene μg/L 06/03/20 VB20F03A 06/03/20 VB20F03A JLM U 51.1,1,1-Trichloroethane μq/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM U ‡ 52.1,1,2-Trichloroethane μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 53. Trichloroethene μq/L 54. Trichlorofluoromethane U 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L U 55. 1,2,3-Trichloropropane 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L ‡ 56.1,2,3-Trimethylbenzene U μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM U 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM 57. 1,2,4-Trimethylbenzene μg/L 1.0 58. 1,3,5-Trimethylbenzene U 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L 1.0 1.0 59. Vinyl Chloride U 1.0 1.0 VB20F03A VB20F03A JLM μg/L 06/03/20 06/03/20 U 60. m&p-Xylene μg/L 2.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM П 61. o-Xylene μg/L 1.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM ‡ 62. Xylenes U 3.0 1.0 06/03/20 VB20F03A 06/03/20 VB20F03A JLM μg/L



Order: 96319 Page: 53 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-105-052820

Chain of Custody:

184649

Client Project Name: 1

1-10860

Sample No:

Sample Matrix:

Collect Date:

05/28/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Ground Water

Collect Time: 08:50

Base/Neutral/Acid Semivolatiles by GC/MS
Aliquot ID: 96319-009 Matrix: Ground Water
Method: EPA 3510C/EPA 8270E
Description: MW-105-052820

					•	Prepa	ration	Δ	Analysis	_
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
2. Acenaphthylene	U	G+	μg/L μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
3. Aniline	U	G+	μg/L μg/L	4.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D SN20F04D	
4. Anthracene	U	G+					PS20F04A PS20F04A		SN20F04D SN20F04D	
			μg/L	5.0	1.0	06/04/20		06/04/20		
5. Azobenzene	U		μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
9. Benzo(ghi)perylene	U		μg/L	1.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
15. 4-Bromophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	C
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	C
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	C
18. Carbazole	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	C
19. 4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
20. 2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	C
22. 4-Chlorophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
23. Chrysene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
28. 2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	C
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	C
30. 2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	C
32. 2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
34. Fluorene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
35. Hexachlorobenzene	U		μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
36. Hexachlorobutadiene	U	V+	μg/L μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	
	U	V+ G+		5.0	1.0	06/04/20	PS20F04A PS20F04A	06/04/20	SN20F04D SN20F04D	
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/04/20	F3ZUFU4A	06/04/20	SINZUFU4D	(

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 96319 Page: Date:

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Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-105-052820 Chain of Custody:

184649 05/28/20

Client Project Name:

1-10860

Collect Date: Sample No:

‡: Parameter not included in NELAC Scope of Analysis.

08:50

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

Ground Water

Collect Time:

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 96319-009 **Matrix: Ground Water**

Sample Matrix:

Method: EPA 3510C/EPA 8270E Description: MW-105-052820

Wethod. Er A 33 Toc/Er A 0270E	Description. WW-103-032020									
						Prepa	ration	Д	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
40. Isophorone	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
42.2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
‡ 44.3&4-Methylphenol	U	G+	μg/L	10	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
45. Naphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
47.3-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G٠
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G٠
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
58. Phenanthrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G٠
59. Phenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
60. Pyrene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G٠
61. Pyridine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	G
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	Gu
64.2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/04/20	SN20F04D	GJ

pH, Electrometric Aliquot ID: 96319-009B Matrix: Ground Water

Method: EPA 9040C Description: MW-105-052820

						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1.pH	11.2	Н	pH Units	-1.00	1.0	NA	NA	06/03/20 21:01	WD20F03A	JMK



Method: SM 4500-NH3 G-2011

Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-009

Order: 96319 Page: 55 of 100 Date: 06/19/20

Analysis

A. Batch

WU20F02A VO

Init.

A. Date

06/02/20

Applied Science & Technology, Sample Description: MW-105-052820 Chain of Custody: 184649 Client Identification: Inc. - Brighton 1-10860 05/28/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 08:50 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-009B Matrix: Ground Water Method: EPA 9056A Description: MW-105-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride U μg/L 10000 1.0 06/05/20 06/05/20 Residue, Filterable (TDS) Aliquot ID: 96319-009A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-105-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 450000 1.3 06/03/20 06/04/20 WH20F03A JMK μg/L Aliquot ID: 96319-009C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer)

Reporting Limit

10

Result

830

Q

Units

μg/L

Description: MW-105-052820

Dilution

1.0

Preparation

P. Batch

PW20F02A

P. Date

06/02/20

RSN: 96319-200619094841



1914 Holloway Drive

11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Holt, MI 48842

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-010

Order: 96319
Page: 56 of 100
Date: 06/19/20

Applied Science & Technology, 184649 Client Identification: Sample Description: MW-106-052820 Chain of Custody: Inc. - Brighton 1-10860 05/28/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: 08:16 Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-010D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-106-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free U mg/L 0.0050 1.0 06/04/20 PW20F04B 06/04/20 WQ20F04A VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-010E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-106-052820 Preparation Analysis Q Units Reporting Limit Dilution Parameter(s) Result P. Date P. Batch A. Date A. Batch Init. U LLV-5.0 PT20F04A T420F04B JLH 1. Arsenic μg/L 10 06/04/20 06/04/20 2. Barium 180 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium 43 μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper 5.1 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L 5. Lead 6.2 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel U 20 10 06/04/20 PT20F04A 06/04/20 T420F04B μg/L U 8. Selenium μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver U μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B U LLV-10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 U T420F04B JLH 11. Zinc μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-010E Matrix: Ground Water Method: EPA 7470A Description: MW-106-052820 Preparation Analysis Result Q Units P. Date A. Date Parameter(s) Reporting Limit Dilution P. Batch A. Batch Init. 1. Mercury U μg/L 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-010 Matrix: Ground Water Description: MW-106-052820 Method: EPA 3510C/EPA 8082A Preparation Analysis Reporting Limit Parameter(s) Result Ω Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT ua/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT

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Order: Page: Date:

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Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-106-052820

Ground Water

Chain of Custody:

184649

1-10860 Client Project Name:

Sample No:

Collect Date:

05/28/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Collect Time:

08:16

Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-010 **Matrix: Ground Water**

NA: Not Applicable

Sample Matrix:

Method: EPA 3510C/EPA 8082A

Description: MW-106-052820

‡: Parameter not included in NELAC Scope of Analysis.

					Prepa	ration	A	Analysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C TKT
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C TKT

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-010F **Matrix: Ground Water**

Method: EPA 5030C/EPA 8260D Description: MW-106-052820

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
3. Benzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
4. Bromobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
5. Bromochloromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
6. Bromodichloromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
7. Bromoform	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
8. Bromomethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
9.2-Butanone	U		μg/L	25	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
10. n-Butylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
11. sec-Butylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
12. tert-Butylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
13. Carbon Disulfide	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
15. Chlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
16. Chloroethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
17. Chloroform	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLN
18. Chloromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
19. 2-Chlorotoluene	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
21. Dibromochloromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
22. Dibromomethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
23. 1,2-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
24. 1,3-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM
29. 1,1-Dichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JLM

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Order: 96319 Page: 58 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-106-052820

Chain of Custody:

184649

Client Project Name: 1-10860

O Sample No:

Collect Date:

05/28/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Ground Water

Collect Time: 08:16

Volatile Organic Compounds (VOCs) by GC/MS

Method: EPA 5030C/EPA 8260D

Description: MW-106-052820

Preparation

Sample Matrix:

						Prepa			nalysis	
arameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
35. Ethylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
36. Ethylene Dibromide	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
37. 2-Hexanone	U		μg/L	50	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
38. Isopropylbenzene	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JL
39. 4-Methyl-2-pentanone	U		μg/L	50	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JI
40. Methylene Chloride	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JI
41.2-Methylnaphthalene	U	V+	μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	JI
42. MTBE	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
43. Naphthalene	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
44. n-Propylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
45. Styrene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
46. 1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
47. 1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
48. Tetrachloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
49. Toluene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
50. 1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
52.1,1,2-Trichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
53. Trichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
55. 1,2,3-Trichloropropane	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
56. 1,2,3-Trimethylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
57. 1,2,4-Trimethylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
58. 1,3,5-Trimethylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
59. Vinyl Chloride	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
60. m&p-Xylene	U		μg/L	2.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
61. o-Xylene	U		μg/L	1.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	J
62. Xylenes	U		μg/L	3.0	1.0	06/03/20	VB20F03A	06/03/20	VB20F03A	



Order: 96319 Page: 59 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Base/Neutral/Acid Semivolatiles by GC/MS

Inc. - Brighton

Sample Description: MW-106-052820

Aliquot ID:

Chain of Custody:

184649

Client Project Name: 1

1-10860

Sample No:

Sample Matrix:

Collect Date:

Matrix: Ground Water

05/28/20

08:16

Client Project No:

Campi

Ground Water Collect Time:

96319-010

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Dascincultalization octilivolatiles by do illo				Anquot 15.						
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-106-052820				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
3. Aniline	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
4. Anthracene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
15. 4-Bromophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
‡ 18. Carbazole	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
19.4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
20.2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
22.4-Chlorophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
23. Chrysene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
28. 2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
30.2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
32. 2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
34. Fluorene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
35. Hexachlorobenzene	U	L+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP

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96319 Order: Page: Date:

60 of 100 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-106-052820 Chain of Custody:

184649

Client Project Name:

1-10860

Sample No:

Collect Date:

05/28/20

A. Batch

SN20F04D GJP SN20F04D GJP SN20F04D GJP SN20F04D GJP

SN20F04D GJP

SN20F04D GJP

Init

Client Project No: Sample Comments:

48.4-Nitroaniline

Definitions: Q: Qualifier (see definitions at end of report)

Sample Matrix:

Ground Water

Collect Time:

‡: Parameter not included in NELAC Scope of Analysis.

06/04/20

06/04/20

PS20F04A

PS20F04A

06/05/20

06/05/20

08:16

NA: Not Applicable

	Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	96319-010	Matrix: Ground Wat		
	Method: EPA 3510C/EPA 8270E				Des	cription:	MW-106-052820			
							Prepar	ation	Д	Analysis
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Ba
•	38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F
	39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F
	40. Isophorone	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F
	41 2-Methyl-4 6-dinitrophenol	П	G±	ua/l	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F

 $\mu g/L$

U G+

U G+

42.2-Methylnaphthalene U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L u G+ 5.0 1.0 43. 2-Methylphenol μg/L 06/04/20 PS20F04A 06/05/20 SN20F04D GJP ‡ 44.3&4-Methylphenol U G+ μg/L 10 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 45. Naphthalene U G+ 5.0 PS20F04A SN20F04D GJP μg/L 1.0 06/04/20 06/05/20 46.2-Nitroaniline U G+ 20 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP ua/L u 20 47.3-Nitroaniline G+ μg/L 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP

49. Nitrobenzene U G+ μg/L 3.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 50. 2-Nitrophenol U G+ 5.0 1.0 PS20F04A 06/05/20 SN20F04D GJP μg/L 06/04/20 51.4-Nitrophenol U V-20 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 52. N-Nitrosodimethylamine G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP U μg/L 53. N-Nitrosodi-n-propylamine U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L

20

1.0

54. N-Nitrosodiphenylamine U G+ 5.0 10 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L U 5.0 1.0 PS20F04A 06/05/20 SN20F04D GJP 55. Di-n-octyl Phthalate G+ μg/L 06/04/20 56. 2,2'-Oxybis(1-chloropropane) U V-5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 57. Pentachlorophenol U G+ μg/L 20 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP

2.0 58. Phenanthrene U G+ 1.0 PS20F04A μg/L 06/04/20 06/05/20 SN20F04D GJP 59. Phenol U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 60. Pyrene U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP

61. Pyridine U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 62. 1,2,4-Trichlorobenzene U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 63. 2,4,5-Trichlorophenol Ü G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L

4.0

1.0

Description: MW-106-052820

pH, Electrometric Aliquot ID: 96319-010B Matrix: Ground Water

μg/L

Preparation Analysis Result Q Units Reporting Limit P. Date P. Batch A. Date A. Batch Parameter(s) Dilution Н 06/03/20 20:37 WD20F03A JMK 12.3 -1.00 NA ΝΔ 1. pH pH Units 1.0

64.2,4,6-Trichlorophenol

Method: EPA 9040C



1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-010

Order: 96319 Page: 61 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: MW-106-052820 Chain of Custody: 184649 Client Identification: Inc. - Brighton 1-10860 05/28/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 08:16 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-010B Matrix: Ground Water Method: EPA 9056A Description: MW-106-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 37000 μg/L 10000 1.0 06/05/20 06/05/20 Residue, Filterable (TDS) Aliquot ID: 96319-010A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-106-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 1300000 1.3 06/03/20 06/04/20 WH20F03A JMK μg/L Aliquot ID: 96319-010C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-106-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

10

1.0

06/02/20

PW20F02A

06/02/20

WU20F02A VO

DCSID: G-610.19 (10/01/19)

1000

μg/L



11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-011

Order: 96319
Page: 62 of 100
Date: 06/19/20

Applied Science & Technology, 184649 Client Identification: Sample Description: MW-108-052820 Chain of Custody: Inc. - Brighton 1-10860 05/28/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: 10:30 Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-011D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-108-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free U mg/L 0.0050 1.0 06/04/20 PW20F04B 06/04/20 WQ20F04A VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-011E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-108-052820 Preparation Analysis Q Units Reporting Limit Dilution Parameter(s) Result P. Date P. Batch A. Date A. Batch Init. U LLV-PT20F04A 5.0 T420F04B JLH 1. Arsenic μg/L 10 06/04/20 06/04/20 2. Barium 380 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium 29 μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper 13 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L 5. Lead 46 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel U 20 10 06/04/20 PT20F04A 06/04/20 T420F04B μg/L U 8. Selenium μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver U μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B U LLV-10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 U T420F04B JLH 11. Zinc μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-011E Matrix: Ground Water Method: EPA 7470A Description: MW-108-052820 Preparation Analysis Q Units P. Date A. Date Parameter(s) Result Reporting Limit Dilution P. Batch A. Batch Init. 1. Mercury 0.113 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC μg/L Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-011 Matrix: Ground Water Description: MW-108-052820 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT ua/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

T: (810) 220-3300

T: (231) 775-8368



Order: Page: Date:

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Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-108-052820 Chain of Custody:

184649

1-10860 Client Project Name:

Sample No:

Collect Date:

05/28/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Ground Water

Collect Time:

10:30

Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-011 **Matrix: Ground Water**

NA: Not Applicable

Sample Matrix:

Method: EPA 3510C/EPA 8082A

Description: MW-108-052820

‡: Parameter not included in NELAC Scope of Analysis.

					Prepa	ration	A	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C TKT
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C TKT

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-011F **Matrix: Ground Water**

Method: EPA 5030C/EPA 8260D Description: MW-108-052820

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
3. Benzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
4. Bromobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
5. Bromochloromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
6. Bromodichloromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
7. Bromoform	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
8. Bromomethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
9.2-Butanone	U		μg/L	25	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
10. n-Butylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
11. sec-Butylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
12. tert-Butylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
13. Carbon Disulfide	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
15. Chlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
16. Chloroethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
17. Chloroform	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
18. Chloromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
19. 2-Chlorotoluene	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
21. Dibromochloromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
22. Dibromomethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-108-052820 Chain of Custody:

184649

Client Project Name: 1-10860

Sample No:

Collect Date:

05/28/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Ground Water

Collect Time: 10:30

Sample Matrix:

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D

Aliquot ID:

96319-011F

Matrix: Ground Water

Description: MW-108-052820

Wethod: EPA 5030C/EPA 8260D		Description: www-108-052820										
						Prepa	ration	А	nalysis			
Parameter(s)	Result	Q U	nits	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	ln		
30. cis-1,2-Dichloroethene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL		
31. trans-1,2-Dichloroethene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL		
32.1,2-Dichloropropane	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL		
33. cis-1,3-Dichloropropene	U	μ	g/L	0.50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL		
34. trans-1,3-Dichloropropene	U	μ	g/L	0.50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JI		
35. Ethylbenzene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JI		
36. Ethylene Dibromide	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JI		
37.2-Hexanone	U	μ	g/L	50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JI		
38. Isopropylbenzene	U	μ	g/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JI		
39. 4-Methyl-2-pentanone	U	μ	g/L	50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JI		
40. Methylene Chloride	U	V- μ	g/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J		
41.2-Methylnaphthalene	U	μ	g/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
42. MTBE	U	μ	g/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
43. Naphthalene	U	μ	g/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
44. n-Propylbenzene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
45. Styrene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
46. 1,1,1,2-Tetrachloroethane	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
47. 1,1,2,2-Tetrachloroethane	U	μ	g/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J		
48. Tetrachloroethene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
49. Toluene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
50. 1,2,4-Trichlorobenzene	U	μ	g/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
51.1,1,1-Trichloroethane	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
52. 1,1,2-Trichloroethane	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
53. Trichloroethene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
54. Trichlorofluoromethane	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
55. 1,2,3-Trichloropropane	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
56. 1,2,3-Trimethylbenzene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
57. 1,2,4-Trimethylbenzene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
58. 1,3,5-Trimethylbenzene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
59. Vinyl Chloride	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
60. m&p-Xylene	U	μ	g/L	2.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
61. o-Xylene	U	μ	g/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		
62. Xylenes	U	μ	g/L	3.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	J		



Order: 96319 65 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-108-052820

Ground Water

Chain of Custody:

184649

1-10860 Client Project Name:

Sample No:

Collect Date: Collect Time: 05/28/20 10:30

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	ot ID: cription:	96319-011 MW-108-052820	Matrix: G	round Water		
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
3. Aniline	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
4. Anthracene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
15.4-Bromophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
‡ 18. Carbazole	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
19.4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
20.2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
22.4-Chlorophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
23. Chrysene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
28.2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
30.2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
32. 2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
34. Fluorene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
35. Hexachlorobenzene	U	L+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 96319 Page: 66 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-108-052820

Chain of Custody:

184649

Client Project Name: 1-1

1-10860

Sample No:

Collect Date:

05/28/20

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time:

me: **10:30**

Sample Comments:

Definitions: Q: Qualifi

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 96319-011 Matrix: Ground Water
Method: EPA 3510C/EPA 8270E Description: MW-108-052820

Method: EPA 35 IUC/EPA 82/UE		Description: MW-108-052820										
						Prepa	ration	A	Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init		
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ		
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ		
40. Isophorone	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ		
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ		
42. 2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ		
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	Gu		
44.3&4-Methylphenol	U	G+	μg/L	10	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
45. Naphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
46.2-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
47.3-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
56.2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
58. Phenanthrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
59. Phenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
60. Pyrene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
61. Pyridine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		
64. 2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G		

pH, Electrometric Aliquot ID: 96319-011B Matrix: Ground Water
Method: EPA 9040C Description: MW-108-052820

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. -1.00 NA NA 06/03/20 21:02 WD20F03A JMK 1. pH 12.3 pH Units 1.0

lab@fibertec.us



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-011

Order: 96319 Page: 67 of 100 Date: 06/19/20

Analysis

A. Batch

WU20F02A VO

Init.

A. Date

06/02/20

Applied Science & Technology, Sample Description: MW-108-052820 Chain of Custody: 184649 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/28/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:30 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-011B Matrix: Ground Water Method: EPA 9056A Description: MW-108-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 28000 μg/L 10000 1.0 06/05/20 06/05/20 Residue, Filterable (TDS) Aliquot ID: 96319-011A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-108-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 1300000 1.3 06/03/20 06/04/20 WH20F03A JMK μg/L Aliquot ID: 96319-011C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-108-052820

Reporting Limit

10

Dilution

1.0

Result

1500

Q

Units

μg/L

RSN: 96319-200619094841

Preparation

P. Batch

PW20F02A

P. Date

06/02/20



11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-012

Order: 96319
Page: 68 of 100
Date: 06/19/20

MW-109D-052820 Applied Science & Technology, 184649 Client Identification: Sample Description: Chain of Custody: Inc. - Brighton 1-10860 05/28/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: 10:35 Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-012D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-109D-052820 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.25 mg/L 0.025 5.0 06/04/20 PW20F04B 06/04/20 WQ20F04A AMW Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-012E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-109D-052820 Preparation Analysis Dilution Q Units Reporting Limit Parameter(s) Result P. Date P. Batch A. Date A. Batch Init. U LLV-5.0 PT20F04A T420F04B JLH 1. Arsenic μg/L 10 06/04/20 06/04/20 2. Barium 500 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium U μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper U 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L U 5. Lead 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel U 20 10 06/04/20 PT20F04A 06/04/20 T420F04B μg/L U 8. Selenium μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver U μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B U LLV-10 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 06/04/20 T420F04B JLH 11. Zinc 160 μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-012E Matrix: Ground Water Method: EPA 7470A Description: MW-109D-052820 Preparation Analysis Q Units P. Date A. Date Parameter(s) Result Reporting Limit Dilution P. Batch A. Batch Init. 1. Mercury 0.114 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC μg/L Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-012 Matrix: Ground Water Description: MW-109D-052820 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT μg/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

T: (810) 220-3300

T: (231) 775-8368



Order: 96 Page: 69 Date: 06

96319 69 of 100 06/19/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-109D-052820

Chain of Custody:

184649

Client Project Name: 1-10860

Sample No:

Sample Matrix:

Collect Date:

05/28/20

Client Project No: 1-10860

·

Ground Water Collect Time:

ollect Time: 10:35

Sample Comments:

Definitions: Q: Qualifier (see defin

Q: Qualifier (see definitions at end of report) NA: Not Applicable

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Method: EPA 5030C/EPA 8260D

Aliquot ID:

96319-012

Matrix: Ground Water

Description: MW-109D-052820

					Prepa	aration	A	Analysis	
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

96319-012F

Matrix: Ground Water

Description: MW-109D-052820

_		_				Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
1. Acetone	U	Y1	μg/L	50	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
‡ 2. Acrylonitrile	U	Y1	μg/L	10	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
3. Benzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
4. Bromobenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
5. Bromochloromethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
6. Bromodichloromethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
7. Bromoform	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
8. Bromomethane	U	L-	μg/L	25	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
9. 2-Butanone	U	Y1	μg/L	25	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
10. n-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
11. sec-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
12. tert-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
13. Carbon Disulfide	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
14. Carbon Tetrachloride	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
15. Chlorobenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
16. Chloroethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
17. Chloroform	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
18. Chloromethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
19. 2-Chlorotoluene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
20. 1,2-Dibromo-3-chloropropane (SIM)	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
21. Dibromochloromethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
22. Dibromomethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
23. 1,2-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
24. 1,3-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
25. 1,4-Dichlorobenzene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
26. Dichlorodifluoromethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
27. 1,1-Dichloroethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
28. 1,2-Dichloroethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
29. 1.1-Dichloroethene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	ال

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Ground Water

Order: 96319 Page: 70 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-109D-052820

Chain of Custody:

184649

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

05/28/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

1-10860

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

10:35

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-012F Matrix: Ground Water

Sample Matrix:

Method: EPA 5030C/EPA 8260D Description: MW-109D-052820

						Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
30. cis-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
31. trans-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLI
32.1,2-Dichloropropane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
33. cis-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
34. trans-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
35. Ethylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
36. Ethylene Dibromide	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
37. 2-Hexanone	U	Y1	μg/L	50	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
38. Isopropylbenzene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
39. 4-Methyl-2-pentanone	U	Y1	μg/L	50	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
40. Methylene Chloride	U	V-	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
41.2-Methylnaphthalene	U	Y1	μg/L	25	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
42. MTBE	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
43. Naphthalene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
44. n-Propylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
45. Styrene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
46. 1,1,1,2-Tetrachloroethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
47. 1,1,2,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
48. Tetrachloroethene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
49. Toluene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
50. 1,2,4-Trichlorobenzene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
51.1,1,1-Trichloroethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
52.1,1,2-Trichloroethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
53. Trichloroethene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
54. Trichlorofluoromethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
55. 1,2,3-Trichloropropane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
56. 1,2,3-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
57. 1,2,4-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
58. 1,3,5-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
59. Vinyl Chloride	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
60. m&p-Xylene	6.9	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
61. o-Xylene	2.9	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
62. Xylenes	9.8	Y1	μg/L	7.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI



Order: 96319 71 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

Base/Neutral/Acid Semivolatiles by GC/MS

Inc. - Brighton

MW-109D-052820 Sample Description:

Aliquot ID:

Chain of Custody:

184649

1-10860 Client Project Name:

Sample No:

Collect Date:

Matrix: Ground Water

05/28/20

1-10860 Sample Matrix: **Ground Water** Collect Time:

96319-012

10:35

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

base/neutral/Acid Semivolatiles by GC/MS				_	uot iD:	90319-012	watrix. C	iround water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-109D-052820				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepara P. Date	tion P. Batch	A. Date	nalysis A. Batch	Init.
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
3. Aniline	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
4. Anthracene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
15.4-Bromophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
‡ 18. Carbazole	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
19. 4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
20. 2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
22.4-Chlorophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
23. Chrysene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
28. 2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
30. 2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
32. 2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
34. Fluorene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
35. Hexachlorobenzene	U	L+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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Order: 96319 Page: 72 of 100 Date: 06/19/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-109D-052820 Chain of Custody:

184649

Client Project Name:

1-10860

Sample No:

Collect Date:

05/28/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time: 10:35

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E

Aliquot ID: 96319-012 Description: MW-109D-052820 Matrix: Ground Water

						Prepa	ration	A	ınalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
40. Isophorone	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
42. 2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
44.3&4-Methylphenol	U	G+	μg/L	10	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
45. Naphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
47.3-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
58. Phenanthrene	3.3	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
59. Phenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
60. Pyrene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
61. Pyridine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
64. 2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ

pH, Electrometric

Aliquot ID:

96319-012B

Matrix: Ground Water

Method: EPA 9040C

Description: MW-109D-052820

Davameter(e)						Prepara	ation	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. pH	12.5	Н	pH Units	-1.00	1.0	NA	NA	06/03/20 20:31	WD20F03A	JMK



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-012

Order: 96319 Page: 73 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: MW-109D-052820 Chain of Custody: 184649 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/28/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:35 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-012B Matrix: Ground Water Method: EPA 9056A Description: MW-109D-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 32000 μg/L 10000 1.0 06/05/20 06/05/20 Residue, Filterable (TDS) Aliquot ID: 96319-012A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-109D-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 1900000 06/03/20 WH20F03A 06/04/20 WH20F03A JMK μg/L 1.3 Aliquot ID: 96319-012C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Description: MW-109D-052820 Method: SM 4500-NH3 G-2011 Preparation Analysis

Reporting Limit

10

Dilution

1.0

P. Date

06/02/20

P. Batch

PW20F02A

A. Date

06/02/20

A. Batch

WU20F02A VO

Init.

Result

3400

Q

Units

μg/L



Order: 96319 Page: 74 of 100 Date: 06/19/20

Applied Science & Technology, 184649 Client Identification: Sample Description: MW-110s-052820 Chain of Custody: Inc. - Brighton 1-10860 05/28/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: 13:20 Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-013D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-110s-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free U mg/L 0.0050 1.0 06/04/20 PW20F04B 06/04/20 WQ20F04A VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-013E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-110s-052820 Preparation Analysis Q Units Reporting Limit Dilution Parameter(s) Result P. Date P. Batch A. Date A. Batch Init. U LLV-PT20F04A 5.0 T420F04B JLH 1. Arsenic μg/L 10 06/04/20 06/04/20 2. Barium 330 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium 52 μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper U 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L U 5. Lead 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel U 20 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 8. Selenium μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver U μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B U LLV-10 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 06/04/20 U T420F04B JLH 11. Zinc μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-013E Matrix: Ground Water Method: EPA 7470A Description: MW-110s-052820 Preparation Analysis Q Units P. Date A. Date Parameter(s) Result Reporting Limit Dilution P. Batch A. Batch Init. 1. Mercury 0.103 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC μg/L Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-013 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-110s-052820 Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L 4. Aroclor-1242 U $\mu g/L$ 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT ua/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT

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Brighton, MI 48116

Cadillac, MI 49601

1914 Holloway Drive

11766 E. Grand River

8660 S. Mackinaw Trail



Order: 96
Page: 75
Date: 06

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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-110s-052820

Chain of Custody:

184649

Client Project Name: 1-1

1-10860

Sample No:

Collect Date:

05/28/20

Client Project No:

1-10860

Sample Matrix: Ground Water

Collect Time:

13:20

Sample Comments:

Definitions: Q: Qu

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 96319-013 Matrix: Ground Water Description: MW-110s-052820

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. SF20F04C TKT 8. Aroclor-1262 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 U 9. Aroclor-1268 $\mu g/L$ 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-013F Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-110s-052820

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
3. Benzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
4. Bromobenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
5. Bromochloromethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
6. Bromodichloromethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
7. Bromoform	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
8. Bromomethane	U	L-	μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
9.2-Butanone	U		μg/L	25	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
10. n-Butylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
11. sec-Butylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
12. tert-Butylbenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
13. Carbon Disulfide	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
15. Chlorobenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
16. Chloroethane	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLN
17. Chloroform	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLN
18. Chloromethane	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLN
19.2-Chlorotoluene	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLN
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLN
21. Dibromochloromethane	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLN
22. Dibromomethane	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLN
23. 1,2-Dichlorobenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
24. 1,3-Dichlorobenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLN
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
29. 1,1-Dichloroethene	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM

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Order: 96319 Page: 76 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-110s-052820

Chain of Custody:

184649

Client Project Name:

1-10860

Sample No:

Collect Date:

05/28/20

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Tim

Collect Time: 13:20

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

96319-013F

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-110s-052820

Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 30. cis-1,2-Dichloroethene U μg/L 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM 31. trans-1.2-Dichloroethene U μg/L 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM 32. 1,2-Dichloropropane U 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM μg/L U 33. cis-1,3-Dichloropropene 0.50 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JI M μg/L 34. trans-1,3-Dichloropropene U 0.50 06/04/20 VB20F04A 06/04/20 VB20F04A JLM μg/L 1.0 U VB20F04A VB20F04A JLM 35. Ethylbenzene μg/L 1.0 10 06/04/20 06/04/20 36. Ethylene Dibromide U μg/L 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM 37.2-Hexanone U VB20F04A VB20F04A JLM μg/L 50 1.0 06/04/20 06/04/20 38. Isopropylbenzene U 5.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM ua/L U 50 VB20F04A 39. 4-Methyl-2-pentanone μg/L 1.0 06/04/20 06/04/20 VB20F04A JLM 40. Methylene Chloride U V-5.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM μg/L ‡ 41.2-Methylnaphthalene U μg/L 5.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM 42. MTBE U 5.0 1.0 VB20F04A VB20F04A JLM μg/L 06/04/20 06/04/20 43. Naphthalene u 5.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM μg/L U 44. n-Propylbenzene 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JI M μg/L U 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM 45. Styrene μg/L 46. 1,1,1,2-Tetrachloroethane U 10 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM μg/L U 1.0 1.0 VB20F04A VB20F04A 47. 1,1,2,2-Tetrachloroethane μg/L 06/04/20 06/04/20 U 06/04/20 VB20F04A VB20F04A JI M 48. Tetrachloroethene μg/L 1.0 1.0 06/04/20 49. Toluene U 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM ua/L U 5.0 1.0 VB20F04A 50. 1,2,4-Trichlorobenzene μg/L 06/04/20 06/04/20 VB20F04A JLM U 51.1,1,1-Trichloroethane μq/L 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM U ‡ 52.1,1,2-Trichloroethane μg/L 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM U 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM 53. Trichloroethene μq/L 54. Trichlorofluoromethane U 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM μg/L U 55. 1,2,3-Trichloropropane 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM μg/L ‡ 56.1,2,3-Trimethylbenzene U μg/L 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM U 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM 57. 1,2,4-Trimethylbenzene μg/L 1.0 58. 1,3,5-Trimethylbenzene U 06/04/20 VB20F04A 06/04/20 VB20F04A JLM μg/L 1.0 1.0 59. Vinyl Chloride U 1.0 1.0 VB20F04A VB20F04A JLM μg/L 06/04/20 06/04/20 U 60. m&p-Xylene μg/L 2.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM П 61. o-Xylene μg/L 1.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM ‡ 62. Xylenes U 3.0 1.0 06/04/20 VB20F04A 06/04/20 VB20F04A JLM μg/L



Order: 96319 77 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

MW-110s-052820 Sample Description:

Ground Water

Chain of Custody:

184649

Client Project Name:

1-10860

Sample No:

Sample Matrix:

Collect Date: Collect Time: 05/28/20

13:20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS	Aliquot ID:	96319-013	Matrix: Ground Water
Method: EPA 3510C/EPA 8270E	Description	MW-110s-052820	

Welliod. EFA 33100/EFA 0270E				Des	cription. w	105-05202	U			
						Prepa	ration	A	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lr
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
3. Aniline	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
4. Anthracene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
5. Azobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	C
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	C
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	C
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	C
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
15. 4-Bromophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
18. Carbazole	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
19. 4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
20. 2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
22.4-Chlorophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
23. Chrysene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
28. 2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
30. 2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	-
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
32.2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
34. Fluorene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
35. Hexachlorobenzene	U	L+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	(
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	
-			. 0							

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Order: Page: Date:

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Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-110s-052820

Ground Water

‡: Parameter not included in NELAC Scope of Analysis.

Chain of Custody:

184649

1-10860 Client Project Name:

Sample No:

Collect Date:

05/28/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Collect Time:

13:20

Matrix: Ground Water Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 96319-013

NA: Not Applicable

Sample Matrix:

Method: EPA 3510C/EPA 8270E Description: MW-110s-052820

Method. LFA 33100/LFA 0270L			U							
						Prepa	ration	Д	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
40. Isophorone	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
42.2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
‡ 44.3&4-Methylphenol	U	G+	μg/L	10	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
45. Naphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
47. 3-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	Gu
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G٠
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
58. Phenanthrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
59. Phenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
60. Pyrene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
61. Pyridine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	Gu
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
64. 2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G٠

pH, Electrometric Aliquot ID: 96319-013B Matrix: Ground Water

Method: EPA 9040C Description: MW-110s-052820

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. -1.00 NA NA 06/03/20 20:57 WD20F03A JMK 1. pH 12.4 pH Units 1.0

DCSID: G-610.19 (10/01/19)



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-013

Order: 96319 Page: 79 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: MW-110s-052820 Chain of Custody: 184649 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/28/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:20 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-013B Matrix: Ground Water Method: EPA 9056A Description: MW-110s-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 51000 μg/L 10000 1.0 06/06/20 06/06/20 Residue, Filterable (TDS) Aliquot ID: 96319-013A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-110s-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 1500000 06/03/20 06/04/20 WH20F03A JMK μg/L 1.3 Aliquot ID: 96319-013C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-110s-052820 Preparation Analysis

Reporting Limit

10

Dilution

1.0

P. Date

06/02/20

P. Batch

PW20F02A

A. Date

06/02/20

A. Batch

WU20F02A VO

Init.

Result

3400

Q

Units

μg/L

RSN: 96319-200619094841



Analytical Laboratory Report Laboratory Project Number: 96319

Order: 96319 Page:

80 of 100 Date: 06/19/20 Laboratory Sample Number: 96319-014 Applied Science & Technology, Sample Description: MW-110D-052820 Chain of Custody: 184649 Client Identification: Inc. - Brighton Client Project Name: 1-10860 Collect Date: 05/28/20 Sample No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 12:15 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-014D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-110D-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WQ20F04A VO 1. Cyanide, Free U mg/L 0.0050 1.0 06/04/20 PW20F04B 06/04/20

Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-014E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-110D-052820 Analysis

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Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	Ul	LLV- μg/L	5.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
2. Barium	540	μg/L	100	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
3. Chromium	32	μg/L	10	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
4. Copper	9.4	μg/L	4.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
5. Lead	14	μg/L	3.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
6. Manganese	U	μg/L	50	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
7. Nickel	U	μg/L	20	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
8. Selenium	U	μg/L	5.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
9. Silver	U	μg/L	0.20	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
10. Vanadium	UI	LLV- μg/L	4.0	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH
11. Zinc	U	μg/L	50	10	06/04/20	PT20F04A	06/04/20	T420F04B	JLH

Mercury by CVAAS, Total Aliquot ID: 96319-014E Matrix: Ground Water Method: EPA 7470A Description: MW-110D-052820

Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury 0.105 μg/L 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC

Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-014 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-110D-052820

					Preparation		Analysis			
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
1. Aroclor-1016	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT	
2. Aroclor-1221	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT	
3. Aroclor-1232	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT	
4. Aroclor-1242	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT	
5. Aroclor-1248	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT	
6. Aroclor-1254	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT	
7. Aroclor-1260	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT	

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Order: Page: Date:

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Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-110D-052820 Chain of Custody:

184649

1-10860 Client Project Name:

Sample No:

Collect Date: Collect Time: 05/28/20 12:15

Client Project No: Sample Comments:

Definitions:

Polychlorinated Biphenyls (PCBs)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Aliquot ID: 96319-014 Matrix: Ground Water

Ground Water

Method: EPA 3510C/EPA 8082A	Description: MW-110D-052820									
					Preparation		Analysis			
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.	
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT	
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT	

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 96319-014F Matrix: Ground Water Method: EPA 5030C/EPA 8260D Description: MW-110D-052820

	D	0	11.2	D	D'' ''	Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
1. Acetone	U	Y1	μg/L	50	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
2. Acrylonitrile	U	Y1	μg/L	10	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLI
3. Benzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
4. Bromobenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
5. Bromochloromethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
6. Bromodichloromethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
7. Bromoform	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
8. Bromomethane	U	L-	μg/L	25	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
9.2-Butanone	U	Y1	μg/L	25	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
10. n-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
11. sec-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
12. tert-Butylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
13. Carbon Disulfide	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
14. Carbon Tetrachloride	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
15. Chlorobenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
16. Chloroethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
17. Chloroform	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
18. Chloromethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
19. 2-Chlorotoluene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
20.1,2-Dibromo-3-chloropropane (SIM)	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
21. Dibromochloromethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
22. Dibromomethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
23. 1,2-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
24. 1,3-Dichlorobenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
25. 1,4-Dichlorobenzene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
26. Dichlorodifluoromethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
27.1,1-Dichloroethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
28. 1,2-Dichloroethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
29. 1,1-Dichloroethene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J

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Applied Science & Technology, Client Identification:

Inc. - Brighton

MW-110D-052820 Sample Description:

Chain of Custody:

184649

Client Project Name: 1-10860

Sample No:

Collect Date:

05/28/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time:

12:15

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D

Aliquot ID:

96319-014F

Matrix: Ground Water

Description: MW-110D-052820

Wethou. EFA 30300/EFA 0200D				200	onpaon m	W-110D-03202				
						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
30. cis-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
31. trans-1,2-Dichloroethene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
32.1,2-Dichloropropane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
33. cis-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
34. trans-1,3-Dichloropropene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
35. Ethylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
36. Ethylene Dibromide	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
37.2-Hexanone	U	Y1	μg/L	50	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
38. Isopropylbenzene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	Jl
39. 4-Methyl-2-pentanone	U	Y1	μg/L	50	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JI
40. Methylene Chloride	U	V-	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
41.2-Methylnaphthalene	U	Y1	μg/L	25	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
42. MTBE	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
43. Naphthalene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
44. n-Propylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
45. Styrene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
46. 1,1,1,2-Tetrachloroethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
47. 1,1,2,2-Tetrachloroethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
48. Tetrachloroethene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
49. Toluene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
50. 1,2,4-Trichlorobenzene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
51. 1,1,1-Trichloroethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
52. 1,1,2-Trichloroethane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
53. Trichloroethene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
54. Trichlorofluoromethane	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
55. 1,2,3-Trichloropropane	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
56. 1,2,3-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
57. 1,2,4-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
58. 1,3,5-Trimethylbenzene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
59. Vinyl Chloride	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
60. m&p-Xylene	U	Y1	μg/L	5.0	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
61. o-Xylene	U	Y1	μg/L	2.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J
62. Xylenes	U	Y1	μg/L	7.5	5.0	06/04/20	VB20F04A	06/04/20	VB20F04A	J

DCSID: G-610.19 (10/01/19)



Order: 96319 Page: 83 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-110D-052820

Chain of Custody:

184649

Client Project Name:

1-10860

Sample No:

Collect Date:

05/28/20

Client Project No:

1-10860 Sample Matrix:

Ground Water Collect Time:

ollect Time: 12:15

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	96319-014	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-110D-052820				
						Prepara	tion	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
3. Aniline	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
4. Anthracene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
15.4-Bromophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
‡ 18. Carbazole	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
19.4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
20.2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
22.4-Chlorophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
23. Chrysene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
28.2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
30.2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
32.2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
34. Fluorene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
35. Hexachlorobenzene	U	L+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
37. Hexachlorocyclopentadiene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP

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Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-110D-052820 Chain of Custody:

184649

Client Project Name:

1-10860

Sample No:

Collect Date:

05/28/20

Client Project No:

1-10860 Sample Matrix:

Ground Water Collect Time:

12:15

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E

Aliquot ID: 96319-014 Description: MW-110D-052820 Matrix: Ground Water

Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 38. Hexachloroethane U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 39. Indeno(1,2,3-cd)pyrene U G+ μg/L 2.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 40. Isophorone U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 41.2-Methyl-4,6-dinitrophenol u G+ 20 1.0 PS20F04A 06/05/20 SN20F04D GJP 06/04/20 μg/L 42.2-Methylnaphthalene U G+ 5.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 1.0 u PS20F04A 06/05/20 43. 2-Methylphenol G+ μg/L 5.0 10 06/04/20 SN20F04D GJP ‡ 44.3&4-Methylphenol U G+ μg/L 10 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 45. Naphthalene 5.0 PS20F04A U G+ μg/L 10 06/04/20 06/05/20 SN20F04D GJP 46.2-Nitroaniline U G+ 20 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP ua/L u 20 47.3-Nitroaniline G+ μg/L 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 48.4-Nitroaniline U G+ $\mu g/L$ 20 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 49. Nitrobenzene U G+ μg/L 3.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP U G+ 5.0 1.0 PS20F04A SN20F04D GJP 50. 2-Nitrophenol μg/L 06/04/20 06/05/20 51.4-Nitrophenol U V-20 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 52. N-Nitrosodimethylamine 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP U G+ μg/L U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 53. N-Nitrosodi-n-propylamine μg/L 54. N-Nitrosodiphenylamine U G+ 5.0 10 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L U 5.0 1.0 SN20F04D GJP 55. Di-n-octyl Phthalate G+ μg/L 06/04/20 PS20F04A 06/05/20 56.2,2'-Oxybis(1-chloropropane) U V-5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 57. Pentachlorophenol u G+ 20 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP ua/L 58. Phenanthrene U G+ 2.0 1.0 PS20F04A μg/L 06/04/20 06/05/20 SN20F04D GJP 59. Phenol U G+ μq/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 60. Pyrene U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 61. Pyridine U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 62. 1,2,4-Trichlorobenzene U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 63. 2,4,5-Trichlorophenol Ü G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 64.2,4,6-Trichlorophenol U G+ μg/L 4.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP

pH, Electrometric

Aliquot ID:

96319-014B

Matrix: Ground Water

Method: EPA 9040C

Description: MW-110D-052820

						Prepara	ation	An	Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. pH	12.5	Н	pH Units	-1.00	1.0	NA	NA	06/03/20 20:33	WD20F03A	JMK



Parameter(s)

1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-014

Order: 96319
Page: 85 of 100
Date: 06/19/20

Analysis

A. Batch

WU20F02A VO

Init.

A. Date

06/02/20

Applied Science & Technology, Sample Description: MW-110D-052820 Chain of Custody: 184649 Client Identification: Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/28/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 12:15 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-014B Matrix: Ground Water Method: EPA 9056A Description: MW-110D-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 39000 μg/L 10000 1.0 06/06/20 06/06/20 Residue, Filterable (TDS) Aliquot ID: 96319-014A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-110D-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 1700000 06/03/20 WH20F03A 06/04/20 WH20F03A JMK μg/L 1.3 Aliquot ID: 96319-014C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Method: SM 4500-NH3 G-2011 Description: MW-110D-052820

Reporting Limit

10

Dilution

1.0

lab@fibertec.us

Result

3100

Q

Units

μg/L

Preparation

P. Batch

PW20F02A

P. Date

06/02/20



11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-015

Order: 96319 Page: 86 of 100 Date: 06/19/20

Applied Science & Technology, 184649 Client Identification: Sample Description: MW-101-052820 Chain of Custody: Inc. - Brighton 1-10860 05/28/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: 12:30 Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-015D Matrix: Ground Water Method: ASTM D7237-10 Description: MW-101-052820 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 2.6 mg/L 0.25 50 06/04/20 PW20F04B 06/04/20 WQ20F04A AMW Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-015E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-101-052820 Preparation Analysis Q Units Reporting Limit Dilution Parameter(s) Result P. Date P. Batch A. Date A. Batch Init. PT20F04A 7.2 LLV-5.0 T420F04B JLH 1. Arsenic μg/L 10 06/04/20 06/04/20 2. Barium 130 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium U μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper U 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L U 5. Lead 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel U 20 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 8. Selenium μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver 0.63 μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B U LLV-10 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 06/04/20 U T420F04B JLH 11. Zinc μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-015E Matrix: Ground Water Method: EPA 7470A Description: MW-101-052820 Preparation Analysis Q Units P. Date A. Date Parameter(s) Result Reporting Limit Dilution P. Batch A. Batch Init. 1. Mercury 0.096 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC μg/L Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-015 Matrix: Ground Water Description: MW-101-052820 Method: EPA 3510C/EPA 8082A Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT μg/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

T: (810) 220-3300

T: (231) 775-8368



Order: Page: Date:

96319 87 of 100 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-101-052820 Chain of Custody:

184649

Client Project Name:

1-10860

Sample No:

Collect Date:

05/28/20

Client Project No:

Sample Matrix:

Collect Time:

12:30

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: Description: MW-101-052820

96319-015

Matrix: Ground Water

Polychlorinated Biphenyls (PCBs)
Method: EPA 3510C/EPA 8082A

Method: EPA 5030C/EPA 8260D

					Prepa	ration	Analysis		
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C	TKT

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

Ground Water

96319-015F

Matrix: Ground Water

Description: MW-101-052820

						Prepa	ration	Α	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		μg/L	50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLN
3. Benzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
4. Bromobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
5. Bromochloromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
6. Bromodichloromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
7. Bromoform	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
8. Bromomethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
9.2-Butanone	U		μg/L	25	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
10. n-Butylbenzene	3.3	E1	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
11. sec-Butylbenzene	1.8	E1	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
12. tert-Butylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
13. Carbon Disulfide	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
15. Chlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
16. Chloroethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
17. Chloroform	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
18. Chloromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
19.2-Chlorotoluene	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
21. Dibromochloromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
22. Dibromomethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
29. 1,1-Dichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 96319 Page: 88 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-101-052820

Chain of Custody:

184649

Client Project Name: 1-

1-10860

Sample No:

Collect Date:

05/28/20

Client Project No:

5000

Ground Water

Collect Time: 12:30

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by GC/MS	Aliquot ID: 96319-015F Matrix: Ground Water
Method: EPA 5030C/EPA 8260D	Description: MW-101-052820
	Preparation Ar

						Preparation		Analysis		
'arameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLI
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLI
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLI
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLI
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
35. Ethylbenzene	5.2		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
36. Ethylene Dibromide	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
37.2-Hexanone	U		μg/L	50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
38. Isopropylbenzene	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
39. 4-Methyl-2-pentanone	U		μg/L	50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
40. Methylene Chloride	U	V-	μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
41.2-Methylnaphthalene	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
42. MTBE	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
43. Naphthalene	8.7		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
44. n-Propylbenzene	4.4		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
45. Styrene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
46. 1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
47. 1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JL
48. Tetrachloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
49. Toluene	1.6		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
50. 1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
52. 1,1,2-Trichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
53. Trichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
55. 1,2,3-Trichloropropane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
56. 1,2,3-Trimethylbenzene	30		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
57. 1,2,4-Trimethylbenzene	50		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
58. 1,3,5-Trimethylbenzene	13		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
59. Vinyl Chloride	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
60. m&p-Xylene	25		μg/L	2.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
61. o-Xylene	11		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JL
62. Xylenes	36		μg/L	3.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	



Order: 96319 Page: 89 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-101-052820

Sample Matrix:

Chain of Custody:

184649

Client Project Name: 1-1

1-10860 Sample No:

Collect Date:

05/28/20 12:30

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

Ground Water

Collect Time:

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID: cription:	96319-015 MW-101-052820	Matrix: G	round Water		
						Prepar			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJP
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
3. Aniline	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
4. Anthracene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
‡ 5. Azobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
9. Benzo(ghi)perylene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
14. Bis(2-ethylhexyl)phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
15.4-Bromophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
16. Butyl Benzyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
17. Di-n-butyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
‡ 18. Carbazole	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
19. 4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
20. 2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
22.4-Chlorophenyl Phenylether	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
23. Chrysene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
26. 2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
28. 2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
30. 2,4-Dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	
32. 2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	
33. Fluoranthene	U	G+	μg/L	1.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	
34. Fluorene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	
35. Hexachlorobenzene	U	L+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	
36. Hexachlorobutadiene	U	V+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	
37. Hexachlorocyclopentadiene		G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	

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Order: 96319 Page: 90 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-101-052820

Chain of Custody:

184649

Client Project Name: 1-10

1-10860

Sample No:

Sample Matrix:

Collect Date:

05/28/20

Client Project No:

Campi

Ground Water Collect Time:

ime: 12:30

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	96319-015	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-101-052820				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
40. Isophorone	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
42. 2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
‡ 44.3&4-Methylphenol	U	G+	μg/L	10	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
45. Naphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
47. 3-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJI
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJI
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJI
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJI
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
58. Phenanthrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
59. Phenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
60. Pyrene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
61. Pyridine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
64. 2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJF
pH, Electrometric				Aliq	uot ID:	96319-015B	Matrix: G	round Water		
Method: EPA 9040C				Des	cription:	MW-101-052820				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.

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pH Units

11.5 H

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1.0

NA

NA

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

-1.00

1. pH

06/03/20 20:43 WD20F03A JMK



Client Identification:

1. Total Dissolved Solids

Nitrogen, Ammonia (Auto Analyzer)

Applied Science & Technology,

490000

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-015

MW-101-052820

Sample Description:

Order: 96319 91 of 100 Page: Date: 06/19/20

184649

Chain of Custody:

WH20F03A

06/04/20

Matrix: Ground Water

WH20F03A JMK

06/03/20

96319-015C

Inc. - Brighton 1-10860 Client Project Name: Collect Date: 05/28/20 Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 12:30 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-015B Matrix: Ground Water Method: EPA 9056A Description: MW-101-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 68000 μg/L 10000 1.0 06/06/20 06/06/20 Residue, Filterable (TDS) Aliquot ID: 96319-015A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-101-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch

Method: SM 4500-NH3 G-2011 Description: MW-101-052820 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N 3400 10 1.0 06/02/20 PW20F02A 06/02/20 WU20F02A VO

μg/L

μg/L

52000

1.3

Aliquot ID:

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11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 96319 Laboratory Sample Number: 96319-016

Order: 96319 Page: 92 of 100 Date: 06/19/20

Applied Science & Technology, 184649 Client Identification: Sample Description: Dup-MW Chain of Custody: Inc. - Brighton 1-10860 05/28/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: Collect Time: NA Client Project No: **Ground Water** Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 96319-016D Matrix: Ground Water Method: ASTM D7237-10 **Description: Dup-MW** Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.0091 mg/L 0.0050 1.0 06/04/20 PW20F04B 06/04/20 WQ20F04A VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 96319-016E Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: Dup-MW Preparation Analysis Q Units Reporting Limit Dilution Parameter(s) Result P. Date P. Batch A. Date A. Batch Init. U LLV-5.0 PT20F04A T420F04B JLH 1. Arsenic μg/L 10 06/04/20 06/04/20 2. Barium 390 100 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L 3. Chromium 32 μg/L 10 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 4. Copper 12 4.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μq/L 5. Lead 44 3.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH μg/L U 10 T420F04B 50 06/04/20 PT20F04A 06/04/20 JLH 6. Manganese μg/L 7. Nickel U 20 10 06/04/20 PT20F04A 06/04/20 T420F04B μg/L U 8. Selenium μg/L 5.0 10 06/04/20 PT20F04A 06/04/20 T420F04B JLH 9. Silver U μg/L 0.20 10 06/04/20 PT20F04A 06/04/20 T420F04B U LLV-10 PT20F04A 06/04/20 T420F04B JLH 10. Vanadium μg/L 4.0 06/04/20 U T420F04B JLH 11. Zinc μg/L 50 10 06/04/20 PT20F04A 06/04/20 Mercury by CVAAS, Total Aliquot ID: 96319-016E Matrix: Ground Water Method: EPA 7470A **Description: Dup-MW** Preparation Analysis Q Units Reporting Limit P. Date A. Date Parameter(s) Result Dilution P. Batch A. Batch Init. 1. Mercury 0.094 0.025 1.0 06/02/20 PM20F02B 06/02/20 M720F2B. AVC μg/L Polychlorinated Biphenyls (PCBs) Aliquot ID: 96319-016 Matrix: Ground Water Method: EPA 3510C/EPA 8082A **Description: Dup-MW** Preparation Analysis Reporting Limit P. Batch Parameter(s) Result Ω Units Dilution P. Date A. Date A. Batch Init. 1. Aroclor-1016 U μq/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 2. Aroclor-1221 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 3. Aroclor-1232 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L 4. Aroclor-1242 U 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT μg/L U 5. Aroclor-1248 μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 6. Aroclor-1254 U 0.20 1.0 06/03/20 PS20F03E SF20F04C TKT ua/L 06/04/20 7. Aroclor-1260 U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 SF20F04C TKT 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

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T: (810) 220-3300

T: (231) 775-8368



Order: Page: Date:

96319 93 of 100 06/19/20

Init.

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: Dup-MW Chain of Custody:

184649

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date:

05/28/20

Client Project No:

Ground Water Collect Time:

NA

Sample Comments:

Definitions:

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Q: Qualifier (see definitions at end of report)

NA: Not Applicable

‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID:

96319-016 Description: Dup-MW

Matrix: Ground Water

						Prepa	ration	F	Analysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch
‡ 8. Aroclor-1262	U		μg/L	0.20	1.0	06/03/20	PS20F03E	06/04/20	SF20F04C

SF20F04C TKT U μg/L 0.20 1.0 06/03/20 PS20F03E 06/04/20 9. Aroclor-1268 U 0.20 PS20F03E $\mu g/L$ 1.0 06/03/20 06/04/20 SF20F04C TKT

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

96319-016F

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: Dup-MW

					Preparation		Analysis		
Parameter(s)	Result C) Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	μg/L	50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
‡ 2. Acrylonitrile	U	μg/L	2.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLN
3. Benzene	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
4. Bromobenzene	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
5. Bromochloromethane	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
6. Bromodichloromethane	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
7. Bromoform	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
8. Bromomethane	U	μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
9.2-Butanone	U	μg/L	25	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
10. n-Butylbenzene	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
11. sec-Butylbenzene	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
12. tert-Butylbenzene	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
13. Carbon Disulfide	U	μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
14. Carbon Tetrachloride	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
15. Chlorobenzene	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
16. Chloroethane	U	μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
17. Chloroform	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
18. Chloromethane	U	μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
19.2-Chlorotoluene	U	μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
21. Dibromochloromethane	U	μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
22. Dibromomethane	U	μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
23. 1,2-Dichlorobenzene	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
24. 1,3-Dichlorobenzene	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
25. 1,4-Dichlorobenzene	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
26. Dichlorodifluoromethane	U	μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
27.1,1-Dichloroethane	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
28. 1,2-Dichloroethane	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN
29.1,1-Dichloroethene	U	μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLN

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Order: 96319 Page: 94 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: **Dup-MW**

Chain of Custody:

184649

Client Project Name: 1-10860

Sample No:

Collect Date:

05/28/20

Client Project No:

1-10860

Sample Matrix: Ground Water

Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS			Aliq	uot ID:	96319-016F	Matrix: G				
Method: EPA 5030C/EPA 8260D		Description:				Dup-MW				
						Prepa	ration	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
35. Ethylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
36. Ethylene Dibromide	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
37.2-Hexanone	U		μg/L	50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
38. Isopropylbenzene	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
39. 4-Methyl-2-pentanone	U		μg/L	50	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
40. Methylene Chloride	U	V-	μg/L	5.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
‡ 41.2-Methylnaphthalene	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
42. MTBE	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
43. Naphthalene	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
44. n-Propylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
45. Styrene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
46. 1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
47.1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/04/20	VB20F04A	06/04/20	VB20F04A	JLM
48. Tetrachloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
49. Toluene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
50.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
‡ 52.1,1,2-Trichloroethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
53. Trichloroethene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
55. 1,2,3-Trichloropropane	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
‡ 56.1,2,3-Trimethylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
57. 1,2,4-Trimethylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
58. 1,3,5-Trimethylbenzene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
59. Vinyl Chloride	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
60. m&p-Xylene	U		μg/L	2.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
61. o-Xylene	U		μg/L	1.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM
‡ 62. Xylenes	U		μg/L	3.0	1.0	06/03/20	VB20F03B	06/04/20	VB20F03B	JLM

lab@fibertec.us



Order: 96319
Page: 95 of 100
Date: 06/19/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: Dup-MW

Chain of Custody:

184649

Client Project Name: 1-10860

60 Sample No:

Collect Date:

05/28/20

Client Project No:

1-10860

Sample Matrix: Ground Water

Collect Time:

NA

Sample Comments:

Definitions: Q: Qualifi

Q: Qualifier (see definitions at end of report) NA: Not Applica

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E Aliquot ID: 96319-016
Description: Dup-MW

Matrix: Ground Water

Preparation Analysis Parameter(s) Result Ω Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 1. Acenaphthene U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 2. Acenaphthylene U G+ ua/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 3. Aniline U G+ 4.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 4 Anthracene U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 5. Azobenzene μg/L 6. Benzo(a)anthracene U G+ μg/L 1.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 7. Benzo(a)pyrene U G+ μg/L 1.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP U PS20F04A SN20F04D GJP 8. Benzo(b)fluoranthene G+ μg/L 10 10 06/04/20 06/05/20 9. Benzo(ghi)perylene U G+ 1.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP ua/L 10. Benzo(k)fluoranthene U G+ 1.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 11. Benzyl Alcohol U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 12. Bis(2-chloroethoxy)methane U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP U PS20F04A SN20F04D GJP 13. Bis(2-chloroethyl)ether G+ ua/L 10 10 06/04/20 06/05/20 14. Bis(2-ethylhexyl)phthalate U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L U V+ 5.0 1.0 PS20F04A SN20F04D GJP 15. 4-Bromophenyl Phenylether 06/04/20 06/05/20 μg/L PS20F04A SN20F04D GJP 16. Butyl Benzyl Phthalate U G+ μg/L 5.0 1.0 06/04/20 06/05/20 17. Di-n-butyl Phthalate U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L SN20F04D 18. Carbazole U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 GJP u G+ 5.0 PS20F04A SN20F04D GJP 19. 4-Chloro-3-methylphenol μg/L 1.0 06/04/20 06/05/20 20. 2-Chloronaphthalene U G+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP ua/L 21.2-Chlorophenol П G+ 5.0 PS20F04A 06/05/20 SN20F04D GJP μg/L 1.0 06/04/20 22. 4-Chlorophenyl Phenylether U V+ μq/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 23. Chrysene U G+ μg/L 1.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 24. Dibenzo(a,h)anthracene U G+ 2.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP ua/L 25. Dibenzofuran U G+ 4.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μg/L 26. 2,4-Dichlorophenol U G+ 5.0 1.0 PS20F04A 06/05/20 SN20F04D GJP 06/04/20 μg/L 27. Diethyl Phthalate U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP U G+ 5.0 1.0 PS20F04A SN20F04D GJP 28. 2,4-Dimethylphenol 06/04/20 06/05/20 μg/L U G+ 5.0 1.0 PS20F04A 06/05/20 SN20F04D GJP 29. Dimethyl Phthalate μg/L 06/04/20 U G+ 20 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 30. 2,4-Dinitrophenol μg/L U G+ 31.2,4-Dinitrotoluene μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 32. 2.6-Dinitrotoluene U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 33. Fluoranthene Ü G+ 1.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP μq/L 34. Fluorene U G+ μg/L 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP U L+ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP 35. Hexachlorobenzene μg/L 36. Hexachlorobutadiene U V+ $\mu g/L$ 5.0 1.0 06/04/20 PS20F04A 06/05/20 SN20F04D GJP

> 1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

37. Hexachlorocyclopentadiene

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

μq/L

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

1.0

5.0

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

06/05/20

PS20F04A

06/04/20

U G+

SN20F04D GJP



Ground Water

Order: 96319 Page: 96 of 100 Date: 06/19/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: Dup-MW Chain of Custody:

184649

Client Project Name:

1-10860

Sample No: Sample Matrix: Collect Date: Collect Time: 05/28/20

NA

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E				•	uot ID:	96319-016 Dup-MW	Matrix: G	round Water		
Method. EFA 3310C/EFA 0270E				Desc	sription.	•				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepa n P. Date	ration P. Batch	A. Date	nalysis A. Batch	Ini
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
39. Indeno(1,2,3-cd)pyrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
40. Isophorone	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	Gu
42. 2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G٠
43. 2-Methylphenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
‡ 44.3&4-Methylphenol	U	G+	μg/L	10	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	GJ
45. Naphthalene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
46. 2-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G٠
47.3-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
48. 4-Nitroaniline	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
50. 2-Nitrophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
51.4-Nitrophenol	U	V-	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G٠
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
55. Di-n-octyl Phthalate	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
56. 2,2'-Oxybis(1-chloropropane)	U	V-	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
57. Pentachlorophenol	U	G+	μg/L	20	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
58. Phenanthrene	U	G+	μg/L	2.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
59. Phenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
60. Pyrene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
61. Pyridine	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
62. 1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
63. 2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
64. 2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	06/04/20	PS20F04A	06/05/20	SN20F04D	G
pH, Electrometric				Aliaı	uot ID:	96319-016B	Matrix: G	round Water		
Method: EPA 9040C				•		Dup-MW		-		
						Prepa	ration	Ar	nalysis	
Darameter(a)	Dooult	\circ	Linita	Departing Limit	Dilution	D Doto	D Potob	A Data	A Dotob	la:

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

Units

pH Units

Result

12.4

Q

Н

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368

Dilution

1.0

P. Date

NA

P. Batch

NA

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

A. Date

Reporting Limit

-1.00

Parameter(s)

1. pH

A. Batch

06/03/20 20:59 WD20F03A JMK



Order: 96319 Page: 97 of 100 Date: 06/19/20

Applied Science & Technology, Sample Description: Dup-MW Chain of Custody: 184649 Client Identification: Inc. - Brighton 1-10860 05/28/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: NA Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 96319-016B Matrix: Ground Water Method: EPA 9056A **Description: Dup-MW** Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. PW20F05D WC20F05A CMB 1. Chloride 28000 μg/L 10000 1.0 06/06/20 06/06/20 Residue, Filterable (TDS) Aliquot ID: 96319-016A Matrix: Ground Water Method: SM 2540 C-2011 Description: Dup-MW Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Total Dissolved Solids 52000 WH20F03A 1400000 1.3 06/03/20 06/04/20 WH20F03A JMK μg/L Aliquot ID: 96319-016C Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Description: Dup-MW Method: SM 4500-NH3 G-2011 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Ammonia-N 1200 10 1.0 06/02/20 PW20F02A 06/02/20 WU20F02A VO μg/L

RSN: 96319-200619094841



Order: 96319 Page: 98 of 100 Date: 06/19/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: Trip Blank

Sample Matrix:

Chain of Custody:

184649

Client Project Name: 1-10860

Sample No:

Collect Date:
Collect Time:

05/28/20

NA

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable

Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D

Aliquot ID:

Blank: Trip

96319-017

Matrix: Blank: Trip

Description: Trip Blank

Method: EPA 5030C/EPA 8260D	Description: Trip Blank										
D	D	_	l laka	D # 11.5	D.1	Prepa			nalysis	Init	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	ır	
1. Acetone	U	V+	μg/L	50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	Jl	
2. Acrylonitrile	U		μg/L	2.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI	
3. Benzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI	
4. Bromobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JI	
5. Bromochloromethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
6. Bromodichloromethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
7. Bromoform	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
8. Bromomethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
9.2-Butanone	U		μg/L	25	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
10. n-Butylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
11. sec-Butylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
12. tert-Butylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
13. Carbon Disulfide	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
15. Chlorobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	·	
16. Chloroethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	·	
17. Chloroform	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	·	
18. Chloromethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	·	
19. 2-Chlorotoluene	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
20. 1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
21. Dibromochloromethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
22. Dibromomethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
23. 1,2-Dichlorobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
24. 1,3-Dichlorobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
25. 1,4-Dichlorobenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	·	
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
27. 1,1-Dichloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
28. 1,2-Dichloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
29. 1,1-Dichloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	J	
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	·	
32. 1,2-Dichloropropane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	·	
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A		
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A		
35. Ethylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A		
36. Ethylene Dibromide	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A		
37. 2-Hexanone		V+	μg/L	50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A		
		•	r9' -	- 00		30,02,20		30,02,20	. 220. 02/1	9	

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Blank: Trip

Order: 96319 99 of 100 Page: Date: 06/19/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: Trip Blank

Chain of Custody:

184649

1-10860 Client Project Name:

Sample No:

Collect Date:

05/28/20

Client Project No: 1-10860 Sample Matrix:

Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report)

NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

96319-017

Matrix: Blank: Trip

Method: EPA 5030C/EPA 8260D	Description: Trip Blank											
						Prepa	ration	A	nalysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.		
38. Isopropylbenzene	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
39. 4-Methyl-2-pentanone	U		μg/L	50	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
40. Methylene Chloride	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
‡ 41.2-Methylnaphthalene	U	V+	μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
42. MTBE	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
43. Naphthalene	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
44. n-Propylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
45. Styrene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
46. 1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
47. 1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
48. Tetrachloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
49. Toluene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
50. 1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
‡ 52.1,1,2-Trichloroethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
53. Trichloroethene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
54. Trichlorofluoromethane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
55. 1,2,3-Trichloropropane	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
56. 1,2,3-Trimethylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
57. 1,2,4-Trimethylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
58. 1,3,5-Trimethylbenzene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
59. Vinyl Chloride	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
60. m&p-Xylene	U		μg/L	2.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
61. o-Xylene	U		μg/L	1.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		
‡ 62. Xylenes	U		μg/L	3.0	1.0	06/02/20	VB20F02A	06/02/20	VB20F02A	JLM		



Analytical Laboratory Report Laboratory Project Number: 96319

96319 Order: Page: 100 of 100 Date: 06/19/20

Definitions/ Qualifiers:

- A: Spike recovery or precision unusable due to dilution.
- **B:** The analyte was detected in the associated method blank.
- E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J: The concentration is an estimated value.
- M: Modified Method
- U: The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

E1 : The reported value is estimated due to the presence of interference.

G+ : Recovery of the associated Surrogate Compound exceeds the upper control limit. Results may be biased high.

н : Hold time exceeded.

: Recovery in the associated laboratory sample (LCS) exceeds the lower control limit. Results may be biased low. L-: Recovery in the associated laboratory sample (LCS) exceeds the upper control limit. Results may be biased high. L+ LLV- : Recovery in the associated low-level continuing calibration verification sample (LLCCV) exceeds the lower control limit.

Results may be biased low.

LLV+ : Recovery in the associated low-level continuing calibration verification sample (LLCCV) exceeds the upper control limit.

Results may be biased high.

: Recovery in the associated continuing calibration verification sample (CCV) exceeds the lower control limit. Results Vmay be biased low.

: Recovery in the associated continuing calibration verification sample (CCV) exceeds the upper control limit. Results V+

may be biased high.

: Sample was diluted due to a sample matrix issue. **Y1**

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

RSN: 96319-200619094841



Wednesday, August 12, 2020

Fibertec Project Number: 97294

Project Identification: RTTR (1-10860) /1-10860

Submittal Date: 07/31/2020

Mr. Greg Oslosky
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Oslosky,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

Due to the pH being ≥12, sample -001 could not be analyzed for Low Level Mercury.

Please note that samples -001, -002, -005, -008, -009, -011, -012, -013, -014 and -016 for metals analysis arrived at the lab with a pH that exceeded criteria of ≤2. The pH for the noted samples ranged from 3-13.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Rikki Lott at 9:46 AM, Aug 12, 2020

For Daryl P. Strandbergh Laboratory Director

Enclosures



11766 E. Grand River

DCSID: G-610.19 (10/01/19)

8660 S. Mackinaw Trail

Brighton, MI 48116

Cadillac, MI 49601

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-001

Order: 97294 Page: 2 of 98 Date: 08/12/20

Applied Science & Technology, 184381 Client Identification: Sample Description: MW-100i-073020 Chain of Custody: Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Collect Date: Sample No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:15 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-001C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-100i-073020 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.86 mg/L 0.25 50 08/05/20 PW20H05B 08/05/20 WQ20H05A VO Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-001D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-100i-073020 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic 470 μg/L 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 2. Barium U 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 3. Chromium U μg/L 10 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 4. Copper 22 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH µg/L 5.Lead 24 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 6. Manganese U 10 T420H06A JLH 50 08/06/20 PT20H06B 08/06/20 μg/L 7. Nickel U μg/L 20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U μg/L 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 8. Selenium 9. Silver U μg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10 Vanadium 16 4 0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 11.Zinc U LLV+ 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L Mercury by CVAAS, Total Matrix: Ground Water Aliquot ID: 97294-001D Method: EPA 7470A Description: MW-100i-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Mercury 0.20 μg/L 0.20 1.0 08/04/20 PM20H04B 08/05/20 M720H05A AVC Polychlorinated Biphenyls (PCBs) Aliquot ID: 97294-001 Matrix: Ground Water Method: EPA 3510C/EPA 8082A Description: MW-100i-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Aroclor-1016 μg/L 0.20 1.0 08/05/20 PS20H05E 08/06/20 SO20H06A BDA 2. Aroclor-1221 U μg/L 0.20 1.0 08/05/20 PS20H05E 08/06/20 SO20H06A BDA П 0.20 PS20H05E 3. Aroclor-1232 μg/L 1.0 08/05/20 08/06/20 SO20H06A BDA μg/L 4. Aroclor-1242 U 0.20 1.0 08/05/20 PS20H05E 08/06/20 SO20H06A BDA U 5. Aroclor-1248 μg/L 0.20 1.0 08/05/20 PS20H05E 08/06/20 SO20H06A BDA 6. Aroclor-1254 U 0.20 1.0 08/05/20 PS20H05E 08/06/20 SO20H06A BDA μg/L U 7. Aroclor-1260 μg/L 0.20 1.0 08/05/20 PS20H05E 08/06/20 SO20H06A BDA 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388

F: (810) 220-3311

F: (231) 775-8584

T: (810) 220-3300

T: (231) 775-8368



Order: 97294 Page: 3 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-100i-073020

Ground Water

Chain of Custody:

184381

Client Project Name: R

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860

Sample Matrix:

Collect Time:

10:15

Sample Comments:

Definitions: Q: Qua

Polychlorinated Biphenyls (PCBs)

Method: EPA 3510C/EPA 8082A

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 97294-001 Matrix: Ground Water

Description: MW-100i-073020

					Prepa	ration	Δ	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
‡ 8. Aroclor-1262	U	μg/L	0.20	1.0	08/05/20	PS20H05E	08/06/20	SO20H06A BDA
‡ 9. Aroclor-1268	U	μg/L	0.20	1.0	08/05/20	PS20H05E	08/06/20	SO20H06A BDA

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 97294-001E

Matrix: Ground Water

Description: MW-100i-073020

						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
3.Benzene	20		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
10.n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
12.tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	14		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
23.1,2-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
24.1,3-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
25.1,4-Dichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
26. Dichlorodifluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
27.1,1-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
28.1,2-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
29.1,1-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

DCSID: G-610.19 (10/01/19)



Order: 97294 Page: 4 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100i-073020

Ground Water

Chain of Custody:

184381

Client Project Name: RT

RTTR (1-10860)

Sample No:
Sample Matrix:

Collect Date:
Collect Time:

07/30/20

10:15

Client Project No:

Sample Comments:

Definitions: Q: Qualit

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 97294-001E

Matrix: Ground Water

Description: MW-100i-073020

						Prepa		A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
30. cis-1,2-Dichloroethene	22		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
31. trans-1,2-Dichloroethene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
32.1,2-Dichloropropane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
33. cis-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
34. trans-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
35. Ethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
36. Ethylene Dibromide	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
37.2-Hexanone	U	V+	μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
38. Isopropylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
39.4-Methyl-2-pentanone	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
40. Methylene Chloride	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
41.2-Methylnaphthalene	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
42.MTBE	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
43. Naphthalene	75		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
44. n-Propylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
45. Styrene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
46.1,1,1,2-Tetrachloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
47.1,1,2,2-Tetrachloroethane	11		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
48. Tetrachloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
49. Toluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
50.1,2,4-Trichlorobenzene	22		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
51.1,1,1-Trichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
52.1,1,2-Trichloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
53. Trichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
54. Trichlorofluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
55.1,2,3-Trichloropropane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
56.1,2,3-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
57.1,2,4-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
58.1,3,5-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
59. Vinyl Chloride	22		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
60. m&p-Xylene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
61.o-Xylene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
62. Xylenes	U		μg/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K



Order: 97294 Page: 5 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100i-073020

Ground Water

Chain of Custody:

184381

Client Project Name: F

RTTR (1-10860)

Sample No:

Sample Matrix:

Collect Date:
Collect Time:

07/30/20

10:15

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-001 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-100i-073020

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepa P. Date	ration P. Batch	A. Date	nalysis A. Batch	In
1. Acenaphthene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G,
2. Acenaphthylene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
3. Aniline	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
4. Anthracene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
5. Azobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
18. Carbazole	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
23. Chrysene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
25. Dibenzofuran	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
28.2,4-Dimethylphenol	7.1		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
31.2,4-Dinitrotoluene	U	-	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
33. Fluoranthene	1.7		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
34. Fluorene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
35. Hexachlorobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	

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RSN: 97294-200812090936



Order: 97294 Page: 6 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-100i-073020

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

Sample Matrix:

Ground Water

Collect Time: 10:15

Sample Comments:

Definitions:

1-10860

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS	Aliquot ID:	97294-001	Matrix: Ground Water
Method: EPA 3510C/EPA 8270E	Description:	MW-100i-073020	
		Preparation	n Ar

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
38. Hexachloroethane	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
40. Isophorone	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
43.2-Methylphenol	15		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
44.3&4-Methylphenol	33		μg/L	10	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
45. Naphthalene	5.6		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
46.2-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
47.3-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
48.4-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
49. Nitrobenzene	U		μg/L	3.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
50.2-Nitrophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
51.4-Nitrophenol	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
55. Di-n-octyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
58. Phenanthrene	4.0		μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
59. Phenol	29		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
60. Pyrene	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
61. Pyridine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ

pH, Electrometric Aliquot ID: 97294-001A **Matrix: Ground Water** Method: EPA 9040C Description: MW-100i-073020

						Prepara	ation	An	alysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1.pH	9.80	Н	pH Units	-1.00	1.0	NA	NA	08/04/20 13:31	WD20H04A	AMW
‡ 2.Temperature	20		°C	1.0	1.0	NA	NA	08/04/20 13:31	WD20H04A	A AMW

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RSN: 97294-200812090936



1. Ammonia-N

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-001

Order: 97294 Page: 7 of 98 Date: 08/12/20

Applied Science & Technology, Sample Description: MW-100i-073020 Chain of Custody: 184381 Client Identification: Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Collect Date: Sample No: Client Project No: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:15 Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Inorganic Anions by IC Aliquot ID: 97294-001A Matrix: Ground Water Method: EPA 9056A Description: MW-100i-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. WC20H04A VO 1. Chloride 120000 μg/L 10000 5.0 08/05/20 PW20H03C 08/05/20 Residue, Filterable (TDS) Aliquot ID: 97294-001A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-100i-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit P. Date P. Batch A. Date A. Batch Dilution 1. Total Dissolved Solids 2800000 50000 WH20G03A 08/04/20 WH20G03A JMK μg/L 1.3 08/03/20 97294-001B Matrix: Ground Water Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: Description: MW-100i-073020 Method: SM 4500-NH3 G-2011 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init.

50

5.0

08/07/20

PW20H07A

08/07/20

WU20H07B AMW

RSN: 97294-200812090936

25000

μg/L



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-002

Order: 97294 Page: 8 of 98 Date: 08/12/20

Applied Science & Technology, Chain of Custody: 184381 Client Identification: Sample Description: MW-100s-073020 Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 08:55 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-002C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-100s-073020 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.46 mg/L 0.10 20 08/05/20 PW20H05B 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-002F Matrix: Ground Water Method: EPA 1631E Description: MW-100s-073020 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 45 4.9 M520H07A CJA 1. Mercury ng/L 9.9 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-002D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-100s-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic 8.8 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium 320 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L U 3. Chromium PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L 4. Copper U 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 5.Lead П μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese U μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U μg/L 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 9. Silver μg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium U μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc U LLV+ μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-002D Matrix: Ground Water Description: MW-100s-073020 Method: EPA 7470A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) Matrix: Ground Water Aliquot ID: 97294-002 Method: EPA 3510C/EPA 8082A Description: MW-100s-073020 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 97294 Page: 9 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-100s-073020

Ground Water

Chain of Custody:

184381

Client Project Name: R

RTTR (1-10860)

Sample No:
Sample Matrix:

Collect Date:

07/30/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Collect Time:

t Time: **08:55**

Polychlorinated Biphenyls (PCBs)

Aliquot ID: 97294-002

Matrix: Ground Water

Method: EPA 3510C/EPA 8082A Description: MW-100s-073020

						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/07/20	SO20H07B BDA
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/07/20	SO20H07B BDA
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/07/20	SO20H07B BDA
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/07/20	SO20H07B BD
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/07/20	SO20H07B BDA
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/07/20	SO20H07B BDA
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/07/20	SO20H07B BDA
8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/07/20	SO20H07B BDA
9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/07/20	SO20H07B BDA

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-002E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-100s-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
3. Benzene	19		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
10. n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
12. tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

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Order: 97294 Page: 10 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-100s-073020

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time:

08:55

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

97294-002E

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D

Description: MW-100s-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
23.1,2-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
24.1,3-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
25.1,4-Dichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
26. Dichlorodifluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
27.1,1-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
28.1,2-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
29.1,1-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
30. cis-1,2-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
31. trans-1,2-Dichloroethene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
32.1,2-Dichloropropane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
33. cis-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
34. trans-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
35. Ethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
36. Ethylene Dibromide	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
37.2-Hexanone	U	V+	μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
38. Isopropylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
39.4-Methyl-2-pentanone	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
40. Methylene Chloride	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
41.2-Methylnaphthalene	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
42.MTBE	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
43. Naphthalene	61		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
44. n-Propylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
45. Styrene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
46.1,1,1,2-Tetrachloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
47.1,1,2,2-Tetrachloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
48. Tetrachloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
49. Toluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
50.1,2,4-Trichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
51.1,1,1-Trichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
52.1,1,2-Trichloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
53. Trichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
54. Trichlorofluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
55.1,2,3-Trichloropropane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
56.1,2,3-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	
57.1,2,4-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	
58.1,3,5-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	
59. Vinyl Chloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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Order: 97294 Page: 11 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-100s-073020

Chain of Custody:

184381

08:55

Client Project Name: RTTR

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860 Sample Matrix:

Ground Water Collect Time:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-002E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-100s-073020

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.	
60.m&p-Xylene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM	
61.o-Xylene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM	
‡ 62. Xylenes	U		μg/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM	

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-002 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-100s-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
1. Acenaphthene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
2. Acenaphthylene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
3. Aniline	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
4. Anthracene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
5. Azobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
6.Benzo(a)anthracene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
9.Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
18. Carbazole	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
23. Chrysene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
25. Dibenzofuran	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
28.2,4-Dimethylphenol	30		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G٠

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 12 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-100s-073020

Ground Water

Aliquot ID:

97294-002

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

Matrix: Ground Water

07/30/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS

Sample Matrix:

Collect Time: 08:55

Method: EPA 3510C/EPA 8270E Description: MW-100s-073020

						Preparation		Analysis		
'arameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
33. Fluoranthene	1.2		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
34. Fluorene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
35. Hexachlorobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	C
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
38. Hexachloroethane	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
40. Isophorone	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
42.2-Methylnaphthalene	5.4		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
43.2-Methylphenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
44.3&4-Methylphenol	46		μg/L	10	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
45. Naphthalene	59		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
46.2-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
47.3-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
48.4-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
49. Nitrobenzene	U		μg/L	3.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	-
50.2-Nitrophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
51.4-Nitrophenol	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	-
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	-
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
55. Di-n-octyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
58. Phenanthrene	5.4		μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
59. Phenol	23		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
60. Pyrene	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
61. Pyridine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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Order: 97294 Page: 13 of 98 Date: 08/12/20

Applied Science & Technology, MW-100s-073020 Chain of Custody: 184381 Client Identification: Sample Description: Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 08:55 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. pH, Electrometric Aliquot ID: 97294-002A **Matrix: Ground Water** Method: EPA 9040C Description: MW-100s-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 08/04/20 20:56 WD20H04D JMK 1.pH 12.4 Н pH Units -1.00 1.0 NA NA ‡ 2.Temperature 22 °C 10 1.0 NA NA 08/04/20 20:56 W D20H04D JMK 97294-002A Matrix: Ground Water Inorganic Anions by IC Aliquot ID: Method: EPA 9056A Description: MW-100s-073020 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution P. Date A. Batch Result P. Batch A. Date Init. 10000 WC20H03A VO 1. Chloride 86000 μg/L 1.0 08/04/20 PW20H03C 08/04/20 Residue, Filterable (TDS) Aliquot ID: 97294-002A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-100s-073020 Preparation Analysis Q Units Reporting Limit P. Date Parameter(s) Result Dilution P. Batch A. Batch Init. A. Date 1. Total Dissolved Solids 1700000 μg/L 50000 1.3 08/03/20 WH20G03A 08/04/20 WH20G03A JMK Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: 97294-002B Matrix: Ground Water Method: SM 4500-NH3 G-2011 Description: MW-100s-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 8100 1. Ammonia-N μg/L 10 1.0 08/07/20 PW20H07A 08/07/20 WU20H07B AMW

RSN: 97294-200812090936



Order: 97294 Page: 14 of 98 Date: 08/12/20

Applied Science & Technology, Chain of Custody: 184381 Client Identification: Sample Description: MW-101-073120 Inc. - Brighton RTTR (1-10860) 07/31/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:39 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-003C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-101-073120 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 2.0 mg/L 0.50 100 08/05/20 PW20H05B 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-003F Matrix: Ground Water Method: EPA 1631E Description: MW-101-073120 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 14 0.99 M520H07A CJA 1. Mercury ng/L 2.0 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-003D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-101-073120 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic 5.3 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium 110 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 3. Chromium U PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L 4. Copper U 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 5.Lead П μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese U μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U μg/L 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 9. Silver μg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium U μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc U LLV+ μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-003D Matrix: Ground Water Description: MW-101-073120 Method: EPA 7470A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) Aliquot ID: Matrix: Ground Water 97294-003 Method: EPA 3510C/EPA 8082A Description: MW-101-073120 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 97294 Page: 15 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-101-073120

Chain of Custody:

184381

Client Project Name: RTTR

RTTR (1-10860)

Sample No:
Sample Matrix:

Collect Date:

07/31/20

10:39

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A Aliquot ID:

Ground Water

97294-003

Matrix: Ground Water

Description: MW-101-073120

WELLIOU. EFA 33 TOC/EFA 0002A	Description. WW-101-073120											
						Prepa	ration	Δ	nalysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.			
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
‡ 8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
‡ 9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			

Volatile Organic Compounds (VOCs) by GC/MS

Method: EPA 5030C/EPA 8260D

Aliquot ID:

97294-003E

Matrix: Ground Water

Description: MW-101-073120

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
3. Benzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
10.n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
12. tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

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Order: 97294 Page: 16 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-101-073120

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/31/20

Client Project No:

Sample Matrix: **Ground Water** Collect Time:

10:39

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D

Aliquot ID: 97294-003E Description: MW-101-073120 **Matrix: Ground Water**

					Prepa	ration	Α	nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
23.1,2-Dichlorobenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
24.1,3-Dichlorobenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	, K
25.1,4-Dichlorobenzene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
26. Dichlorodifluoromethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	. K
27.1,1-Dichloroethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
28.1,2-Dichloroethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
29.1,1-Dichloroethene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
30. cis-1,2-Dichloroethene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	٠K
31. trans-1,2-Dichloroethene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
32.1,2-Dichloropropane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	، K
33. cis-1,3-Dichloropropene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
34. trans-1,3-Dichloropropene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	٠K
35. Ethylbenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
36. Ethylene Dibromide	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	٠k
37.2-Hexanone	U	V+ μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	k
38. Isopropylbenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	, ŀ
39.4-Methyl-2-pentanone	U	μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	, ł
40. Methylene Chloride	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	٠ŀ
41.2-Methylnaphthalene	U	μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
42.MTBE	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	, ŀ
43. Naphthalene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
44. n-Propylbenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	, k
45. Styrene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
46.1,1,1,2-Tetrachloroethane	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	٠ŀ
47.1,1,2,2-Tetrachloroethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
48. Tetrachloroethene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	, k
49. Toluene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
50.1,2,4-Trichlorobenzene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	. k
51.1,1,1-Trichloroethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
52.1,1,2-Trichloroethane	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	٠ŀ
53. Trichloroethene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
54. Trichlorofluoromethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	٠ŀ
55.1,2,3-Trichloropropane	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	k
56.1,2,3-Trimethylbenzene	28	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
57.1,2,4-Trimethylbenzene	42	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
58.1,3,5-Trimethylbenzene	13	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
59. Vinyl Chloride	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK

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Order: 97294 Page: 17 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-101-073120

Chain of Custody:

184381

Client Project Name: R

RTTR (1-10860)

Sample No:

Collect Date:

07/31/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time: 10:39

Sample Comments:

Definitions: Q: Qualif

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-003E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-101-073120

						Prepa	ration	Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
60. m&p-Xylene	24		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
61.o-Xylene	12		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 62. Xylenes	36		μg/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-003 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-101-073120

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acenaphthene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
2. Acenaphthylene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
3. Aniline	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
4. Anthracene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
5. Azobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
8.Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
9.Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
10.Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
18. Carbazole	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
23. Chrysene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
25. Dibenzofuran	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ

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Order: 97294 Page: 18 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-101-073120

Chain of Custody:

184381

Client Project Name: R

RTTR (1-10860)

Sample No:

Collect Date:

07/31/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time: 10:39

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS	Aliquot ID:	97294-003	Matrix: Ground Water
Method: EPA 3510C/EPA 8270E	Description:	MW-101-073120	
		Preparation	n Ana

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
31.2,4-Dinitrotoluene	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
33. Fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
34. Fluorene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
35. Hexachlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
38. Hexachloroethane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
39. Indeno(1,2,3-cd)pyrene	U	V+	μg/L	2.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
40. Isophorone	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
43.2-Methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
45. Naphthalene	7.1		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
46.2-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
47.3-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
48.4-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
49. Nitrobenzene	U		μg/L	3.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
50.2-Nitrophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
51.4-Nitrophenol	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
55. Di-n-octyl Phthalate	U	L+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
58. Phenanthrene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
59. Phenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
60. Pyrene	U	L+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
61. Pyridine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 19 of 98 Date: 08/12/20

Applied Science & Technology, Chain of Custody: 184381 Client Identification: Sample Description: MW-101-073120 Inc. - Brighton RTTR (1-10860) 07/31/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:39 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. pH, Electrometric Aliquot ID: 97294-003A **Matrix: Ground Water** Method: EPA 9040C Description: MW-101-073120 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 08/04/20 20:59 W D20H04D JMK 1.pH 11.5 Н pH Units -1.00 1.0 NA NA ‡ 2.Temperature 22 °C 10 1.0 NA NA 08/04/20 20:59 W D20H04D JMK 97294-003A Matrix: Ground Water Inorganic Anions by IC Aliquot ID: Method: EPA 9056A Description: MW-101-073120 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution P. Date A. Batch Result P. Batch A. Date Init. 58000 10000 WC20H03A VO 1. Chloride μg/L 1.0 08/04/20 PW20H03C 08/04/20 Residue, Filterable (TDS) Aliquot ID: 97294-003A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-101-073120 Preparation Analysis Q Units Reporting Limit P. Date Parameter(s) Result Dilution P. Batch A. Batch Init. A. Date 1. Total Dissolved Solids 440000 μg/L 50000 1.3 08/03/20 WH20G03A 08/04/20 WH20G03A JMK Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: 97294-003B Matrix: Ground Water Method: SM 4500-NH3 G-2011 Description: MW-101-073120 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 3100 1. Ammonia-N μg/L 10 1.0 08/07/20 PW20H07A 08/07/20 WU20H07B AMW



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-004

Order: 97294 Page: 20 of 98 Date: 08/12/20

Applied Science & Technology, MW-102D-073020 Chain of Custody: 184381 Client Identification: Sample Description: Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 11:30 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-004C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-102D-073020 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.012 mg/L 0.0050 1.0 08/05/20 PW20H05B 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-004F Matrix: Ground Water Method: EPA 1631E Description: MW-102D-073020 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 8.0 0.50 M520H07A CJA 1. Mercury ng/L 0.99 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-004D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-102D-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic U 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium 110 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 3. Chromium U PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L 4.5 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 4. Copper μg/L 5.Lead 4.5 μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese 330 μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U μg/L 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 9. Silver µg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium 12 μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc U LLV+ μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-004D Matrix: Ground Water Description: MW-102D-073020 Method: EPA 7470A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) Matrix: Ground Water Aliquot ID: 97294-004 Method: EPA 3510C/EPA 8082A Description: MW-102D-073020 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584 8660 S. Mackinaw Trail



Order: 97294 Page: 21 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-102D-073020

Ground Water

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No: Sample Matrix: Collect Date: Collect Time: 07/30/20

11:30

Client Project No: Sample Comments:

Definitions:

Polychlorinated Biphenyls (PCBs)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 97294-004 **Matrix: Ground Water**

Method: EPA 3510C/EPA 8082A Description: MW-102D-073020

						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
\$. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
‡ 9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-004E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-102D-073020

						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
3. Benzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
4. Bromobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
5. Bromochloromethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
6. Bromodichloromethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
7. Bromoform	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
8. Bromomethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
9.2-Butanone	U	V+	μg/L	25	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
10. n-Butylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
11. sec-Butylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
12.tert-Butylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
13. Carbon Disulfide	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
15. Chlorobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
16. Chloroethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
17. Chloroform	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
18. Chloromethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
19.2-Chlorotoluene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
21. Dibromochloromethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
22. Dibromomethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs

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Order: 97294 Page: 22 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-102D-073020

Ground Water

Chain of Custody:

184381

11:30

Client Project Name: RTTR (1-10860)

(1-10860) Sample No:

Collect Date:
Collect Time:

07/30/20

Client Project No:
Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by GC/MS	Aliquot ID:	97294-004E	Matrix: Ground Water
Method: EPA 5030C/EPA 8260D	Description:	MW-102D-073020	

						Prepa	ration	A	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
24.1,3-Dichlorobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
31.trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
35. Ethylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
36. Ethylene Dibromide	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
37.2-Hexanone	U	V+	μg/L	50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
38. Isopropylbenzene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
39.4-Methyl-2-pentanone	U		μg/L	50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
40. Methylene Chloride	U	В	μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
41.2-Methylnaphthalene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
42.MTBE	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
43. Naphthalene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
44. n-Propylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
45. Styrene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
46.1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
47.1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
48. Tetrachloroethene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
49. Toluene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
50.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
52.1,1,2-Trichloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
53. Trichloroethene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
54. Trichlorofluoromethane	U		μg/L	2.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
55.1,2,3-Trichloropropane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
56.1,2,3-Trimethylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
57.1,2,4-Trimethylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
58.1,3,5-Trimethylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
59. Vinyl Chloride	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC

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Order: 97294 23 of 98 Page: Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-102D-073020

Chain of Custody:

184381

RTTR (1-10860) Client Project Name:

Sample No:

Sample Matrix:

Collect Date:

07/30/20

Client Project No:

Ground Water Collect Time: 11:30

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

97294-004E

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-102D-073020

					Prepa	aration	A	Analysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
60. m&p-Xylene	U	μg/L	2.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WCS
61.o-Xylene	U	μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WCS
‡ 62. Xylenes	U	μg/L	3.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WCS

Base/Neutral/Acid Semivolatiles by GC/MS

Aliquot ID:

97294-004

Matrix: Ground Water

Method: EPA 3510C/EPA 8270E

Description: MW-102D-073020

						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Acenaphthene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
2. Acenaphthylene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
3. Aniline	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
4. Anthracene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
5. Azobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
10.Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
18.Carbazole	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
23. Chrysene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
25. Dibenzofuran	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 24 of 98 Page: Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-102D-073020

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

11:30

Sample Comments:

Definitions:

Client Project No:

Sample Matrix:

Ground Water Collect Time:

Base/Neutral/Acid Semivolatiles by GC/MS

Aliquot ID:

97294-004

Matrix: Ground Water

Base/Hourial/Hola Committed and By Commo				7 4 19	uot .D.	0.204 004	matrix. C	rouna maior		
Method: EPA 3510C/EPA 8270E				Des	cription:	MW-102D-073020				
						Prepar	ation	Aı	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
33. Fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
34. Fluorene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
35. Hexachlorobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
38. Hexachloroethane	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
40. Isophorone	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
43.2-Methylphenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
45. Naphthalene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
46.2-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
47.3-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
48.4-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
49. Nitrobenzene	U		μg/L	3.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
50.2-Nitrophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
51.4-Nitrophenol	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
55. Di-n-octyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
58. Phenanthrene	U		μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
59. Phenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
60. Pyrene	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
61. Pyridine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
, ,	_		1.3	***	-					

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 25 of 98 Date: 08/12/20

Client Identification:	Applied Science & Techr Inc Brighton	nology,		Sample De	scription: MW-	02D-0730	20	Chair	of Custody:	184381	
Client Project Name:	RTTR (1-10860)			Sample No	:			Colle	ct Date:	07/30/20	
Client Project No:	1-10860			Sample Ma	trix: Grou	nd Water		Colle	ct Time:	11:30	
Sample Comments:											
Definitions:	Q: Qualifier (see definition	ns at end o	of repo	ort) NA: Not	Applicable ‡: F	arameter r	not included in NEL	AC Scope of AC	Analysis.		
pH, Electrometric					Ali	quot ID:	97294-004A	Matrix: (Ground Water		
Method: EPA 9040C					De	scription:	MW-102D-073020)			
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	Prepar n P. Date	ation P. Batch	Ar A. Date	alysis A. Batch	Init.
1.pH		8.42	Н	pH Units	-1.00	1.0	NA	NA	08/04/20 13:48	WD20H04A	AMW
‡ 2.Temperature		20		°C	1.0	1.0	NA	NA	08/04/20 13:48	WD20H04A	AMW
Inorganic Anions by Method: EPA 9056A	IC					quot ID:	97294-004A MW-102D-073020		Ground Water		
						-	Prepar	ation	Ar	alysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	lnit.
1. Chloride		16000		μg/L	10000	1.0	08/04/20	PW20H03C	08/04/20	WC20H03A	VO
Residue, Filterable (•					quot ID:	97294-004A MW-102D-073020		Ground Water		
							Prepar		Ar	alysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Total Dissolved	Solids	370000		μg/L	50000	1.3	08/03/20	WH20G03A	08/04/20	WH20G03A	JMK
Nitrogen, Ammonia (quot ID:	97294-004B MW-102D-073020		Ground Water		
							Prepar			alysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	n P. Date	P. Batch	A. Date	A. Batch	Init.
1. Ammonia-N		150		μg/L	10	1.0	08/07/20	PW20H07A	08/07/20	WU20H07B	AMW

RSN: 97294-200812090936



Order: 97294 Page: 26 of 98 Date: 08/12/20

Applied Science & Technology, Chain of Custody: 184381 Client Identification: Sample Description: MW-103-073020 Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 12:10 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-005C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-103-073020 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 2.4 mg/L 0.25 50 08/05/20 PW20H05B 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-005F Matrix: Ground Water Method: EPA 1631E Description: MW-103-073020 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 40 5.0 M520H07A CJA 1. Mercury ng/L 9.9 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-005D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-103-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic U 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium 380 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 3. Chromium U PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L U 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 4. Copper μg/L 5.Lead П μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese U μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U μg/L 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 9. Silver μg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium U μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc U LLV+ μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-005D Matrix: Ground Water Description: MW-103-073020 Method: EPA 7470A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) Matrix: Ground Water Aliquot ID: 97294-005 Method: EPA 3510C/EPA 8082A Description: MW-103-073020 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 97294 Page: 27 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-103-073020

Ground Water

Chain of Custody:

184381

Client Project Name: R

Polychlorinated Biphenyls (PCBs)

RTTR (1-10860)

Sample No:
Sample Matrix:

Collect Date:
Collect Time:

07/30/20 12:10

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 97294-005 Matrix: Ground Water

Method: EPA 3510C/EPA 8082A Description: MW-103-073020

					-				
						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-005E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-103-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
3. Benzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
10. n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
12.tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 28 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-103-073020

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time: 12:10

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D

Aliquot ID: 97294-005E Description: MW-103-073020 **Matrix: Ground Water**

Method: EPA 5030C/EPA 8260D	Description: MW-103-073020								
					Prepa			nalysis	
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	ln
23.1,2-Dichlorobenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
24.1,3-Dichlorobenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
25.1,4-Dichlorobenzene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	، KC
26. Dichlorodifluoromethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
27.1,1-Dichloroethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	، KC
28.1,2-Dichloroethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	، K(
29.1,1-Dichloroethene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ι K(
30. cis-1,2-Dichloroethene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	، K
31. trans-1,2-Dichloroethene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ι K
32.1,2-Dichloropropane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	، K
33. cis-1,3-Dichloropropene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ι K(
34. trans-1,3-Dichloropropene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	، K
35. Ethylbenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
36. Ethylene Dibromide	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	١K
37.2-Hexanone	U	V+ μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
38. Isopropylbenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	١K
39.4-Methyl-2-pentanone	U	μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
40. Methylene Chloride	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	١K
41.2-Methylnaphthalene	U	μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
42.MTBE	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	١K
43. Naphthalene	22	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
44. n-Propylbenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	١K
45. Styrene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
46.1,1,1,2-Tetrachloroethane	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	١K
47.1,1,2,2-Tetrachloroethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
48. Tetrachloroethene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
49. Toluene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
50.1,2,4-Trichlorobenzene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
51.1,1,1-Trichloroethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
52.1,1,2-Trichloroethane	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	١K
53. Trichloroethene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
54. Trichlorofluoromethane	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
55.1,2,3-Trichloropropane	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
56.1,2,3-Trimethylbenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	١K
57.1,2,4-Trimethylbenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
58.1,3,5-Trimethylbenzene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
59. Vinyl Chloride	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 29 of 98 Page: Date: 08/12/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-103-073020

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time:

12:10

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

97294-005E

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D

Description: MW-103-073020

						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
60.m&p-Xylene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
61.o-Xylene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
‡ 62. Xylenes	U		μg/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM

Base/Neutral/Acid Semivolatiles by GC/MS

Aliquot ID: 97294-005

Matrix: Ground Water

Method: EPA 3510C/EPA 8270E

Description: MW-103-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Acenaphthene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
2. Acenaphthylene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
3. Aniline	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
4. Anthracene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
5. Azobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
10.Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
18. Carbazole	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
23. Chrysene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
25. Dibenzofuran	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
28.2,4-Dimethylphenol	36		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF

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Order: 97294 Page: 30 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-103-073020

Ground Water

Chain of Custody:

184381

Client Project Name: RTTR (

RTTR (1-10860)

Sample No:

Sample Matrix:

Collect Date:

07/30/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

12:10

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-005 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-103-073020

						Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	I
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	C
30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	(
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	, ,
33. Fluoranthene	1.1		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
34. Fluorene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
35. Hexachlorobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
38. Hexachloroethane	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
40. Isophorone	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
42.2-Methylnaphthalene	12		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
43.2-Methylphenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
44.3&4-Methylphenol	U		μg/L	10	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
45. Naphthalene	22		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
46.2-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
47.3-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
48.4-Nitroaniline	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
49. Nitrobenzene	U		μg/L	3.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	
50.2-Nitrophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
51.4-Nitrophenol	U		μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D)
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
55. Di-n-octyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
58. Phenanthrene	5.2		μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
59. Phenol	6.3		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
60. Pyrene	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
61. Pyridine	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	,

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Order: 97294 Page: 31 of 98 Date: 08/12/20

Client Identification:	Applied Science & Technology, Inc Brighton		Sample De	scription: MW-10	3-073020		Chair	n of Custody:	184381	
Client Project Name:	RTTR (1-10860)		Sample No				Colle	ct Date:	07/30/20	
Client Project No:	1-10860		Sample Ma	trix: Ground	d Water		Colle	ct Time:	12:10	
Sample Comments:										
Definitions:	Q: Qualifier (see definitions at end of	of rep	ort) NA: Not	Applicable ‡: Pa	rameter n	ot included in NEL	AC Scope of	Analysis.		
pH, Electrometric				Aliq	uot ID:	97294-005A	Matrix: (Ground Water		
Method: EPA 9040C				Des	cription:	MW-103-073020				
						Prepai			alysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1.pH	12.4	Н	pH Units	-1.00	1.0	NA	NA	08/04/20 21:01		
‡ 2.Temperature	22		°C	1.0	1.0	NA	NA	08/04/20 21:01	WD20H04D	JMK
Inorganic Anions by	IC			Aliq	uot ID:	97294-005A	Matrix:	Ground Water		
Method: EPA 9056A				Des	cription:	MW-103-073020				
						Prepai			alysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Chloride	22000		μg/L	10000	1.0	08/04/20	PW20H03C	08/04/20	WC20H03A	VO
Residue, Filterable (TDS)			Aliq	uot ID:	97294-005A	Matrix: (Ground Water		
Method: SM 2540 C-	2011			Des	cription:	MW-103-073020				
						D	ration	Δn	alysis	
Parameter(s)						Prepai	ration		/	
	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Total Dissolved		Q	Units µg/L	Reporting Limit 50000	Dilution			A. Date		
	Solids 1400000 (Auto Analyzer)	Q		50000 Aliq	1.3 uot ID:	P. Date	P. Batch WH20G03A	A. Date	A. Batch	
1. Total Dissolved	Solids 1400000 (Auto Analyzer)	Q		50000 Aliq	1.3 uot ID:	P. Date 08/03/20 97294-005B	P. Batch WH20G03A Matrix: 0	A. Date 08/04/20 Ground Water	A. Batch	
1. Total Dissolved	Solids 1400000 (Auto Analyzer)	Q		50000 Aliq	1.3 uot ID:	P. Date 08/03/20 97294-005B MW-103-073020 Prepar	P. Batch WH20G03A Matrix: 0	A. Date 08/04/20 Ground Water	A. Batch WH20G03A	

RSN: 97294-200812090936



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-006

Order: 97294 Page: 32 of 98 Date: 08/12/20

Applied Science & Technology, Chain of Custody: 184381 Client Identification: Sample Description: MW-104-073020 Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 15:40 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-006C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-104-073020 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.012 mg/L 0.0050 1.0 08/05/20 PW20H05B 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-006F Matrix: Ground Water Method: EPA 1631E Description: MW-104-073020 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 18 2.0 M520H07A CJA 1. Mercury ng/L 3.9 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-006D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-104-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic 50 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium U 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L U 3. Chromium PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L U 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 4. Copper μg/L 5.Lead П μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese U μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L U 9. Silver μg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium 7.4 μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc 120 μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-006D Matrix: Ground Water Description: MW-104-073020 Method: EPA 7470A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) Matrix: Ground Water Aliquot ID: 97294-006 Method: EPA 3510C/EPA 8082A Description: MW-104-073020 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 97294 33 of 98 Page: Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-104-073020

Ground Water

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No: Sample Matrix: Collect Date:

07/30/20

Client Project No:

Sample Comments:

Collect Time:

15:40

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) 97294-006 **Matrix: Ground Water** Aliquot ID: Method: EPA 3510C/EPA 8082A Description: MW-104-073020

						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BD
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BD
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BD
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BD
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BD
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BD
8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BD
9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BD/

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-006E Matrix: Ground Water Method: EPA 5030C/EPA 8260D Description: MW-104-073020

						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
3. Benzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
10.n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
12. tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM

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T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 34 of 98 Page: Date: 08/12/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-104-073020

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860 Sample Matrix:

Ground Water

Collect Time:

15:40

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID:

97294-006E Description: MW-104-073020 **Matrix: Ground Water**

Method: EPA 5030C/EPA 8260D

Wethod: EPA 5030C/EPA 8260D				DCS	op	WW-104-073020				
						Prepar			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	ln
23.1,2-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
24.1,3-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
25.1,4-Dichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
26. Dichlorodifluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
27.1,1-Dichloroethane	17		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
28.1,2-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
29.1,1-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
30. cis-1,2-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
31. trans-1,2-Dichloroethene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
32.1,2-Dichloropropane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
33. cis-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
34. trans-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
35. Ethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
36. Ethylene Dibromide	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
37.2-Hexanone	U	V+	μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
38. Isopropylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
39.4-Methyl-2-pentanone	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
40. Methylene Chloride	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
41.2-Methylnaphthalene	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
42.MTBE	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
43. Naphthalene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
44. n-Propylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
45. Styrene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
46.1,1,1,2-Tetrachloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
47.1,1,2,2-Tetrachloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
48. Tetrachloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
49. Toluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
50.1,2,4-Trichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
51.1,1,1-Trichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
52.1,1,2-Trichloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
53. Trichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
54. Trichlorofluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
55.1,2,3-Trichloropropane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
56.1,2,3-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
57.1,2,4-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
58.1,3,5-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K

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Order: 97294 Page: 35 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-104-073020

Chain of Custody:

184381

Client Project Name: R

RTTR (1-10860)

Sample No: Sample Matrix: Collect Date:

07/30/20

Client Project No:

1-10860

Ground Water

Collect Time: 15:40

Sample Comments:

Definitions: Q: Qualifier

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-006E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-104-073020

						Preparation		Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
60. m&p-Xylene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
61.o-Xylene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
‡ 62. Xylenes	U		μg/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-006 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-104-073020

Parameter(s)						Preparation		Analysis		
	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acenaphthene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
3. Aniline	U	G+	μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
4. Anthracene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
5. Azobenzene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
6.Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
7.Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
8.Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
15.4-Bromophenyl Phenylether	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
18. Carbazole	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
19.4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
20.2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
22.4-Chlorophenyl Phenylether	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
23. Chrysene	U	G+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
26.2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
28.2,4-Dimethylphenol	430	G+	μg/L	20	20	08/04/20	PS20H04D	08/08/20	S620H07D	GJ

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Order: 97294 Page: 36 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-104-073020

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860) Sample No: Collect Date:

07/30/20

Client Project No: Sample Comments:

Definitions:

Sample Matrix: **Ground Water** Collect Time:

15:40

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-006 **Matrix: Ground Water** Method: EPA 3510C/EPA 8270E Description: MW-104-073020

29. Dimethyl Phthalate							Preparation		Analysis		
30.2,4-Dinitrophenol U V- µg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 31.2,4-Dinitrotoluene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 32.2,6-Dinitrotoluene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 33.Fluoranthene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 33.Fluoranthene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 34.Fluorene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 34.Fluorene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 36.Hexachlorobutadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 36.Hexachlorobutadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 37.Hexachlorobyclopentadiene U V+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 37.Hexachlorobyclopentadiene U V+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 39.Indeno(1,2,3-cd)pyrene U L+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 39.Indeno(1,2,3-cd)pyrene U L+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 40.Isophorone U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 40.Isophorone U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 42.2-Methy/naphthalene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 43.2-Methy/henphol 8.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 43.2-Methy/henphol 8.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 43.2-Methy/henphol 8.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 43.2-Methy/henphol 8.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 45.Naphthalene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 45.Naphthalene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 45.Naphthalene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 45.Naphthalene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 51.4-Nitroaniline U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 51.4-Nitroaniline U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 51.4-Nitroaniline U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S20H07D G 51.4-Nitroaniline U G+ µg/L 5.0 1.0	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
31.2,4-Dinitrotoluene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 32.2,6-Dinitrotoluene U G+ µg/L 1.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 32.2,6-Dinitrotoluene U G+ µg/L 1.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 34.Fluorene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 35. Hexachlorobracene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 35. Hexachlorobyclopentadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 37. Hexachlorobyclopentadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 37. Hexachlorobyclopentadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 37. Hexachlorobyclopentadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 38. Hexachlorocyclopentadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 37. Hexachlorocyclopentadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 40. Isophorone U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 41. 2-Methyl-4,6-dinitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 42. 2-Methyl-4,6-dinitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 42. 2-Methyl-4,6-dinitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43. 3-Methyl-phenol 8.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 44. 3-Methyl-phenol 45. Naphthalene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 45. Naphthalene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 46. Naphthalene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 5. Nahirosodihenenine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 5. Nahirosodihenenine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 5. Nahirosodihenenine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 5. Nahirosodihenenine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 5. Nahirosodihenenine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 5. Nahirosodihenenine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 5. Nahiros	29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
32.2,6-Dinitrotoluene U G+ µg/L 1.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 33.Fluoranthene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 33.Fluoranthene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 35.Flexachlorobenzene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 35.Flexachlorobenzene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 36.Flexachlorobenzene U C+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 37.Flexachlorocyclopentadiene U V- µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 37.Flexachlorocyclopentadiene U V- µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 39.Indeno(1,2,3-cd)pyrene U L+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 39.Indeno(1,2,3-cd)pyrene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 40.Isophorone U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 42.2-Methylphenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 42.2-Methylphenol B.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methylphenol B.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methylphenol B.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methylphenol B.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methylphenol B.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methylphenol B.8 6+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 5620H07D	30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
33.Fluoranthene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 34.Fluorene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 34.Fluorene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 36.Hexachlorobutadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 36.Hexachlorocyclopentadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 37.Hexachlorocyclopentadiene U V- µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 37.Hexachlorocyclopentadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 38.Hexachlorocyclopentadiene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 39.Indenof(1_3-0-d)pyrene U L+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 40.Isophorone U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 41.2-Methyl-4,6-dinitrophenol U G+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 42.2-Methyl-phaphthalene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methyl-phenol 8.8 G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methyl-phenol 78 G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 44.3-4-Methyl-phenol 78 G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 45.2-Nitroaniline U G+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 46.2-Nitroaniline U G+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 47.3-Nitroaniline U G+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 48.4-Nitroaniline U G+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 50.2-Nitroaniline U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 51.4-Nitroaniline U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 52.N-Nitroaniline U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 53.N-Nitroaniline U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 53.N-Nitroaniline U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 54.N-Nitroaniline U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 55.2-Nitroaniline U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56.2-2-Oxybis(1-chloropropane) U G+ µg/L 5.0 1.0 08/04/	31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
34.Fluorene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 35.Hexachlorobenzene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 37.Hexachlorobytadiene U V- µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 38.Hexachlorobytadiene U V- µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 38.Hexachlorobytadiene U V- µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 38.Hexachlorobytadiene U V- µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 38.Hexachlorobytadiene U V- µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 39.Indenol1/2,3-cdjpyrene U L+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 41.2-Methyl-4,6-dinitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 41.2-Methyl-4,6-dinitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 42.2-Methyl-4,6-dinitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 43.2-Methyl-phenol 8.8 G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 43.2-Methyl-phenol 8.8 G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45.Naphthalene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45.Naphthalene U G+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45.Naphthalene U G+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45.Naphthalene U G+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45.Naphthalene U G+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45.Nitrophenol U G+ µg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45.Nitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.Nitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.Nitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.Nitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.Nitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.Nitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.Nitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.Nitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S62	32.2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
35. Hexachlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 36. Hexachlorobutadiene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 37. Hexachlorocyclopentadiene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 37. Hexachlorocyclopentadiene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 39. Indeno(1,2,3-od)pyrene U L+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 39. Indeno(1,2,3-od)pyrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 39. Indeno(1,2,3-od)pyrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 41. 2-Methyl-4,6-dinitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 41. 2-Methyl-4,6-dinitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 43. 2-Methylphenol 8.8 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 43. 2-Methylphenol 78 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 43. 2-Methylphenol 78 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 43. 2-Methylphenol 78 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45. 2-Mitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 47. 3-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroaniline U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroaniline U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51. 4-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51. 4-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51. 4-Nitrosodim-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. N-Nitrosodim-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. N-Nitrosodim-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. N-Nitrosodim-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. N-Nitrosodim-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 2.2-Nitrohropro	33. Fluoranthene	U	G+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
36. Hexachlorobutadiene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 37. Hexachlorocyclopentadiene U V- μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 38. Hexachlorocyclopentadiene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 38. Hexachlorocyclopentadiene U G+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 40. Isophorone U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 41. E-Methyl-4, 6-dinitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 41. E-Methyl-4, 6-dinitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 42. 2-Methyl-aphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43. 2-Methyl-phenol 8.8 G+ μg/L 10 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 44. 3-Methyl-phenol 78 G+ μg/L 10 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 45. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 46. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 46. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 47. 3-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 48. 4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 48. 4-Nitroaniline U G+ μg/L 30 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 48. 4-Nitroaniline U G+ μg/L 30 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 51. 4-Nitrophenol U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 51. 4-Nitrophenol U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 51. 4-Nitrophenol U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 51. 4-Nitrophenol U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 51. 4-Nitrosodimethylamine U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 51. 5-Nitrosodimethylamine U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 55. 2-Nitrosodimethylamine U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 55. 1-N-nitrosodimethylamine U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 55. 2-Nitrosodimethylamine U G+ μg/L 50 1	34. Fluorene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJF
37. Hexachlorocyclopentadiene U V- μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 38. Hexachlorocethane U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 39. Indeno(1,2,3-cd)pyrene U L+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 39. Indeno(1,2,3-cd)pyrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 41.2-Methyl-4,6-dinitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 42.2-Methylnaphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methylphenol 8.8 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methylphenol 78 G+ μg/L 10 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 45. Naphthalene U G+ μg/L 10 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 46. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 46. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 46. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 46. Naphthalene U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 47. 3-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 48. Nitrobenzene U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 49. Nitrobenzene U G+ μg/L 30 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 49. Nitrobenzene U G+ μg/L 30 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 50. 2-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 51. 4-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 52. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 55. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56. 2-2-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56. 2-2-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56. 2-2-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56. 2-2-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56. 2-2-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20	35. Hexachlorobenzene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
38. Hexachloroethane U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 39. Indeno(1,2,3-cd)pyrene U L+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 40. Isophorone U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 41.2-Methyl-4,6-folintrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 42.2-Methyl-4,6-folintrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methyl-4,6-folintrophenol B.8 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methyl-4,6-folintrophenol B.8 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 43.2-Methyl-4,6-folintrophenol B.8 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 44.3-Methyl-4,6-folintrophenol B.8 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 45. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 45. Naphthalene U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 47.3-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 48.4-Nitroaniline U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 48.4-Nitroaniline U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 49. Nitrobenzene U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 50.2-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 51.4-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 52.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 53.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 55.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 55.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56.N-Nitrosodiphenylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56.N-Nitrosodiphenylamine U G+ μg/L	36. Hexachlorobutadiene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
39. Indeno(1,2,3-cd)pyrene U L+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 40. Isophorone U G+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 41. 2-Methyl-4,6-dinitrophenol U G+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 42. 2-Methyl-haphralene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 43. 2-Methyl-haphralene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 43. 2-Methyl-haphralene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 44. 3-Methyl-haphralene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 46. 2-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 46. 2-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 49. Nitrobenzene U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 49. Nitrobenzene U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. 2-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51. 4-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. D-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 2,2-Oxybis(1-chloropropane) U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. Penanthrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. Penanthrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. Penanthrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57. Pentachlorophenol U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620	37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
40. Isophorone U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 41. 2-Methyl-4,6-dinitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 42. 2-Methyl-phalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 43. 2-Methyl-phanol 8.8 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 43. 2-Methyl-phanol 78 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 44. 3-Methyl-phanol 78 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 46. 2-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroaniline U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroaniline U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroaniline U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. 2-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51. 4-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. Di-n-otyl Phihalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 52.2-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 52.2-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 52.2-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 52.2-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. PS20H04D 08/08/20 S620H07D G. 56. PS20H04D 08/08/20 S620H07D G. 56.	38. Hexachloroethane	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
41.2-Methyl-4,6-dinitrophenol U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G42.2-Methylnaphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G43.2-Methylphenol 8.8 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G44.3-8-Methylphenol 78 G+ μg/L 10 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G44.3-8-Methylphenol 78 G+ μg/L 10 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G44.3-8-Methylphenol U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G46.2-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G46.2-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitroaniline U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrophenol U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrophenol U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrosodimethylamine U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrosodimethylamine U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrosodiphenylamine U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrosodiphenylamine U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrosodiphenylamine U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrosodiphenylamine U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrosodiphenylamine U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrosodiphenylamine U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G49.4-Nitrosodiphenylamine U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S6	39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
42.2-Methylnaphthalene	40. Isophorone	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
43.2-Methylphenol 8.8 G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 44.3&4-Methylphenol 78 G+ μg/L 10 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45.Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 46.2-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 47.3-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48.4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48.4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 49. Nitrobenzene U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50.2-Nitrophenol U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51.4-Nitrophenol U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51.4-Nitrophenol U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.N-Nitrosodimethylamine U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53.N-Nitrosodiphenylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54.N-Nitrosodiphenylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55.Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56.2,2'-Coxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55.Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56.2,2'-Coxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57. Pentachlorophenol U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenothrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenothrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorobenzene U G+ μg/L	41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
44.3&4-Methylphenol 78 G+ μg/L 10 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 45. Naphthalene U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 46. 2-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 47. 3-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 49. Nitrobenzene U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 49. Nitrobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. 2-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51. 4-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 2,2'-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57. Pentachlorophenol U V- μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	42.2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
45. Naphthalene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 46. 2-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 47. 3-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 49. Nitrobenzene U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 49. Nitrobenzene U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. 2-Nitrophenol U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51. 4-Nitrophenol U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52. N-Nitrosodimethylamine U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodiphenylamine U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54. N-Nitrosodiphenylamine U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. Di-n-cotyl Phthalate U V+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 2.2-'Oxybis(1-chloropropane) U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 2.2-'Oxybis(1-chloropropane) U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57. Pentachlorophenol U V+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. Pyrene U V+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U V+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorophenol U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 50. 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	43.2-Methylphenol	8.8	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
46. 2-Nitroanilline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 47. 3-Nitroanilline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 48. 4-Nitroanilline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 49. Nitrobenzene U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. 2-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51. 4-Nitrophenol U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodi-n-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodi-n-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54. N-Nitrosodi-n-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 2,2'-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57. Pentachlorophenol U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. Pyrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. Pyrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. Pyrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. Pyrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/2	44.3&4-Methylphenol	78	G+	μg/L	10	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
47.3-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 48.4-Nitroaniline U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 49. Nitrobenzene U G+ μg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 50.2-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 51.4-Nitrosodimethylamine U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 52. N-Nitrosodimethylamine U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 53. N-Nitrosodi-n-propylamine U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 54. N-Nitrosodiphenylamine U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 55. Di-n-octyl Phthalate U V+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 56. 2,2'-Oxybis(1-chloropropane) U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 57. Pentachlorophenol U V- μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 58. Phenanthrene U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 59. Phenol U V+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 59. Phenol U V+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 59. Phenol U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 60. Pyrene U V+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 61. Pyridine U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 61. Pyridine U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 62. 1,2,4-Trichlorobenzene U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 63. 2,4-S-Trichlorophenol U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 63. 2,4-S-Trichlorophenol U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 63. 2,4-S-Trichlorophenol U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 63. 2,4-S-Trichlorophenol U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G 63. 2,4-S-Trichlorophenol U G+ μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G	45. Naphthalene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
48.4-Nitroaniline U G+ µg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 49.Nitrobenzene U G+ µg/L 3.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50.2-Nitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51.4-Nitrophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.N-Nitrosodimethylamine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53.N-Nitrosodi-n-propylamine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54.N-Nitrosodiphenylamine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55.Di-n-octyl Phthalate U V+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56.2,2'-Cxybis(1-chloropropane) U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57.Pentachlorophenol U V- µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58.Phenanthrene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60.Pyrene U V+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61.Pyridine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61.Pyridine U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62.1,2,4-Trichlorobenzene U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	46.2-Nitroaniline	U	G+	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
49. Nitrobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 50. 2-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51.4-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodi-n-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54. N-Nitrosodi-n-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 2,2'-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57. Pentachlorophenol U V- μg/L 50 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	47.3-Nitroaniline	U	G+	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
50.2-Nitrophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 51.4-Nitrophenol U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53.N-Nitrosodi-n-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54.N-Nitrosodiphenylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55.Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55.Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56.2,2'-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57.Pentachlorophenol U V- μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58.Phenanthrene U G+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60.Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61.Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62.1,2,4-Trichlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	48.4-Nitroaniline	U	G+	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
51.4-Nitrophenol U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 52.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53.N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54.N-Nitrosodiphenylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55.Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56.2,2'-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57.Pentachlorophenol U V- μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58.Phenanthrene U G+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59.Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60.Pyrene U V+ μg/L 5.0 1.0	49. Nitrobenzene	U	G+	μg/L	3.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
52. N-Nitrosodimethylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 53. N-Nitrosodi-n-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54. N-Nitrosodiphenylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 2,2'-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57. Pentachlorophenol U V- μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	50.2-Nitrophenol	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
53. N-Nitrosodi-n-propylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 54. N-Nitrosodiphenylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 2,2'-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57. Pentachlorophenol U V- μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	51.4-Nitrophenol	U	G+	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
54. N-Nitrosodiphenylamine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 55. Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 56. 2,2'-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57. Pentachlorophenol U V- μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
55. Di-n-octyl Phthalate	53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
56.2,2'-Oxybis(1-chloropropane) U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 57. Pentachlorophenol U V- μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
57. Pentachlorophenol U V- μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 58. Phenanthrene U G+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	55. Di-n-octyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
58. Phenanthrene U G+ μg/L 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62. 1,2,4-Trichlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63. 2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	56.2,2'-Oxybis(1-chloropropane)	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
59. Phenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 60. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 61. Pyridine U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 62.1,2,4-Trichlorobenzene U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	58. Phenanthrene	U	G+	μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	59. Phenol	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
62.1,2,4-Trichlorobenzene U G+ μ g/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G. 63.2,4,5-Trichlorophenol U G+ μ g/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G.	60. Pyrene	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJI
63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G	61. Pyridine	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
63.2,4,5-Trichlorophenol U G+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G	62.1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
64. 2,4,6-Trichlorophenol U G+ μg/L 4.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D G	63.2,4,5-Trichlorophenol	U	G+		5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
	64.2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 37 of 98 Date: 08/12/20

Client Identification:	Applied Science & Technology,		Sample De	escription: MW-10	4-073020	1	Chair	of Custody:	184381	
	Inc Brighton		•	•				,		
Client Project Name:	RTTR (1-10860)		Sample No):			Colle	ct Date:	07/30/20	
Client Project No:	1-10860		Sample Ma	atrix: Groun	d Water		Colle	ct Time:	15:40	
Sample Comments:										
Definitions:	Q: Qualifier (see definitions at end	d of re	eport) NA: Not	t Applicable ‡: Pa	rameter n	ot included in NEL	AC Scope of A	Analysis.		
pH, Electrometric				Aliq	uot ID:	97294-006A	Matrix: (Fround Water		
Method: EPA 9040C				Des	cription:	MW-104-073020				
D (()	D 4	_	11.2	D 6 11 7	D:1 ::	Prepar			nalysis	
Parameter(s)	Result			Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1.pH	11.0		•	-1.00	1.0	NA	NA	08/04/20 21:03		
‡ 2.Temperature	22	2	°C	1.0	1.0	NA	NA	08/04/20 21:03	WD20H04D) JMK
Inorganic Anions by	IC			Aliq	uot ID:	97294-006A	Matrix: 0	Fround Water		
Method: EPA 9056A				Des	cription:	MW-104-073020				
						Prepar	ration	Ar	alysis	
Parameter(s)										
i aiaiiielei(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Chloride	Result 24000 0		Units µg/L	Reporting Limit	Dilution 10	P. Date 08/05/20	P. Batch PW20H03C	A. Date 08/05/20	A. Batch WC20H04A	
. ,	240000			10000			PW20H03C			
1. Chloride	240000 TDS)			10000 Aliq	10 uot ID:	08/05/20	PW20H03C	08/05/20		
1. Chloride Residue, Filterable (240000 TDS)			10000 Aliq	10 uot ID:	08/05/20 97294-006A	PW20H03C Matrix: C	08/05/20 Ground Water		
1. Chloride Residue, Filterable (240000 TDS)		µg/L	10000 Aliq	10 uot ID:	08/05/20 97294-006A MW-104-073020 Prepar	PW20H03C Matrix: C	08/05/20 Ground Water	WC20H04A	
1. Chloride Residue, Filterable (* Method: SM 2540 C-2	240000 TDS) 2011 Result	Q	µg/L	10000 Aliq Des	10 uot ID:	08/05/20 97294-006A MW-104-073020 Prepar	PW20H03C Matrix: (08/05/20 Ground Water	WC20H04A	VO Init.
1. Chloride Residue, Filterable (* Method: SM 2540 C- Parameter(s) 1. Total Dissolved	240000 TDS) 2011 Result Solids 860000	Q	μg/L Units	Aliq Des Reporting Limit	uot ID: cription: Dilution 1.3	97294-006A MW-104-073020 Prepar P. Date 08/03/20	Matrix: 0 ration P. Batch WH20G03A	08/05/20 Ground Water Ar A. Date 08/04/20	WC20H04A allysis A. Batch	VO Init.
1. Chloride Residue, Filterable (* Method: SM 2540 C- Parameter(s)	240000 TDS) 2011 Result Solids 860000 (Auto Analyzer)	Q	μg/L Units	Aliq Des Reporting Limit 50000	10 uot ID: cription: Dilution 1.3	08/05/20 97294-006A MW-104-073020 Prepar P. Date	Matrix: 0 ration P. Batch WH20G03A	08/05/20 Ground Water Ar A. Date	WC20H04A allysis A. Batch	VO Init.
1. Chloride Residue, Filterable (*) Method: SM 2540 C Parameter(s) 1. Total Dissolved Nitrogen, Ammonia (*)	240000 TDS) 2011 Result Solids 860000 (Auto Analyzer)	Q	μg/L Units	Aliq Des Reporting Limit 50000	10 uot ID: cription: Dilution 1.3	97294-006A MW-104-073020 Prepar P. Date 08/03/20	Matrix: 0 P. Batch WH20G03A Matrix: 0	08/05/20 Ground Water Ar A. Date 08/04/20 Ground Water	WC20H04A allysis A. Batch	VO Init.
1. Chloride Residue, Filterable (*) Method: SM 2540 C Parameter(s) 1. Total Dissolved Nitrogen, Ammonia (*)	240000 TDS) 2011 Result Solids 860000 (Auto Analyzer)	Q	μg/L Units μg/L	Aliq Des Reporting Limit 50000	10 uot ID: cription: Dilution 1.3	08/05/20 97294-006A MW-104-073020 Prepar P. Date 08/03/20 97294-006B MW-104-073020 Prepar	Matrix: 0 P. Batch WH20G03A Matrix: 0	08/05/20 Ground Water Ar A. Date 08/04/20 Ground Water	wc20H04A nalysis A. Batch wh20G03A	VO Init.

RSN: 97294-200812090936



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-007

Order: 97294 Page: 38 of 98 Date: 08/12/20

Applied Science & Technology, Chain of Custody: 184381 Client Identification: Sample Description: MW-105-073020 Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 13:50 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-007C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-105-073020 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.0057 mg/L 0.0050 1.0 08/05/20 PW20H05B 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-007F Matrix: Ground Water Method: EPA 1631E Description: MW-105-073020 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 2.0 M520H07A CJA 1. Mercury 26 ng/L 4.0 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-007D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-105-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic 11 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium U 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 3. Chromium U PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L 4.6 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 4. Copper μg/L 5.Lead 7.1 μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese U μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U μg/L 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 9. Silver μg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium U μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc U LLV+ μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-007D Matrix: Ground Water Description: MW-105-073020 Method: EPA 7470A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) Aliquot ID: Matrix: Ground Water 97294-007 Method: EPA 3510C/EPA 8082A Description: MW-105-073020 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 97294 Page: 39 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-105-073020

Chain of Custody:

184381

Client Project Name: RT

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time:

13:50

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Aliquot ID: 97294-007 Matrix: Ground Water

Method: EPA 3510C/EPA 8082A Description: MW-105-073020

						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
‡ 8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
‡ 9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-007E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-105-073020

						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
3. Benzene	1.1		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
4. Bromobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
5. Bromochloromethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
6. Bromodichloromethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
7. Bromoform	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
8. Bromomethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
9.2-Butanone	U	V+	μg/L	25	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
10. n-Butylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
11. sec-Butylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
12. tert-Butylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
13. Carbon Disulfide	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
15. Chlorobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
16. Chloroethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
17. Chloroform	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
18. Chloromethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
19.2-Chlorotoluene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
21. Dibromochloromethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
22. Dibromomethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 40 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-105-073020

Chain of Custody:

184381

Client Project Name: RTTR

RTTR (1-10860)

Sample No: Sample Matrix: Collect Date:
Collect Time:

07/30/20

13:50

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable : Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Method: EPA 5030C/EPA 8260D

Description: MW-105-073020

97294-007E

Ground Water

Aliquot ID:

Matrix: Ground Water

Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 23.1,2-Dichlorobenzene U μg/L 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS 24.1.3-Dichlorobenzene U ua/L 10 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS 25.1,4-Dichlorobenzene U 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS μg/L U VM20H06A 26 Dichlorodifluoromethane 5.0 1.0 08/06/20 08/06/20 VM20H06A WCS μg/L 27.1,1-Dichloroethane U 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS μg/L 1.0 U VM20H06A 28.1.2-Dichloroethane μg/L 10 1.0 08/06/20 08/06/20 VM20H06A WCS 29.1,1-Dichloroethene U μg/L 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS U VM20H06A 08/06/20 30. cis-1.2-Dichloroethene μg/L 10 1.0 08/06/20 VM20H06A WCS 31. trans-1,2-Dichloroethene U 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS ua/L U 32.1,2-Dichloropropane μg/L 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS 33. cis-1,3-Dichloropropene U 0.50 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS μg/L 34. trans-1,3-Dichloropropene U μg/L 0.50 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS U 08/06/20 VM20H06A 08/06/20 VM20H06A WCS 35 Ethylbenzene ua/L 10 1.0 36. Ethylene Dibromide U μg/L 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS U 37.2-Hexanone V+ 50 1.0 VM20H06A 08/06/20 VM20H06A WCS μg/L 08/06/20 38. Isopropylbenzene U 5.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS μg/L U 39.4-Methyl-2-pentanone 50 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS μg/L 40. Methylene Chloride U В 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS μg/L 5.0 ‡ 41.2-Methylnaphthalene U 5.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS μg/L U 42.MTBE μg/L 5.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS П VM20H06A WCS 43. Naphthalene 5.0 1.0 VM20H06A 08/06/20 μg/L 08/06/20 44. n-Propylbenzene U μg/L 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS U 45. Styrene μg/L 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS 46.1,1,1,2-Tetrachloroethane U μg/L 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS 47.1,1,2,2-Tetrachloroethane U 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS μg/L U 1.0 VM20H06A VM20H06A WCS 48. Tetrachloroethene 1.0 08/06/20 08/06/20 μg/L 49. Toluene 5.8 μg/L 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS U 5.0 1.0 VM20H06A 08/06/20 VM20H06A WCS 50.1,2,4-Trichlorobenzene μg/L 08/06/20 U VM20H06A 08/06/20 VM20H06A WCS 51.1,1,1-Trichloroethane μg/L 1.0 1.0 08/06/20 ‡ 52.1,1,2-Trichloroethane U 1.0 1.0 VM20H06A 08/06/20 VM20H06A WCS μg/L 08/06/20 U 53. Trichloroethene 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS µg/L U 54. Trichlorofluoromethane μg/L 2.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS 55.1,2,3-Trichloropropane U 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS µg/L U ‡ 56.1,2,3-Trimethylbenzene μg/L 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS U 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS 57.1,2,4-Trimethylbenzene μg/L 58.1,3,5-Trimethylbenzene U μg/L 1.0 1.0 08/06/20 VM20H06A 08/06/20 VM20H06A WCS 59. Vinyl Chloride U VM20H06A VM20H06A WCS μg/L 1.0 1.0 08/06/20 08/06/20

> 1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 41 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-105-073020

Ground Water

Chain of Custody:

184381

13:50

Client Project Name: RTTR (1-10860)

(1-10860) Sample No:

Collect Date:
Collect Time:

07/30/20

Client Project No:

Definitions:

Sample Comments:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-007E Matrix: Ground Water

Sample Matrix:

Method: EPA 5030C/EPA 8260D Description: MW-105-073020

					Prepa	ration	A	nalysis
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Ini
60. m&p-Xylene	U	μg/L	2.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A W
61.o-Xylene	U	μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A W
‡ 62. Xylenes	U	μg/L	3.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A W

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-007 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-105-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
1. Acenaphthene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	GJ
2. Acenaphthylene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
3. Aniline	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
4. Anthracene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
5. Azobenzene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G.
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
18. Carbazole	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
23. Chrysene	U		μg/L	1.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
25. Dibenzofuran	U		μg/L	4.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G
28.2,4-Dimethylphenol	20		μg/L	5.0	1.0	08/04/20	PS20H04D	08/08/20	S620H07D	G

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 42 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-105-073020

Ground Water

Chain of Custody:

184381

Client Project Name: R

RTTR (1-10860)

Sample No: Sample Matrix: Collect Date:
Collect Time:

07/30/20 13:50

Client Project No:
Sample Comments:

Definitions: Q:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-007 Matrix: Ground Water Method: EPA 3510C/EPA 8270E Description: MW-105-073020 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init 29. Dimethyl Phthalate U μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP 30.2.4-Dinitrophenol U Vμg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP 31.2,4-Dinitrotoluene U 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP μg/L U PS20H04D 08/08/20 S620H07D GJP 32 2 6-Dinitrotoluene μg/L 5.0 1.0 08/04/20 33. Fluoranthene U 1.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP μg/L U PS20H04D 34 Fluorene μg/L 5.0 1.0 08/04/20 08/08/20 S620H07D GJP 35. Hexachlorobenzene U μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D U 5.0 PS20H04D 08/08/20 S620H07D GJP 36 Hexachlorobutadiene μg/L 1.0 08/04/20 37. Hexachlorocyclopentadiene U V-5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP ua/L U 38. Hexachloroethane μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP 39. Indeno(1,2,3-cd)pyrene U L+ 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP μg/L 40. Isophorone U μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP U 20 1.0 PS20H04D 08/08/20 S620H07D GJP 41 2-Methyl-4 6-dinitrophenol ua/L 08/04/20 42.2-Methylnaphthalene U μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP 5.9 43.2-Methylphenol 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP μg/L ‡ 44.3&4-Methylphenol 28 10 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP μg/L U 45. Naphthalene 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP μg/L 46.2-Nitroaniline U 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP μg/L 47.3-Nitroaniline U 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP μg/L U 48.4-Nitroaniline μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP П 3.0 1.0 PS20H04D 08/08/20 49. Nitrobenzene μg/L 08/04/20 S620H07D GJP 50.2-Nitrophenol U µg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP U 51.4-Nitrophenol μg/L 20 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP 52. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP 53. N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP U 1.0 08/04/20 PS20H04D 08/08/20 54. N-Nitrosodiphenylamine 5.0 S620H07D GJP μg/L 55. Di-n-octyl Phthalate U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP U 5.0 1.0 PS20H04D 08/08/20 S620H07D GJP 56.2,2'-Oxybis(1-chloropropane) μg/L 08/04/20 U V-20 1.0 PS20H04D 08/08/20 57. Pentachlorophenol μg/L 08/04/20 S620H07D GJP U 58. Phenanthrene 2.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP μg/L 59. Phenol 17 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP µg/L 60. Pyrene U V+ μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP 61. Pyridine U 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP µg/L U 62.1,2,4-Trichlorobenzene μg/L 5.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP U 5.0 1.0 PS20H04D 08/08/20 S620H07D GJP 63.2.4.5-Trichlorophenol μg/L 08/04/20 64.2,4,6-Trichlorophenol U μg/L 4.0 1.0 08/04/20 PS20H04D 08/08/20 S620H07D GJP

> 1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 43 of 98 Date: 08/12/20

Client Identification:	Applied Science & Teclinc Brighton	hnology,		Sample De	scription: MW-1	05-073020)	Chair	n of Custody:	184381	
Client Project Name:	RTTR (1-10860)			Sample No	:			Colle	ct Date:	07/30/20	
Client Project No:	1-10860			Sample Ma	trix: Grou	nd Water		Colle	ct Time:	13:50	
Sample Comments:											
Definitions:	Q: Qualifier (see definiti	ions at end o	of repo	ort) NA: Not	Applicable ‡: P	arameter r	not included in NEL	AC Scope of	Analysis.		
pH, Electrometric					Alie	quot ID:	97294-007A	Matrix: (Ground Water		
Method: EPA 9040C					De	scription:	MW-105-073020				
							Prepa			alysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1.pH		11.9	Н	pH Units	-1.00	1.0	NA	NA	08/04/20 21:04		
‡ 2.Temperature		22		°C	1.0	1.0	NA	NA	08/04/20 21:04	WD20H04D	JMK
Inorganic Anions by	IC				Alie	quot ID:	97294-007A	Matrix:	Ground Water		
Method: EPA 9056A					De	scription:	MW-105-073020				
							Prepa			alysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Chloride		29000		μg/L	10000	1.0	08/04/20	PW20H03C	08/04/20	WC20H03A	VO
Residue, Filterable (TDS)				Alie	quot ID:	97294-007A	Matrix: (Ground Water		
Method: SM 2540 C-	2011				De	scription:	MW-105-073020				
							Prepa			alysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Total Dissolved	Solids	690000		μg/L	50000	1.3	08/03/20	WH20G03A	08/04/20	WH20G03A	JMK
Nitrogen, Ammonia Method: SM 4500-NI						quot ID:	97294-007B MW-105-073020	Matrix:	Ground Water		
							Prepa	ration	Ar	alysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution		ration P. Batch	A. Date	alysis A. Batch	Init.

RSN: 97294-200812090936



Order: 97294 Page: 44 of 98 Date: 08/12/20

Client Identification:	Applied Science & Tec	hnology,	5	Sample De	scription: MW-10	6-073020	1	Chain	of Custody:	184381	
Client Project Name:	RTTR (1-10860)		5	Sample No	:			Collec	t Date:	07/30/20	
Client Project No:	1-10860		5	Sample Ma	trix: Groun	d Water		Collec	t Time:	18:58	
Sample Comments:											
Definitions:	Q: Qualifier (see definit	ions at end	of report)	NA: Not	Applicable ‡: Pa	rameter n	not included in NEL	AC Scope of A	nalysis.		
Cyanide, Free (witho	out distillation)				Alia	uot ID:	97294-008C	Matrix: G	round Water		
Method: ASTM D723	•				Des	cription:	MW-106-073020				
							Prepar	ation	Aı	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
‡ 1. Cyanide, Free		U		mg/L	0.0050	1.0	08/05/20	PW20H05B	08/05/20	WQ20H05A	VC
Mercury by CVAFS, I	Low-Level, Total				Aliq	uot ID:	97294-008F	Matrix: G	round Water		
Method: EPA 1631E					Des	cription:	MW-106-073020				
							Prepar	ation	Δι	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init
1. Mercury		1.3		ng/L	0.50	0.99	08/07/20	PM20H07B	08/07/20	M520H07A	CJA
-	CP/MS, Total Recoverab				-	uot ID:	97294-008D	Matrix: G	round Water		
Method: EPA 3005A	(Total Recoverable)/EP/	4 6020A			Des	cription:	MW-106-073020				
							Prepar	ation		nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Arsenic		U		μg/L	5.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLF
2. Barium		240		μg/L	100	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLŀ
3. Chromium		14		μg/L	10	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLŀ
4. Copper		6.9		μg/L	4.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLF
5.Lead		U		μg/L	3.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLF
6. Manganese		U		μg/L	50	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLŀ
7. Nickel		U		μg/L	20	10	08/06/20	PT20H06B	08/06/20	T420H06A	
8. Selenium		U		μg/L	5.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	
9. Silver		U		μg/L	0.20	10	08/06/20	PT20H06B	08/06/20	T420H06A	
10. Vanadium		U		μg/L	4.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	
11. Zinc		U	LLV+	μg/L	50	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLF
Mercury by CVAAS,	Total				Aliq	uot ID:	97294-008D	Matrix: G	round Water		
Method: EPA 7470A					Des	cription:	MW-106-073020				
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	Prepar P. Date	ation P. Batch	A. Date	nalysis A. Batch	Init
1. Mercury		U		μg/L	0.20	1.0	08/04/20	PM20H04B	08/05/20	M720H05A	AVO
Polychlorinated Biph	nenvis (PCBs)				Alia	uot ID:	97294-008	Matrix: G	round Water		
Method: EPA 3510C/					-		MW-106-073020				
Doromotor(o)		Decult	0	Unito	Depositing Limit	Dilution	Prepar			nalysis	lm:4
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
	1914 Holloway Drive		Holt, MI	48842	7	T: (517) 699	0.0245	F· (51	7) 699-0388		
	,		,					•	•		
	11766 E. Grand River 8660 S. Mackinaw Trail		Brighton	, MI 48116 MI 49601	ī	: (317) 033 Г: (810) 220 Г: (231) 775	0-3300	F: (81	0) 220-3311 1) 775-8584		



Order: 97294 Page: 45 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-106-073020

Chain of Custody:

Collect Time:

184381

Client Project Name: RTTR

RTTR (1-10860)

Collect Date:

Ground Water

07/30/20

18:58

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Sample No:

Polychlorinated Biphenyls (PCBs) Aliquot ID: 97294-008 Matrix: Ground Water

Method: EPA 3510C/EPA 8082A Description: MW-106-073020

						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-008E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-106-073020

						Prepa	ration	Α	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
3. Benzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
10.n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
12. tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

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Order: 97294 Page: 46 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-106-073020

Chain of Custody:

184381

Client Project Name: RTTR (1

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860

Sample Matrix: Ground Water

Collect Time:

18:58

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 97294-008E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D

Description: MW-106-073020

23.1,2-Dichlorobenzene							Prepa	ration	A	nalysis
24.1,3-Dichlorobenzene	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init
25.1,4-Dichlorobenzene U	23.1,2-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCN
26. Dichlorodifluoromethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 27. 1,1-Dichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 29. 1,1-Dichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 29. 1,1-Dichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 29. 1,1-Dichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 30. cis-1,2-Dichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 32. 1,2-Dichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 32. 1,2-Dichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 33. cis-1,3-Dichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 34. trans-1,3-Dichloropropene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 36. Ethylene Dibromide U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 36. Ethylene Dibromide U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 37. 2-Hexanone U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 39. 4-Methyl-2-pentanone U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 39. 4-Methyl-2-pentanone U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 40. Methylene Chloride U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 41. 2-Methylene Chloride U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 43. Naphthalene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 44. N-Propylbenzene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 45. Styrene U µg/L 20 20 08/05/20	24.1,3-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCN
27.1,1-Dichloroethane	25.1,4-Dichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCN
28.1,2-Dichloroethane	26. Dichlorodifluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
29.1,1-Dichloroethene	27.1,1-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCN
30. cis-1,2-Dichloroethene	28.1,2-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
31. trans-1,2-Dichloroethene	29.1,1-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
32.1,2-Dichloropropane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 03/05/20 VB2	30. cis-1,2-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
33. dis-1,3-Dichloropropene	31.trans-1,2-Dichloroethene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
34. trans-1,3-Dichloropropene U	32.1,2-Dichloropropane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
35. Ethylbenzene	33. cis-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCI
36. Ethylene Dibromide	34. trans-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
37.2-Hexanone U V+ µg/L 50 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR VB20H05A CR VB20H05A CR VB20H05A CR	35. Ethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCI
38. Isopropylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 39. 4-Methyl-2-pentanone U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 40. Methylene Chloride U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 41.2-Methylnaphthalene U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 41.2-Methylnaphthalene U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 42. MTBE U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 43. Naphthalene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 44. n-Propylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 44. n-Propylbenzene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 44. n-Propylbenzene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 46. 1,1,1,2-Tetrachloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 47. 1,1,2,2-Tetrachloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 47. 1,1,2,2-Tetrachloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 49. Totalene U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 49. Totalene U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 50. 1,2,4-Trichloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/2	36. Ethylene Dibromide	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCI
39.4-Methyl-2-pentanone U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 40. Methylene Chloride U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 41.2-Methylnaphthalene U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 42. MTBE U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 43. Naphthalene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 44. n-Propylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 44. n-Propylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 46. 1,1,1,2-Tetrachloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 46. 1,1,1,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 47. 1,1,2,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 48. Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 49. Toluene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 49. Toluene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 50. 1,2,4-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,2-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,2-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,2-Trichloropthane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,2-Trichloropthane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,2-Trichloropthane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,2-Trichloropthane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,2-Trichloropthane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,2-Trichloropthane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC	37.2-Hexanone	U	V+	μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCI
40. Methylene Chloride U μg/L 100 20 08/05/20 VB20H05A KC 41.2-Methylnaphthalene U μg/L 100 20 08/05/20 VB20H05A KC 42. MTBE U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 43. Naphthalene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 44. n-Propylbenzene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 44. n-Propylbenzene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 45. Styrene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 46. 1,1,1,2-Tetrachloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 47. 1,1,2,2-Tetrachloroethane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 48. Tetrachloroethane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 49. Toluene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 49. Toluene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 50. 1,2,4-Trichloroethane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51. 1,1,1-Trichloroethane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 52. 1,1,2-Tichloroethane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 53. Trichloroethane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 53. Trichloroethane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 54. Trichlorofluoromethane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55. 1,2,3-Trichloropropane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55. 1,2,3-Trichloropropane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55. 1,2,3-Trichloropropane U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 56. 1,2,3-Trimethylbenzene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 57. 1,2,4-Trimethylbenzene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58. 1,3,5-Trimethylbenzene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58. 1,3,5-Trimethylbenzene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC	38. Isopropylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
41.2-Methylnaphthalene U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A 04/05/20 VB	39.4-Methyl-2-pentanone	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
42.MTBE U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR CR 43.Naphthalene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR CR 44.n-Propylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR CR 45.Styrene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR CR 46.1,1,1,2-Tetrachloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR CR 47.1,1,2,2-Tetrachloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR CR 48.Tetrachloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR 49.Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR 50.1,2,4-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A </td <td>40. Methylene Chloride</td> <td>U</td> <td></td> <td>μg/L</td> <td>20</td> <td>20</td> <td>08/05/20</td> <td>VB20H05A</td> <td>08/05/20</td> <td>VB20H05A KC</td>	40. Methylene Chloride	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
43. Naphthalene U µg/L 20 20 08/05/20 VB20H05A	41.2-Methylnaphthalene	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCI
44.n-Propylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR CR CR 45. Styrene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR CR CR 46.1,1,1,2-Tetrachloroethane U μg/L 20 20 08/05/20 VB20H05A <t< td=""><td>42.MTBE</td><td>U</td><td></td><td>μg/L</td><td>10</td><td>20</td><td>08/05/20</td><td>VB20H05A</td><td>08/05/20</td><td>VB20H05A KC</td></t<>	42.MTBE	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 46.1,1,1,2-Tetrachloroethane U µg/L 20 20 08/05/20 VB20H05A CC 47.1,1,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A CC 47.1,1,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A CC 48. Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A CC 49. Toluene U µg/L 10 20 08/05/20 VB20H05A CC 49. Toluene U µg/L 20 20 08/05/20 VB20H05A CC 49. Toluene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 50.1,2,4-Trichloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 51.1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 52.1,1,2-Trichloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 53. Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 54. Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 55.1,2,3-Trichloropropane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 56.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 57.1,2,4-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 57.1,2,4-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A CC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/2	43. Naphthalene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
46.1,1,1,2-Tetrachloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 47.1,1,2,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 48. Tetrachloroethene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 49. Toluene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 49. Toluene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 50.1,2,4-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51.1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 52.1,1,2-Trichloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 53. Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 54. Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trichloropropane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 56.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 57.1,2,4-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 57.1,2,4-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58.1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC	44. n-Propylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
47.1,1,2,2-Tetrachloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR CR CR 48. Tetrachloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR CR CR CR 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CR	45. Styrene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
48. Tetrachloroethene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 50.1,2,4-Trichlorobenzene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51.1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 53. Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 54. Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trimethylbenzene	46.1,1,1,2-Tetrachloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CO 50.1,2,4-Trichlorobenzene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CO 51.1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CO 52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CO 53. Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CO 54. Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CO 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A CO 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A CO 57.1,2,4-Trimethylbenzene U μ	47.1,1,2,2-Tetrachloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
50.1,2,4-Trichlorobenzene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 51.1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 53. Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 54. Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A C	48. Tetrachloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
51.1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A COS/20 COS/20 VB20H05A COS/20 COS/20 VB20H05A COS/20 COS/20 VB20H05A COS/20 COS/20 VB20H05A COS/20 COS/20 VB20H05A COS/20 COS/20 VB20H05A COS/20 COS/20 VB20H05A COS/20 COS/20 COS/20 COS/20 COS/20 COS/20<	49. Toluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 53.Trichloroethene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 54.Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC	50.1,2,4-Trichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
53. Trichloroethene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 54. Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55. 1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 56. 1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 57. 1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58. 1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC	51.1,1,1-Trichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
54. Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 55. 1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 56. 1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 57. 1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58. 1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC	52.1,1,2-Trichloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC	53. Trichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC	54. Trichlorofluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A KC 08/05/20 VB20H05A	55.1,2,3-Trichloropropane	U			20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A KC 08/05/20 VB20H05/20 VB20H05A KC 08/05/20 VB20H05A KC 08/05/20 VB20H05A KC 08/05/	56.1,2,3-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KC	57.1,2,4-Trimethylbenzene	U			10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
	58.1,3,5-Trimethylbenzene	U			10	20	08/05/20		08/05/20	VB20H05A KC
	59. Vinyl Chloride	U			10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCI

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Order: 97294 Page: 47 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-106-073020

Chain of Custody:

184381

Client Project Name: RTTF

RTTR (1-10860)

Sample No:
Sample Matrix:

Collect Date:

07/30/20

Client Project No:

1-10860 Sample

Ground Water

Collect Time: 18:58

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-008E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-106-073020

					Prepa	ration	A	nalysis
Parameter(s)	Result Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
60.m&p-Xylene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
61.o-Xylene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
‡ 62. Xylenes	U	μg/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-008 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-106-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
1. Acenaphthene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
2. Acenaphthylene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G٠
3. Aniline	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
4. Anthracene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G.
5. Azobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G.
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G.
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
12.Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
14.Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
18. Carbazole	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
23. Chrysene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
25. Dibenzofuran	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	G

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Order: 97294 Page: 48 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-106-073020

Ground Water

Chain of Custody:

184381

Client Project Name: RTTR (1

RTTR (1-10860)

Sample No:
Sample Matrix:

Collect Date:
Collect Time:

07/30/20

18:58

Client Project No:
Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-008 Matrix: Ground Water Method: EPA 3510C/EPA 8270E Description: MW-106-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
31.2,4-Dinitrotoluene	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
33. Fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
34. Fluorene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
35. Hexachlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
38. Hexachloroethane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
39. Indeno(1,2,3-cd)pyrene	U	V+	μg/L	2.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
40. Isophorone	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
43.2-Methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
44.3&4-Methylphenol	U		μg/L	10	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
45. Naphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
46.2-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
47.3-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
48.4-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
49. Nitrobenzene	U		μg/L	3.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
50.2-Nitrophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
51.4-Nitrophenol	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
55. Di-n-octyl Phthalate	U	L+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
58. Phenanthrene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
59. Phenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
60. Pyrene	U	L+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
61. Pyridine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI

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Order: 97294 Page: 49 of 98 Date: 08/12/20

Client Identification:	Applied Science & Technology, Inc Brighton		Sample De	scription: MW-10	6-073020)	Chair	of Custody:	184381	
Client Project Name:	RTTR (1-10860)		Sample No	:			Colle	ct Date:	07/30/20	
Client Project No:	1-10860		Sample Ma	trix: Groun	d Water		Colle	ct Time:	18:58	
Sample Comments:										
Definitions:	Q: Qualifier (see definitions at end	of rep	ort) NA: Not	Applicable ‡: Pa	rameter n	not included in NEL	AC Scope of A	Analysis.		
pH, Electrometric				Aliq	uot ID:	97294-008A	Matrix: (Ground Water		
Method: EPA 9040C				Des	cription:	MW-106-073020				
						Prepa	ration	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1.pH	12.4	Н	pH Units	-1.00	1.0	NA	NA	08/04/20 21:06	WD20H04D	JMK
‡ 2.Temperature	22		°C	1.0	1.0	NA	NA	08/04/20 21:06	WD20H04D	JMK
Inorganic Anions by	IC			Aliq	uot ID:	97294-008A	Matrix: (Ground Water		
Method: EPA 9056A				Des	cription:	MW-106-073020				
						Prepa	ration	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Chloride	47000		μg/L	10000	1.0	08/04/20	PW20H03C	08/04/20	WC20H03A	VO
Residue, Filterable (TDS)			Aliq	uot ID:	97294-008A	Matrix: (Ground Water		
Method: SM 2540 C-	2011			Des	cription:	MW-106-073020				
						Prepa	ration	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Total Dissolved	Solids 1500000		μg/L	50000	1.3	08/05/20	WH20H05C	08/07/20	WH20H05C	CMB
Nitrogen, Ammonia	(Auto Analyzer)			Aliq	uot ID:	97294-008B	Matrix: (Ground Water		
Method: SM 4500-Ni	H3 G-2011			Des	cription:	MW-106-073020				
-						Prepa	ration	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Ammonia-N	2200		μg/L	10	1.0	08/07/20	PW20H07A	08/07/20	WU20H07B	AMW

RSN: 97294-200812090936



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-009

Order: 97294 Page: 50 of 98 Date: 08/12/20

Applied Science & Technology, Chain of Custody: 184381 Client Identification: Sample Description: MW-107S-073020 Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 17:00 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-009C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-107S-073020 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 6.0 mg/L 0.50 100 08/05/20 PW20H05B 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-009F Matrix: Ground Water Method: EPA 1631E Description: MW-107S-073020 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 38 4.9 M520H07A CJA 1. Mercury ng/L 9.9 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-009D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-107S-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic 5.9 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium U 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L U 3. Chromium PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L 4. Copper U 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 5.Lead П μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese U μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U μg/L 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 9. Silver μg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium U μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc U LLV+ μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-009D Matrix: Ground Water Method: EPA 7470A Description: MW-107S-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) Matrix: Ground Water Aliquot ID: 97294-009 Method: EPA 3510C/EPA 8082A Description: MW-107S-073020 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 97294 Page: 51 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-107S-073020

Chain of Custody:

Matrix: Ground Water

184381

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time:

17:00

Sample Comments:

Definitions:

Polychlorinated Biphenyls (PCBs)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water Aliquot ID: 97294-009

Method: EPA 3510C/EPA 8082A		Description: MW-107S-073020											
						Prepa	ration	А	nalysis				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.				
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA				
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA				
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA				
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA				
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA				
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA				
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA				
‡ 8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA				
‡ 9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA				

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-009E

Method: EPA 5030C/EPA 8260D Description: MW-107S-073020

						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
3.Benzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
10.n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
12.tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

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Order: 97294 Page: 52 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-107S-073020

Ground Water

Chain of Custody:

184381

Client Project Name: RTTR (1

RTTR (1-10860)

Sample No:

Sample Matrix:

Collect Date:
Collect Time:

07/30/20

17:00

Client Project No:

Sample Comments:

Definitions: Q: Q

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 97294-009E

Matrix: Ground Water

Description: MW-107S-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
23.1,2-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
24.1,3-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
25.1,4-Dichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
26. Dichlorodifluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
27.1,1-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
28.1,2-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
29.1,1-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
30. cis-1,2-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
31. trans-1,2-Dichloroethene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
32.1,2-Dichloropropane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
33. cis-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
34. trans-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
35. Ethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
36. Ethylene Dibromide	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
37.2-Hexanone	U	V+	μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
38. Isopropylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
39.4-Methyl-2-pentanone	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
40. Methylene Chloride	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
41.2-Methylnaphthalene	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
42.MTBE	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
43. Naphthalene	96		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
44. n-Propylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
45. Styrene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
46.1,1,1,2-Tetrachloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
47.1,1,2,2-Tetrachloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
48. Tetrachloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
49. Toluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
50.1,2,4-Trichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
51.1,1,1-Trichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
52.1,1,2-Trichloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
53. Trichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
54. Trichlorofluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
55.1,2,3-Trichloropropane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
56.1,2,3-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
57.1,2,4-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
58.1,3,5-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
59. Vinyl Chloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

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Order: 97294 Page: 53 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-107S-073020

Chain of Custody:

184381

Client Project Name: RT

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860 Sample Matrix:

Ground Water

Collect Time:

17:00

Sample Comments:

Definitions: Q: Qua

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-009E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-107S-073020

						Prepa	ration	Δ	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
60. m&p-Xylene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
61.o-Xylene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
‡ 62. Xylenes	U		μq/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-009 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-107S-073020

						Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acenaphthene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
2. Acenaphthylene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
3. Aniline	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
4. Anthracene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
5. Azobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
6.Benzo(a)anthracene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
9.Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
10.Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
18. Carbazole	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ'
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
23. Chrysene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
25. Dibenzofuran	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
28.2,4-Dimethylphenol	170		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 54 of 98 Page: Date: 08/12/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-107S-073020

Chain of Custody:

184381

Client Project Name: RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860

Sample Matrix:

Ground Water

Collect Time: 17:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

29. Dimethyl Phthalate U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 30. 2,4-Dinitrophenol U V- μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 31. 2,4-Dinitrotoluene U V+ μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 33. Fluoranthene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 34. Fluorene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 35. Hexachlorobutadiene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 37. Hexachlorocyclopentadiene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 38. Hexachlorochtadiene U μg/L	Batch Init. DH07C GJP DH07C GJP DH07C GJP
Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. 29. Dimethyl Phthalate U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 30. 2,4-Dinitrotoluene U V+ μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 31. 2,4-Dinitrotoluene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 32. 2,6-Dinitrotoluene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 33. Fluoranthene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 35. Hexachlorobutadiene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 37. Hexachlorocytopentadiene U V- μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 39. Indeno(1,23-ed)pyren	Batch Init. DH07C GJP DH07C GJP DH07C GJP
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30.2,4-Dinitrophenol U V- µg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 31.2,4-Dinitrotoluene U V+ µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 32.2,6-Dinitrotoluene U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 33.Fluoranthene U µg/L 1.0 1.0 08/06/20 PS20H06G 08/07/20 S62 33.Fluoranthene U µg/L 1.0 1.0 08/06/20 PS20H06G 08/07/20 S62 34.Fluorene U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 35.Hexachlorobenzene U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 36.Hexachlorobutadiene U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 36.Hexachloroculadiene U V- µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 37.Hexachlorocyclopentadiene U V- µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 38.Hexachlorocyclopentadiene U V- µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 39.Indeno(1,2,3-cd)pyrene U V+ µg/L 2.0 1.0 08/06/20 PS20H06G 08/07/20 S62 39.Indeno(1,2,3-cd)pyrene U V+ µg/L 2.0 1.0 08/06/20 PS20H06G 08/07/20 S62 41.2-Methyl-4,6-dinitrophenol U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 41.2-Methyl-4,6-dinitrophenol U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 41.2-Methyl-hphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43.2-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43.2-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 47.3-Nitroaniline U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 47.3-Nitroaniline U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 52)H07C GJP)H07C GJP
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35. Hexachlorobenzene U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 36. Hexachlorobutadiene U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 37. Hexachlorocyclopentadiene U V- µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 38. Hexachlorocyclopentadiene U V- µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 39. Indeno(1,2,3-cd)pyrene U V+ µg/L 2.0 1.0 08/06/20 PS20H06G 08/07/20 S62 40. Isophorone U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 41.2-Methyl-4,6-dinitrophenol U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43.2-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene	H07C GJP
36. Hexachlorobutadiene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 37. Hexachlorocyclopentadiene U V- μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 38. Hexachlorocthane U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 39. Indeno(1,2,3-cd)pyrene U V+ μg/L 2.0 1.0 08/06/20 PS20H06G 08/07/20 S62 40. Isophorone U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 41.2-Methyl-4,6-dinitrophenol U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 42.2-Methylnaphthalene 9.1 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43.2-Methylphenol 6.0 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43.2-Methylphenol 6.0 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.2-Methylphenol 69 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.2-Methylphenol 69 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3-Methylphenol 69 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene 110 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 46.2-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 47.3-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48.4-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrobenzene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrobenzene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrobenzene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrobenzene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrobenzene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrobenzene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.3-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.3-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.3-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.3-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.3-Nitrosodimethylamine	H07C GJP
37. Hexachlorocyclopentadiene U V- µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 38. Hexachloroethane U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 39. Indeno(1,2,3-cd)pyrene U V+ µg/L 2.0 1.0 08/06/20 PS20H06G 08/07/20 S62 40. Isophorone U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 41.2-Methyl-4,6-dinitrophenol U µg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 42.2-Methylnaphthalene 9.1 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43.2-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.384-Methylphenol 69 µg/L 10 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene 110 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 46.2-Nitroaniline U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 47.3-Nitroaniline U µg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 47.3-Nitroaniline U µg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48.4-Nitroaniline U µg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U µg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrophenol U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrosodimethylamine U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 52.N-Nitrosodimethylamine U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53.N-Nitrosodinethylamine U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodiphenylamine U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodiphenylamine U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodiphenylamine U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
38. Hexachloroethane U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 39. Indeno(1,2,3-cd)pyrene U V+ μg/L 2.0 1.0 08/06/20 PS20H06G 08/07/20 S62 40. Isophorone U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 41.2-Methyl-4,6-dinitrophenol U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 42.2-Methylnaphthalene 9.1 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 42.2-Methylnaphthalene 9.1 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43.2-Methylphenol 6.0 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3&4-Methylphenol 6.9 μg/L 10 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene 110 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 46.2-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 47.3-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48.4-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U μg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 52. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine	H07C GJP
39. Indeno(1,2,3-cd)pyrene U V+ μg/L 2.0 1.0 08/06/20 PS20H06G 08/07/20 S62 40. Isophorone U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 41. 2-Methyl-4,6-dinitrophenol U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 42. 2-Methylnaphthalene 9.1 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43. 2-Methylphenol 6.0 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43. 3-Methylphenol 69 μg/L 10 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene 110 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene 110 μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 46. 2-Nitroanilline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 47. 3-Nitroanilline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48. 4-Nitroanilline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U μg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50. 2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51. 4-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51. 4-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 52. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53. N-Nitrosodin-p-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
40. Isophorone U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 41.2-Methyl-4,6-dinitrophenol U µg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 42.2-Methylnaphthalene 9.1 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43.2-Methylphenol 6.0 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3&4-Methylphenol 69 µg/L 10 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene 110 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene 110 µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 46. 2-Nitroaniline U µg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 47. 3-Nitroaniline U µg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48. 4-Nitroaniline U µg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U µg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U µg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50. 2-Nitrophenol U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51. 4-Nitrophenol U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 52. N-Nitrosodimethylamine U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53. N-Nitrosodimethylamine U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodi-n-propylamine U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U µg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
41.2-Methyl-4,6-dinitrophenol	H07C GJP
42.2-Methylnaphthalene 9.1 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 43.2-Methylphenol 6.0 μg/L 1.0 08/06/20 PS20H06G 08/07/20 S62 44.3&4-Methylphenol 69 μg/L 10 1.0 08/06/20 PS20H06G 08/07/20 S62 45.Naphthalene 110 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 45.Naphthalene 110 μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 46.2-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 47.3-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48.4-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49.Nitrobenzene U μg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53.N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
43.2-Methylphenol 6.0 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 ‡ 44.3&4-Methylphenol 69 μg/L 10 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene 110 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 46.2-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 47.3-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48.4-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48.4-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U μg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 52. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53. N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
‡ 44.3&4-Methylphenol 69 μg/L 10 1.0 08/06/20 PS20H06G 08/07/20 S62 45. Naphthalene 110 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 46.2-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 47.3-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48.4-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U μg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50. 2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine	H07C GJP
45. Naphthalene 110 μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 46. 2-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 47. 3-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48. 4-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U μg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50. 2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrophenol U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 52. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine	H07C GJP
46.2-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 47.3-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48.4-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49.Nitrobenzene U μg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrophenol U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 52.N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53.N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
47.3-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 48.4-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49. Nitrobenzene U μg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrophenol U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 52. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53. N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
48.4-Nitroaniline U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 49.Nitrobenzene U μg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50.2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrophenol U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 52.N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53.N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
49. Nitrobenzene U μg/L 3.0 1.0 08/06/20 PS20H06G 08/07/20 S62 50. 2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrophenol U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 52. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53. N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
50.2-Nitrophenol U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 51.4-Nitrophenol U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 52.N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53.N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
51.4-Nitrophenol U μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62 52.N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53.N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54.N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
52. N-Nitrosodimethylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 53. N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
53. N-Nitrosodi-n-propylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62 54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
54. N-Nitrosodiphenylamine U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
· ·	H07C GJP
55. Di-n-octyl Phthalate U L+ μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
	H07C GJP
56.2,2'-Oxybis(1-chloropropane) U μg/L 5.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
57. Pentachlorophenol U V- μg/L 20 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
58. Phenanthrene U μg/L 2.0 1.0 08/06/20 PS20H06G 08/07/20 S62	H07C GJP
	H07C GJP

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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Order: 97294 Page: 55 of 98 Date: 08/12/20

Client Identification:	Applied Science & Technology	,	Sample De	escription: MW-10	78-07302	20	Chair	of Custody:	184381	
Client Project Name:	Inc Brighton RTTR (1-10860)		Sample No):			Colle	ct Date:	07/30/20	
Client Project No:	1-10860		Sample Ma	atrix: Groun	d Water		Colle	ct Time:	17:00	
Sample Comments:										
Definitions:	Q: Qualifier (see definitions at en	nd of re	eport) NA: Not	t Applicable ‡: Pa	rameter n	not included in NELA	C Scope of A	Analysis.		
pH, Electrometric Method: EPA 9040C				•	uot ID: cription:	97294-009A MW-107S-073020	Matrix: (Ground Water		
-						Prepara	ation	An	alysis	
Parameter(s)	Resul	t Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1.pH	12	. 0 H	•	-1.00	1.0	NA	NA	08/04/20 21:07	WD20H04D	JMK
‡ 2.Temperature	2	21	°C	1.0	1.0	NA	NA	08/04/20 21:07	WD20H04D) JMK
Inorganic Anions by	IC			Aliq	uot ID:	97294-009A	Matrix: (Ground Water		
Method: EPA 9056A				Des	cription:	MW-107S-073020				
Parameter(s)	Resul	t Q	. Units	Reporting Limit	Dilution	Prepara P. Date	tion P. Batch	An An An	alysis A. Batch	Init.
.,,				· · ·						
1. Chloride	2400	JU	μg/L	10000	1.0	08/04/20	PW20H03C	08/04/20	WC20H03A	VO
Residue, Filterable (** Method: SM 2540 C-:	•			•	uot ID:	97294-009A MW-107S-073020	Matrix: (Ground Water		
					on prioni	Prepara	ation	An	alysis	
Parameter(s)	Resul	t Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Total Dissolved	Solids 73000	00	μg/L	50000	1.3	08/05/20	WH20H05C	08/07/20	WH20H05C	CMB
Nitrogen, Ammonia (Method: SM 4500-NH	• •			•	uot ID: cription:	97294-009B MW-107S-073020	Matrix: (Ground Water		
Parameter(s)	Resul	t Q	. Units	Reporting Limit	Dilution	Prepara n P. Date	ntion P. Batch	A. Date	alysis A. Batch	Init.
1. Ammonia-N	1100	00	μg/L	20	2.0	08/07/20	PW20H07A	08/07/20	WU20H07B	AMW

DCSID: G-610.19 (10/01/19)



Order: 97294 Page: 56 of 98 Date: 08/12/20

Applied Science & Technology, MW-107D-073020 Chain of Custody: 184381 Client Identification: Sample Description: Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 18:00 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-010C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-107D-073020 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.016 mg/L 0.0050 1.0 08/05/20 PW20H05B 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-010F Matrix: Ground Water Method: EPA 1631E Description: MW-107D-073020 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 0.97 0.50 M520H07A CJA 1. Mercury ng/L 0.99 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-010D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-107D-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic U 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium U 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 3. Chromium U PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L U 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 4. Copper μg/L 5.Lead П μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese U μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U μg/L 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 9. Silver μg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium U μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc U LLV+ μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-010D Matrix: Ground Water Description: MW-107D-073020 Method: EPA 7470A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) Matrix: Ground Water Aliquot ID: 97294-010 Method: EPA 3510C/EPA 8082A Description: MW-107D-073020 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 97294 Page: 57 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107D-073020

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Chain of Custody:

184381

Client Project Name:

RTTR (1-10860)

Sample No:

Sample Matrix:

Collect Date:

07/30/20

Client Project No: Sample Comments:

Definitions:

Polychlorinated Biphenyls (PCBs)

Ground Water

Collect Time: 18:00

Method: EPA 3510C/EPA 8082A

Aliquot ID: 97294-010 **Matrix: Ground Water**

Description: MW-107D-073020

						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
‡ 8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
‡ 9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-010E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-107D-073020

						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
‡ 2. Acrylonitrile	U		μg/L	2.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
3. Benzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
4. Bromobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
5. Bromochloromethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
6. Bromodichloromethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
7. Bromoform	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
8. Bromomethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
9.2-Butanone	U	V+	μg/L	25	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
10. n-Butylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
11. sec-Butylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
12.tert-Butylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
13. Carbon Disulfide	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
14. Carbon Tetrachloride	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
15. Chlorobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
16. Chloroethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
17. Chloroform	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
18. Chloromethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs
19.2-Chlorotoluene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
21. Dibromochloromethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	WCS
22. Dibromomethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A	wcs

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Order: 97294 Page: 58 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107D-073020

Ground Water

Description: MW-107D-073020

Chain of Custody:

184381

18:00

Client Project Name:

RTTR (1-10860)

Sample No: Sample Matrix: Collect Date: Collect Time: 07/30/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-010E **Matrix: Ground Water** Method: EPA 5030C/EPA 8260D

						Prepa			nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
23.1,2-Dichlorobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
24.1,3-Dichlorobenzene	1.3		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
25.1,4-Dichlorobenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
26. Dichlorodifluoromethane	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
27.1,1-Dichloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
28.1,2-Dichloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
29.1,1-Dichloroethene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
30. cis-1,2-Dichloroethene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
31. trans-1,2-Dichloroethene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
32.1,2-Dichloropropane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
33. cis-1,3-Dichloropropene	U		μg/L	0.50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
34. trans-1,3-Dichloropropene	U		μg/L	0.50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
35. Ethylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
36. Ethylene Dibromide	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
37.2-Hexanone	U	V+	μg/L	50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
38. Isopropylbenzene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
39.4-Methyl-2-pentanone	U		μg/L	50	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
40. Methylene Chloride	U	В	μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
41.2-Methylnaphthalene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
42.MTBE	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
43. Naphthalene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
44. n-Propylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
45. Styrene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
46.1,1,1,2-Tetrachloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
47.1,1,2,2-Tetrachloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
48. Tetrachloroethene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
49. Toluene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
50.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
51.1,1,1-Trichloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
52.1,1,2-Trichloroethane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
53. Trichloroethene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
54. Trichlorofluoromethane	U		μg/L	2.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
55.1,2,3-Trichloropropane	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
56.1,2,3-Trimethylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
57.1,2,4-Trimethylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
58.1,3,5-Trimethylbenzene	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC
59. Vinyl Chloride	U		μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A WC

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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Order: 97294 Page: 59 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-107D-073020

Chain of Custody:

184381

Client Project Name: RTT

RTTR (1-10860)

Sample No:

Ground Water

Collect Date:
Collect Time:

07/30/20 18:00

Client Project No:
Sample Comments:

Definitions: Q: Qualifier (s

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-010E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-107D-073020

					Prepa	ration	Analysis		
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Ini	
60. m&p-Xylene	U	μg/L	2.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A W	
61.o-Xylene	U	μg/L	1.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A W	
‡ 62. Xylenes	U	μg/L	3.0	1.0	08/06/20	VM20H06A	08/06/20	VM20H06A W	

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-010 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-107D-073020

						Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acenaphthene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
2. Acenaphthylene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
3. Aniline	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
4. Anthracene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
5. Azobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
6.Benzo(a)anthracene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
7.Benzo(a)pyrene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
18. Carbazole	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
23. Chrysene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
25. Dibenzofuran	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ

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Order: 97294 60 of 98 Page: Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-107D-073020

Ground Water

Chain of Custody:

184381

18:00

Client Project Name: RTTR (1-10860)

Sample No:

Collect Date: Collect Time: 07/30/20

Client Project No:

Definitions:

Sample Comments:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS	Aliquot ID:	97294-010	Matrix: Ground Water
Method: EPA 3510C/EPA 8270E	Description	: MW-107D-073020	

Sample Matrix:

						Prepa	ration	Α	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
31.2,4-Dinitrotoluene	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
33. Fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJF
34. Fluorene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
35. Hexachlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
38. Hexachloroethane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
39. Indeno(1,2,3-cd)pyrene	U	V+	μg/L	2.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJI
40. Isophorone	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
43.2-Methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
44.3&4-Methylphenol	U		μg/L	10	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
45. Naphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
46.2-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
47.3-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
48.4-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
49. Nitrobenzene	U		μg/L	3.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
50.2-Nitrophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
51.4-Nitrophenol	U		μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
55. Di-n-octyl Phthalate	U	L+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
58. Phenanthrene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
59. Phenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
60. Pyrene	U	L+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
61. Pyridine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/07/20	S620H07C	GJ



Order: 97294 Page: 61 of 98 Date: 08/12/20

Applied Science & Technology, MW-107D-073020 Chain of Custody: 184381 Client Identification: Sample Description: Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 18:00 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. pH, Electrometric Aliquot ID: 97294-010A **Matrix: Ground Water** Method: EPA 9040C Description: MW-107D-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 08/04/20 14:42 W D20H04A AMW 1.pH 8.02 Н pH Units -1.00 1.0 NA NA ‡ 2.Temperature 21 °C 10 1.0 NA NA 08/04/20 14:42 W D20H04A AMW 97294-010A Matrix: Ground Water Inorganic Anions by IC Aliquot ID: Method: EPA 9056A Description: MW-107D-073020 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution P. Date A. Batch Init. Result P. Batch A. Date 10000 WC20H03A VO 1. Chloride 27000 μg/L 1.0 08/04/20 PW20H03C 08/04/20 Residue, Filterable (TDS) Aliquot ID: 97294-010A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-107D-073020 Preparation Analysis Q Units Reporting Limit P. Date Parameter(s) Result Dilution P. Batch A. Batch Init. A. Date 1. Total Dissolved Solids 390000 μg/L 50000 1.3 08/05/20 WH20H05C 08/07/20 WH20H05C CMB Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: 97294-010B Matrix: Ground Water Method: SM 4500-NH3 G-2011 Description: MW-107D-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 32 1. Ammonia-N μg/L 10 1.0 08/07/20 PW20H07A 08/07/20 WU20H07B AMW

RSN: 97294-200812090936



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-011

Order: 97294 Page: 62 of 98 Date: 08/12/20

Client Identification:	Applied Science & Teclinc Brighton	hnology,	5	Sample De	scription: MW-10	8-073120	1	Chain	of Custody:	184382	
Client Project Name:	RTTR (1-10860)		5	Sample No	:			Collec	t Date:	07/31/20	
Client Project No:	1-10860		5	Sample Ma	trix: Groun	d Water		Collec	t Time:	08:25	
Sample Comments:											
Definitions:	Q: Qualifier (see definiti	ons at end	of report)	NA: Not	Applicable ‡: Pa	rameter n	ot included in NEL	AC Scope of A	nalysis.		
Cyanide, Free (witho	out distillation)				Aliq	uot ID:	97294-011C	Matrix: G	round Water		
Method: ASTM D723	· ·				Des	cription:	MW-108-073120				
							Prepar	ation	Ar	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
‡ 1. Cyanide, Free		0.0087	*	mg/L	0.0050	1.0	08/05/20	PW20H05C	08/05/20	WQ20H05A	VO.
Mercury by CVAFS,	Low-Level, Total				Aliq	uot ID:	97294-011F	Matrix: G	round Water		
Method: EPA 1631E					Des	cription:	MW-108-073120				
							Prepar	ation	Ar	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init
1. Mercury		3.2		ng/L	0.50	0.99	08/07/20	PM20H07B	08/07/20	M520H07A	CJA
Trace Elements by IC	CP/MS, Total Recoverab	le			Aliq	uot ID:	97294-011D	Matrix: G	round Water		
Method: EPA 3005A	(Total Recoverable)/EPA	6020A			Des	cription:	MW-108-073120				
							Prepar	ation	Ar	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Arsenic		U		μg/L	5.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLF
2.Barium		340		μg/L	100	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLF
3. Chromium		19		μg/L	10	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLŀ
4. Copper		27		μg/L	4.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLŀ
5.Lead		64		μg/L	3.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLŀ
6. Manganese		U		μg/L	50	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLŀ
7. Nickel		U		μg/L	20	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLŀ
8. Selenium		U		μg/L	5.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLŀ
9. Silver		U		μg/L	0.20	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLF
10. Vanadium		U		μg/L	4.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLF
11. Zinc		93	LLV+	μg/L	50	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLF
Mercury by CVAAS,	Total				Aliq	uot ID:	97294-011D	Matrix: G	round Water		
Method: EPA 7470A					Des	cription:	MW-108-073120				
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	Prepar P. Date	ation P. Batch	Ar A. Date	nalysis A. Batch	Init
1. Mercury		U		μg/L	0.20	1.0	08/04/20	PM20H04B	08/05/20	M720H05A	AVO
Polychlorinated Biph	nenyls (PCBs)				Aliq	uot ID:	97294-011	Matrix: G	round Water		
Method: EPA 3510C/					Des	cription:	MW-108-073120				
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	Prepar P. Date	ation P. Batch	A. Date	nalysis A. Batch	Init
		rvoduit	•	Ointo	Toporting Limit	ווטווטוום	i . Date	i . Datoii	/ l. Dale	A. Daton	
raiameter(s)	1914 Holloway Drive		Holt, MI	48842	7	T: (517) 699	9-0345	F: (51	7) 699-0388		



Order: 97294 Page: 63 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-108-073120

Ground Water

Chain of Custody:

184382

08:25

Client Project Name:

RTTR (1-10860)

Sample No:

Sample Matrix:

Collect Date:
Collect Time:

07/31/20

Client Project No:

Sample Comments:

Definitions: Q

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 97294-011 Matrix: Ground Water

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

					-				
						Prepa	ration	А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
‡ 8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
‡ 9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID:

Description: MW-108-073120

97294-011E

Description: MW-108-073120

Matrix: Ground Water

Method: EPA 5030C/EPA 8260D

22. Dibromomethane

Preparation Analysis Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. Parameter(s) 1. Acetone U V+ μg/L 200 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM ‡ 2. Acrylonitrile U 40 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM μg/L 3. Benzene U 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM μg/L 4. Bromobenzene U 10 20 08/05/20 VB20H05A VB20H05A KCM 08/05/20 μg/L U 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM 5. Bromochloromethane μg/L 6. Bromodichloromethane U 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM μg/L 7. Bromoform U 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM ua/L U 8. Bromomethane μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM 9.2-Butanone U 40 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM μg/L 10. n-Butylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM 11. sec-Butylbenzene U 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM μg/L 12. tert-Butylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM 13 Carbon Disulfide U 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM μg/L 14. Carbon Tetrachloride U 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM μg/L 15. Chlorobenzene u 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM μg/L 16. Chloroethane U μg/L 40 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM 08/05/20 17. Chloroform U 10 20 VB20H05A VB20H05A KCM μg/L 08/05/20 18. Chloromethane U 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM ua/L U 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM 19.2-Chlorotoluene μg/L ‡ 20.1,2-Dibromo-3-chloropropane (SIM) U 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM μg/L 21. Dibromochloromethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM

> 1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

μg/L

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20

08/05/20

10

F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584

08/05/20

VB20H05A

U

VB20H05A KCM



Order: 97294 64 of 98 Page: Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-108-073120

Ground Water

Chain of Custody:

184382

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/31/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

Collect Time:

08:25

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-011E **Matrix: Ground Water**

Method: EPA 5030C/EPA 8260D Description: MW-108-073120

					Prepa	aration	Д	Analysis	
Parameter(s)	Result	Q Uni	s Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In
23.1,2-Dichlorobenzene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
24.1,3-Dichlorobenzene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
25.1,4-Dichlorobenzene	U	μg/	L 20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
26. Dichlorodifluoromethane	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
27.1,1-Dichloroethane	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
28.1,2-Dichloroethane	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
29.1,1-Dichloroethene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
30. cis-1,2-Dichloroethene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
31. trans-1,2-Dichloroethene	U	μg/	L 20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
32.1,2-Dichloropropane	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
33. cis-1,3-Dichloropropene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
34. trans-1,3-Dichloropropene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
35. Ethylbenzene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
36. Ethylene Dibromide	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	٠k
37.2-Hexanone	U	V+ µg/	L 50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
38. Isopropylbenzene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	٠ŀ
39.4-Methyl-2-pentanone	U	μg/	L 100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
40. Methylene Chloride	U	μg/	L 20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
41.2-Methylnaphthalene	U	μg/	L 100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	k
42.MTBE	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
43. Naphthalene	U	μg/	L 20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
44. n-Propylbenzene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	· ŀ
45. Styrene	U	μg/	L 20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
46.1,1,1,2-Tetrachloroethane	U	μg/	_ 20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
47.1,1,2,2-Tetrachloroethane	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
48. Tetrachloroethene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
49. Toluene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
50.1,2,4-Trichlorobenzene	U	μg/	_ 20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
51.1,1,1-Trichloroethane	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
52.1,1,2-Trichloroethane	U	μg/	_ 20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	· ŀ
53. Trichloroethene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ŀ
54. Trichlorofluoromethane	U	μg/		20	08/05/20	VB20H05A	08/05/20	VB20H05A	· k
55.1,2,3-Trichloropropane	U	μg/	L 20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	(k
56.1,2,3-Trimethylbenzene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	۱ k
57. 1,2,4-Trimethylbenzene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	K
58.1,3,5-Trimethylbenzene	U	μg/	L 10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	ιK
59. Vinyl Chloride	U	μg/		20	08/05/20	VB20H05A	08/05/20	VB20H05A	K

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Order: 97294 65 of 98 Page: Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Volatile Organic Compounds (VOCs) by GC/MS

Inc. - Brighton

Sample Description: MW-108-073120

Ground Water

Aliquot ID:

97294-011E

Chain of Custody:

Matrix: Ground Water

184382

Client Project Name:

RTTR (1-10860) Sample No: Collect Date:

07/31/20

Client Project No:

Definitions:

Sample Comments:

Sample Matrix:

Collect Time: 08:25

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Method: EPA 5030C/EPA 8260D

Description: MW-108-073120 Preparation Analysis Dilution P. Date P. Batch A. Date 20 20 08/05/20 VB20H05A 08/05/20

Reporting Limit Parameter(s) Result Q Units A. Batch Init. 60. m&p-Xylene U μg/L VB20H05A KCM 61.o-Xylene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM ‡ 62. Xylenes U μg/L 30 20 08/05/20 VB20H05A 08/05/20 VB20H05A KCM

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-011 **Matrix: Ground Water**

Method: EPA 3510C/EPA 8270E Description: MW-108-073120

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
2. Acenaphthylene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
3. Aniline	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
4. Anthracene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
5. Azobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
18. Carbazole	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
23. Chrysene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
25. Dibenzofuran	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF

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Order: 97294 Page: 66 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-108-073120

Ground Water

Chain of Custody:

184382

Client Project Name:

RTTR (1-10860)

Sample No:
Sample Matrix:

Collect Date:
Collect Time:

07/31/20 08:25

Client Project No:

Sample Comments:

Definitions: Q: Quali

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-011 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-108-073120

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
33. Fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
34. Fluorene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
35. Hexachlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
38. Hexachloroethane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
40. Isophorone	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
43.2-Methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
44.3&4-Methylphenol	U		μg/L	10	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
45. Naphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
46.2-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
47.3-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
48.4-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
49. Nitrobenzene	U		μg/L	3.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
50.2-Nitrophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
51.4-Nitrophenol	U		μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
55. Di-n-octyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
58. Phenanthrene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
59. Phenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
60. Pyrene	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
61. Pyridine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF



Order: 97294 Page: 67 of 98 Date: 08/12/20

Client Identification:	Applied Science & Technology,		Sample De	scription: MW-10	8-073120		Chair	of Custody:	184382	
Olicat Basis et Name	Inc Brighton		OI- N-				0-11-	, -4 D-4	07/04/00	
Client Project Name:	RTTR (1-10860)		Sample No	:			Colle	ct Date:	07/31/20	
Client Project No:	1-10860		Sample Ma	trix: Ground	d Water		Colle	ct Time:	08:25	
Sample Comments:										
Definitions:	Q: Qualifier (see definitions at end	of rep	ort) NA: Not	Applicable ‡: Pa	rameter n	ot included in NEL	AC Scope of A	Analysis.		
pH, Electrometric				Aliq	uot ID:	97294-011A	Matrix: (Fround Water		
Method: EPA 9040C				Des	cription:	MW-108-073120				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepar P. Date	ation P. Batch	An Date	alysis A. Batch	Init.
				· · ·		NA				
1.pH ‡ 2.Temperature	12.3	Н	pH Units °C	-1.00 1.0	1.0 1.0	NA NA	NA NA	08/04/20 21:09 08/04/20 21:09		
+ 2. Temperature	21		O	1.0	1.0	INA	INA	00/04/20 21:03	W D201104D	JIVIIC
Inorganic Anions by	IC			Aliq	uot ID:	97294-011A	Matrix: 0	Fround Water		
Method: EPA 9056A				Des	cription:	MW-108-073120				
						Prepar	ation	An	alysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Chloride										
1. Chionae	26000		μg/L	10000	1.0	08/04/20	PW20H03C	08/04/20	WC20H03A	VO
			μg/L	10000					WC20H03A	VO
Residue, Filterable (** Method: SM 2540 C-2	TDS)		μg/L	10000 Aliq	uot ID:	08/04/20 97294-011A MW-108-073120		08/04/20 Ground Water	WC20H03A	VO
Residue, Filterable (TDS)		µg/L	10000 Aliq	uot ID:	97294-011A	Matrix: (Ground Water	WC20H03A	VO
Residue, Filterable (TDS)	Q	µg/L Units	10000 Aliq	uot ID:	97294-011A MW-108-073120 Prepar	Matrix: (Ground Water		VO VO
Residue, Filterable (** Method: SM 2540 C-2	TDS) 2011 Result	Q		Aliq Des	uot ID: cription:	97294-011A MW-108-073120 Prepar	Matrix: (Ground Water	alysis	Init.
Residue, Filterable (*) Method: SM 2540 C-2 Parameter(s) 1. Total Dissolved	TDS) 2011 Result Solids 1100000	Q	Units	Aliq Des Reporting Limit	uot ID: cription: Dilution 1.3	97294-011A MW-108-073120 Prepar P. Date 08/05/20	Matrix: (ation P. Batch WH20H05C	An A. Date 08/07/20	alysis A. Batch	Init.
Residue, Filterable (** Method: SM 2540 C-: Parameter(s) 1. Total Dissolved Nitrogen, Ammonia (**	TDS) 2011 Result Solids 1100000 (Auto Analyzer)	Q	Units	Aliq Des Reporting Limit 50000	uot ID: cription: Dilution 1.3 uot ID:	97294-011A MW-108-073120 Prepar P. Date 08/05/20 97294-011B	Matrix: (ation P. Batch WH20H05C	Ground Water An A. Date	alysis A. Batch	Init.
Residue, Filterable (*) Method: SM 2540 C-2 Parameter(s) 1. Total Dissolved	TDS) 2011 Result Solids 1100000 (Auto Analyzer)	Q	Units	Aliq Des Reporting Limit 50000	uot ID: cription: Dilution 1.3 uot ID:	97294-011A MW-108-073120 Prepar P. Date 08/05/20 97294-011B MW-108-073120	Matrix: (ation P. Batch WH20H05C Matrix: (An A. Date 08/07/20 Ground Water	alysis A. Batch WH20H05C	Init.
Residue, Filterable (** Method: SM 2540 C-: Parameter(s) 1. Total Dissolved Nitrogen, Ammonia (**	TDS) 2011 Result Solids 1100000 (Auto Analyzer)	Q	Units	Aliq Des Reporting Limit 50000	uot ID: cription: Dilution 1.3 uot ID:	97294-011A MW-108-073120 Prepar P. Date 08/05/20 97294-011B MW-108-073120 Prepar	Matrix: (ation P. Batch WH20H05C Matrix: (An A. Date 08/07/20 Ground Water	alysis A. Batch	Init.



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-012

Order: 97294 Page: 68 of 98 Date: 08/12/20

Applied Science & Technology, MW-109D-073020 Chain of Custody: 184382 Client Identification: Sample Description: Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 16:50 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-012C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-109D-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.15 mg/L 0.025 5.0 08/05/20 PW20H05C 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-012F Matrix: Ground Water Method: EPA 1631E Description: MW-109D-073020 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 2.1 0.50 M520H07A CJA 1. Mercury ng/L 0.99 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-012D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-109D-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic U 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium 510 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 3. Chromium U PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L U 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 4. Copper μg/L 5.Lead П μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese U μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U μg/L 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 9. Silver μg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium U μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc U LLV+ μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-012D Matrix: Ground Water Description: MW-109D-073020 Method: EPA 7470A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) Matrix: Ground Water Aliquot ID: 97294-012 Method: EPA 3510C/EPA 8082A Description: MW-109D-073020 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584 8660 S. Mackinaw Trail



Order: 97294 Page: 69 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-109D-073020

Ground Water

Chain of Custody:

184382

Client Project Name: F

RTTR (1-10860)

Sample No:

Sample Matrix:

Collect Date:

07/30/20

Client Project No:
Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Collect Time:

16:50

Polychlorinated Biphenyls (PCBs)

Aliquot ID: 97294-012

Matrix: Ground Water

Method: EPA 3510C/EPA 8082A Description: MW-109D-073020

						Prepa	ration	A	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Ir
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BI
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BI
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BI
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BI
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BI
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BI
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BI
8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BI
9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BI

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-012E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-109D-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
3. Benzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
10. n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
12.tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 70 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

Inc. - Brighton

Sample Description: MW-109D-073020

Chain of Custody:

184382

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860

Volatile Organic Compounds (VOCs) by GC/MS

Sample Matrix:

Ground Water Collect Time: 16:50

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Matrix: Ground Water

Aliquot ID: 97294-012E

volatile Organic Compounds (vocs) by GC/MS					uot ib.	97294-012E	matrix. C	oround water		
Method: EPA 5030C/EPA 8260D				Des	cription:	MW-109D-073020				
						Prepara	tion	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
23.1,2-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
24.1,3-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
25.1,4-Dichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
26. Dichlorodifluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
27.1,1-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
28.1,2-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
29.1,1-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
30. cis-1,2-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
31.trans-1,2-Dichloroethene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
32.1,2-Dichloropropane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI\
33. cis-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
34. trans-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
35. Ethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
36. Ethylene Dibromide	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
37.2-Hexanone	U	V+	μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
38. Isopropylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
39.4-Methyl-2-pentanone	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
40. Methylene Chloride	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
‡ 41.2-Methylnaphthalene	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
42.MTBE	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
43. Naphthalene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
44.n-Propylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
45. Styrene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
46.1,1,1,2-Tetrachloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
47.1,1,2,2-Tetrachloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
48. Tetrachloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
49. Toluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
50.1,2,4-Trichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
51.1,1,1-Trichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
\$ 52.1,1,2-Trichloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
53. Trichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
54. Trichlorofluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
55.1,2,3-Trichloropropane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
‡ 56.1,2,3-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
57.1,2,4-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
58.1,3,5-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
59. Vinyl Chloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 71 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-109D-073020

Ground Water

Chain of Custody:

184382

16:50

Client Project Name: RTTF

RTTR (1-10860) Sample No:

Collect Date:

07/30/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Sample Matrix:

 Volatile Organic Compounds (VOCs) by GC/MS
 Aliquot ID:
 97294-012E
 Matrix: Ground Water

 Method: EPA 5030C/EPA 8260D
 Description:
 MW-109D-073020

					Preparation			Analysis
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
60.m&p-Xylene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
61.o-Xylene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
‡ 62. Xylenes	U	μg/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-012 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-109D-073020

Parameter(s)						Preparation		Analysis		
	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
1. Acenaphthene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
2. Acenaphthylene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
3. Aniline	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
4. Anthracene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
5. Azobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.
6.Benzo(a)anthracene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
15.4-Bromophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
18. Carbazole	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
20.2-Chloronaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
23. Chrysene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
25. Dibenzofuran	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
27. Diethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 72 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Base/Neutral/Acid Semivolatiles by GC/MS

Inc. - Brighton

Sample Description: MW-109D-073020

Ground Water

Chain of Custody:

184382

16:50

Client Project Name: F

RTTR (1-10860)

Sample No:

Sample Matrix:

Collect Date:
Collect Time:

07/30/20

Client Project No:
Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 97294-012 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-109D-073020

		_				Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	ln
29. Dimethyl Phthalate	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G٠
31.2,4-Dinitrotoluene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
32.2,6-Dinitrotoluene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.
33. Fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.
34. Fluorene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
35. Hexachlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
38. Hexachloroethane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
40. Isophorone	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
41.2-Methyl-4,6-dinitrophenol	U		μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
43.2-Methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
44.3&4-Methylphenol	U		μg/L	10	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
45. Naphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
46.2-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
47.3-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
48.4-Nitroaniline	U		μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
49. Nitrobenzene	U		μg/L	3.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
50.2-Nitrophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
51.4-Nitrophenol	U		μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
54. N-Nitrosodiphenylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
55. Di-n-octyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
58. Phenanthrene	2.7		μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
59. Phenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
60. Pyrene	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
61. Pyridine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	
63.2,4,5-Trichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	
64.2,4,6-Trichlorophenol	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	
	_									

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Order: 97294 Page: 73 of 98 Date: 08/12/20

Client Identification:	Applied Science & Technology, Inc Brighton		Sample De	scription: MW-10	9D-07302	20	Chair	of Custody:	184382	
Client Project Name:	RTTR (1-10860)		Sample No	:			Colle	ct Date:	07/30/20	
Client Project No:	1-10860		Sample Ma	trix: Groun	d Water		Colle	ct Time:	16:50	
Sample Comments:										
Definitions:	Q: Qualifier (see definitions at end	d of rep	oort) NA: Not	Applicable ‡: Pa	rameter n	not included in NELA	AC Scope of A	Analysis.		
pH, Electrometric				Aliq	uot ID:	97294-012A	Matrix: (Ground Water		
Method: EPA 9040C				Des	cription:	MW-109D-073020	ı			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepara P. Date	ation P. Batch	Ar A. Date	nalysis A. Batch	Init.
1.pH	12.5	5 E	pH Units	-1.00	1.0	NA	NA	08/04/20 21:14	WD20H04D	JMK
‡ 2.Temperature	21		°C	1.0	1.0	NA	NA	08/04/20 21:14	WD20H04D	JMK
Inorganic Anions by Method: EPA 9056A	IC			-	uot ID:	97294-012A MW-109D-073020		Ground Water		
						Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Chloride	30000)	μg/L	10000	1.0	08/04/20	PW20H03C	08/04/20	WC20H03A	VO
Residue, Filterable (** Method: SM 2540 C-:	•			•	uot ID:	97294-012A MW-109D-073020		Ground Water		
					•	Prepara	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Total Dissolved	Solids 200000)	μg/L	50000	1.3	08/05/20	WH20H05C	08/07/20	WH20H05C	CMB
Nitrogen, Ammonia (Method: SM 4500-NH	•			-	uot ID: cription:	97294-012B MW-109D-073020		Ground Water		
_		_				Prepara			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Ammonia-N	3700)	μg/L	10	1.0	08/07/20	PW20H07A	08/07/20	WU20H07B	AMW



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-013

Order: 97294 Page: 74 of 98 Date: 08/12/20

Applied Science & Technology, Chain of Custody: 184382 Client Identification: Sample Description: MW-110S-073120 Inc. - Brighton RTTR (1-10860) 07/31/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:10 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-013C **Matrix: Ground Water** Method: ASTM D7237-10 Description: MW-110S-073120 Preparation Analysis Parameter(s) Result O Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free 0.0063 mg/L 0.0050 1.0 08/05/20 PW20H05C 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-013F Matrix: Ground Water Method: EPA 1631E Description: MW-110S-073120 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 0.90 0.50 M520H07A CJA 1. Mercury ng/L 0.99 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-013D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: MW-110S-073120 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic U 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium 390 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 3. Chromium 52 PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L 5.9 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 4. Copper μg/L 5.Lead U μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese U μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U μg/L 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 9. Silver μg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium U μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc U LLV+ μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-013D Matrix: Ground Water Method: EPA 7470A Description: MW-110S-073120 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) Matrix: Ground Water Aliquot ID: 97294-013 Method: EPA 3510C/EPA 8082A Description: MW-110S-073120 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A. Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584 8660 S. Mackinaw Trail



Order: 97294 Page: 75 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-110S-073120

Ground Water

Chain of Custody:

184382

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/31/20

Client Project No:

Sample Matrix:

Collect Time:

10:10

Sample Comments:

Definitions:

Polychlorinated Biphenyls (PCBs)

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 97294-013 **Matrix: Ground Water**

Method: EPA 3510C/EPA 8082A Description: MW-110S-073120

						Preparation		Analysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch I
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A E
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A E
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A E
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A E
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A E
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A E
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A E
8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A E
\$ 9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A E

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-013E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-110S-073120

		O Unito F			Preparation		Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
3. Benzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
10. n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
12.tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail

DCSID: G-610.19 (10/01/19)

Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 76 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Volatile Organic Compounds (VOCs) by GC/MS

Inc. - Brighton

Sample Description: MW-110S-073120

Ground Water

Aliquot ID:

97294-013E

Chain of Custody:

184382

Client Project Name:

RTTR (1-10860)

Sample No: Sample Matrix: Collect Date:

07/31/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Collect Time:

Matrix: Ground Water

10:10

Method: EPA 5030C/EPA 8260D Description: MW-110S-073120

D		•	11.25	.	D11 -11	Prepa			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
23.1,2-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
24.1,3-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
25.1,4-Dichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
26. Dichlorodifluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
27.1,1-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
28.1,2-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
29.1,1-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
30. cis-1,2-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
31.trans-1,2-Dichloroethene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
32.1,2-Dichloropropane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
33. cis-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
34. trans-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
35. Ethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
36. Ethylene Dibromide	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
37.2-Hexanone	U	V+	μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
38. Isopropylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
39.4-Methyl-2-pentanone	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
40. Methylene Chloride	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
41.2-Methylnaphthalene	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
42.MTBE	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
43. Naphthalene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
44.n-Propylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
45. Styrene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
46.1,1,1,2-Tetrachloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
47.1,1,2,2-Tetrachloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
48. Tetrachloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
49. Toluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
50.1,2,4-Trichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
51.1,1,1-Trichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
52.1,1,2-Trichloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
53. Trichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
54. Trichlorofluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
55.1,2,3-Trichloropropane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
56.1,2,3-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
57.1,2,4-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
58.1,3,5-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
59. Vinyl Chloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 77 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Volatile Organic Compounds (VOCs) by GC/MS

Inc. - Brighton

Sample Description: MW-110S-073120

Chain of Custody:

184382

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/31/20

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time:

e: **10:10**

Sample Comments:

Definitions: Q: Q:

Method: EPA 5030C/EPA 8260D

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 97294-013E Matrix: Ground Water

Description: MW-110S-073120

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
60. m&p-Xylene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
61.o-Xylene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 62. Xylenes	U		μg/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-013 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-110S-073120

						Prepa	ration	A	nalysis	
arameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init
1. Acenaphthene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
2. Acenaphthylene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
3. Aniline	U	G+	μg/L	4.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
4. Anthracene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
5. Azobenzene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
6. Benzo(a)anthracene	U	G+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
7. Benzo(a)pyrene	U	G+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
8. Benzo(b)fluoranthene	U	G+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
10. Benzo(k)fluoranthene	U	G+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
11. Benzyl Alcohol	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
12. Bis(2-chloroethoxy)methane	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
13. Bis(2-chloroethyl)ether	U	G+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
15.4-Bromophenyl Phenylether	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
17. Di-n-butyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
18. Carbazole	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
19.4-Chloro-3-methylphenol	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
20.2-Chloronaphthalene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
21.2-Chlorophenol	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
22.4-Chlorophenyl Phenylether	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
23. Chrysene	U	G+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
24. Dibenzo(a,h)anthracene	U	G+	μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
25. Dibenzofuran	U	G+	μg/L	4.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
26.2,4-Dichlorophenol	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
27. Diethyl Phthalate	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
28.2,4-Dimethylphenol	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 78 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-110S-073120

Ground Water

Chain of Custody:

184382

Client Project Name: F

RTTR (1-10860)

Sample No: Sample Matrix: Collect Date:

07/31/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Collect Time: 10:10

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-013 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-110S-073120

Method: EPA 3510C/EPA 8270E			Description: MW-110S-0/3120									
						Prepa	ration	Д	nalysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	In		
29. Dimethyl Phthalate	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.		
30.2,4-Dinitrophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.		
31.2,4-Dinitrotoluene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		
32.2,6-Dinitrotoluene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		
33. Fluoranthene	U	G+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		
34. Fluorene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		
35. Hexachlorobenzene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		
36. Hexachlorobutadiene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		
37. Hexachlorocyclopentadiene	U	V-	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		
38. Hexachloroethane	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		
39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		
40. Isophorone	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		
41.2-Methyl-4,6-dinitrophenol	U	G+	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C		
42.2-Methylnaphthalene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C		
43.2-Methylphenol	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
44.3&4-Methylphenol	U	G+	μg/L	10	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
45. Naphthalene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
46.2-Nitroaniline	U	G+	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C		
47.3-Nitroaniline	U	G+	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
48.4-Nitroaniline	U	G+	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
49. Nitrobenzene	U	G+	μg/L	3.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
50.2-Nitrophenol	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
51.4-Nitrophenol	U	G+	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
52. N-Nitrosodimethylamine	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
53. N-Nitrosodi-n-propylamine	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
54. N-Nitrosodiphenylamine	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C		
55. Di-n-octyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
56.2,2'-Oxybis(1-chloropropane)	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C		
57. Pentachlorophenol	U	V-	μg/L	20	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
58. Phenanthrene	U	G+	μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C		
59. Phenol	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	(
60. Pyrene	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C		
61. Pyridine	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C		
62.1,2,4-Trichlorobenzene	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C		
63.2,4,5-Trichlorophenol	U	G+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	C		
64.2,4,6-Trichlorophenol	U	G+	μg/L	4.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G		

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 79 of 98 Date: 08/12/20

Applied Science & Technology, MW-110S-073120 Chain of Custody: 184382 Client Identification: Sample Description: Inc. - Brighton RTTR (1-10860) 07/31/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 10:10 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. pH, Electrometric Aliquot ID: 97294-013A **Matrix: Ground Water** Method: EPA 9040C Description: MW-110S-073120 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 08/04/20 21:15 W D20H04D JMK 1.pH 12.4 Н pH Units -1.00 1.0 NA NA ‡ 2.Temperature 21 °C 10 1.0 NA NA 08/04/20 21:15 W D20H04D JMK 97294-013A Matrix: Ground Water Inorganic Anions by IC Aliquot ID: Method: EPA 9056A Description: MW-110S-073120 Preparation Analysis Parameter(s) Q Units Reporting Limit Dilution P. Date A. Batch Init. Result P. Batch A. Date 10000 WC20H03A VO 1. Chloride 42000 μg/L 1.0 08/04/20 PW20H03C 08/04/20 Residue, Filterable (TDS) Aliquot ID: 97294-013A Matrix: Ground Water Method: SM 2540 C-2011 Description: MW-110S-073120 Preparation Analysis Q Units Reporting Limit P. Date Parameter(s) Result Dilution P. Batch A. Batch Init. A. Date 1. Total Dissolved Solids 1500000 μg/L 50000 1.3 08/05/20 WH20H05C 08/07/20 WH20H05C CMB Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: 97294-013B Matrix: Ground Water Method: SM 4500-NH3 G-2011 Description: MW-110S-073120 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 1. Ammonia-N 4000 μg/L 10 1.0 08/07/20 PW20H07A 08/07/20 WU20H07B AMW



Order: 97294 Page: 80 of 98 Date: 08/12/20

Client Identification:	Applied Science & Tec	hnology,		Sample De	scription: MW-11	0D-07312	20	Chain	of Custody:	184382	
Client Project Name:	Inc Brighton RTTR (1-10860)	-		Sample No				Collec	t Date:	07/31/20	
,				•							
Client Project No:	1-10860			Sample Ma	trix: Groun	d Water		Collec	t Time:	11:30	
Sample Comments:											
Definitions:	Q: Qualifier (see definit	ions at end	of report) NA: Not	Applicable ‡: Pa	rameter n	not included in NEL	AC Scope of A	nalysis.		
Cyanide, Free (witho	out distillation)				Aliq	uot ID:	97294-014C	Matrix: G	round Water		
Method: ASTM D723	•				-		MW-110D-073120				
							Prepar	ation	Ar	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
‡ 1. Cyanide, Free		U	*	mg/L	0.0050	1.0	08/05/20	PW20H05C	08/05/20	WQ20H05A	VO
Mercury by CVAFS,	Low-Level, Total				Aliq	uot ID:	97294-014F	Matrix: G	round Water		
Method: EPA 1631E					Des	cription:	MW-110D-073120	0			
							Prepar	ration	Ar	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	lnit.
1. Mercury		3.6		ng/L	0.50	0.99	08/07/20	PM20H07B	08/07/20	M520H07A	CJA
-	CP/MS, Total Recoverab				•	uot ID:	97294-014D		round Water		
Method: EPA 3005A	(Total Recoverable)/EPA	A 6020A			Des	cription:	MW-110D-073120	0			
5 ()		D 11	0	11.36	5	D'1 ('	Prepar			nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Arsenic		U		μg/L	5.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	
2. Barium		530		μg/L	100	10	08/06/20	PT20H06B	08/06/20	T420H06A	
3. Chromium		34		μg/L	10	10	08/06/20	PT20H06B	08/06/20	T420H06A	
4. Copper		5.8		μg/L	4.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	
5. Lead		10		μg/L	3.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	
6. Manganese		U		μg/L	50	10	08/06/20	PT20H06B	08/06/20	T420H06A	
7. Nickel		U		μg/L	20	10	08/06/20	PT20H06B	08/06/20	T420H06A	
8. Selenium		U		μg/L	5.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	
9. Silver		U		μg/L	0.20	10	08/06/20	PT20H06B	08/06/20	T420H06A	
10. Vanadium 11. Zinc		U	LLV+	μg/L μg/L	4.0 50	10 10	08/06/20 08/06/20	PT20H06B PT20H06B	08/06/20 08/06/20	T420H06A T420H06A	
				P9'-		.0	00,00,20		00/00/20	20.10071	02
Mercury by CVAAS,	Total				Aliq	uot ID:	97294-014D	Matrix: G	round Water		
Method: EPA 7470A					Des	cription:	MW-110D-073120	0			
							Prepar	ation	Ar	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	lnit.
1. Mercury		U		μg/L	0.20	1.0	08/04/20	PM20H04B	08/05/20	M720H05A	AVC
Polychlorinated Biph	nenyls (PCBs)				Aliq	uot ID:	97294-014	Matrix: G	round Water		
Method: EPA 3510C/	EPA 8082A				Des	cription:	MW-110D-073120	0			
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution	Prepar P. Date	ation P. Batch	Ar A. Date	nalysis A. Batch	lnit.
	1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail		_	n, MI 48116 , MI 49601	Ī	T: (517) 699 T: (810) 220 T: (231) 775	0-3300	F: (81	7) 699-0388 0) 220-3311 1) 775-8584		



Order: 97294 Page: 81 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: MW-110D-073120

Ground Water

Aliquot ID:

97294-014

Chain of Custody:

Matrix: Ground Water

184382

Client Project Name: RT

RTTR (1-10860)

Sample No:

Collect Date:

07/31/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs)

Sample Matrix: Gro

Collect Time:

Time: 11:30

Method: EPA 3510C/EPA 8082A Description: MW-110D-073120

						Preparation		А	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA
8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BD
9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-014E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-110D-073120

		O Unito F			Preparation		Analysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
3. Benzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
10. n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
12.tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

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Order: 97294 82 of 98 Page: Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-110D-073120

Ground Water

Chain of Custody:

184382

Client Project Name: RTTR (1-10860)

Sample No: Sample Matrix: Collect Date: Collect Time: 07/31/20

11:30

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS	Aliquot ID:	97294-014E	Matrix: Ground Water
Method: EPA 5030C/EPA 8260D	Description:	MW-110D-073120	

						Prepa	ration	A	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Ini
23.1,2-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
24.1,3-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
25.1,4-Dichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
26. Dichlorodifluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
27.1,1-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
28.1,2-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
29.1,1-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
30. cis-1,2-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
31. trans-1,2-Dichloroethene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
32.1,2-Dichloropropane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
33. cis-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
34. trans-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
35. Ethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
36. Ethylene Dibromide	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
37.2-Hexanone	U	V+	μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
38. Isopropylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
39.4-Methyl-2-pentanone	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
40. Methylene Chloride	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
41.2-Methylnaphthalene	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
42.MTBE	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
43. Naphthalene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
44. n-Propylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
45. Styrene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
46.1,1,1,2-Tetrachloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
47.1,1,2,2-Tetrachloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
48. Tetrachloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
49. Toluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
50.1,2,4-Trichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
51.1,1,1-Trichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
52.1,1,2-Trichloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
53. Trichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
54. Trichlorofluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
55.1,2,3-Trichloropropane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
56.1,2,3-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
57.1,2,4-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
58.1,3,5-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
59. Vinyl Chloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC

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T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 83 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: MW-110D-073120

Chain of Custody:

184382

Client Project Name: RT

RTTR (1-10860)

Sample No:

Collect Date:

07/31/20

Client Project No:

1-10860

Sample Matrix:

Ground Water Collect Time:

ect Time: 11:30

Sample Comments:

Definitions: Q: Q

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-014E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: MW-110D-073120

					Prepa	aration	Δ	nalysis
Parameter(s)	Result	Q Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
60. m&p-Xylene	U	μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
61.o-Xylene	U	μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
‡ 62. Xylenes	U	ua/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-014 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: MW-110D-073120

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Acenaphthene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
2. Acenaphthylene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
3. Aniline	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
4. Anthracene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
5. Azobenzene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
6.Benzo(a)anthracene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
7.Benzo(a)pyrene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
8.Benzo(b)fluoranthene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL:
9. Benzo(ghi)perylene	U	L+	μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
10.Benzo(k)fluoranthene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
11. Benzyl Alcohol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
13. Bis(2-chloroethyl)ether	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
15.4-Bromophenyl Phenylether	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
17. Di-n-butyl Phthalate	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
18. Carbazole	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
19.4-Chloro-3-methylphenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL:
20.2-Chloronaphthalene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
21.2-Chlorophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
23. Chrysene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJ
24. Dibenzo(a,h)anthracene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
25. Dibenzofuran	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
26.2,4-Dichlorophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
27. Diethyl Phthalate	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
28.2,4-Dimethylphenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL:

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Order: 97294 Page: 84 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: MW-110D-073120

Ground Water

Chain of Custody:

184382

Client Project Name:

RTTR (1-10860)

Sample No:

Sample Matrix:

Collect Date: Collect Time: 07/31/20

11:30

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Aliquot ID: 97294-014 **Matrix: Ground Water** Base/Neutral/Acid Semivolatiles by GC/MS Method: EPA 3510C/EPA 8270E Description: MW-110D-073120

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
29. Dimethyl Phthalate	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
30.2,4-Dinitrophenol	U		μg/L	100	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
31.2,4-Dinitrotoluene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
32.2,6-Dinitrotoluene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
33. Fluoranthene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
34. Fluorene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
35. Hexachlorobenzene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
36. Hexachlorobutadiene	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
37. Hexachlorocyclopentadiene	U	V+	μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
38. Hexachloroethane	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
40. Isophorone	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
41.2-Methyl-4,6-dinitrophenol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
42.2-Methylnaphthalene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
43.2-Methylphenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
‡ 44.3&4-Methylphenol	U		μg/L	10	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
45. Naphthalene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
46.2-Nitroaniline	U		μg/L	20	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
47.3-Nitroaniline	U		μg/L	20	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
48.4-Nitroaniline	U		μg/L	20	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
49. Nitrobenzene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
50.2-Nitrophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
51.4-Nitrophenol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
52. N-Nitrosodimethylamine	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
54. N-Nitrosodiphenylamine	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
55. Di-n-octyl Phthalate	U	L+	μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
57. Pentachlorophenol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
58. Phenanthrene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
59. Phenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
60. Pyrene	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
61. Pyridine	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
62.1,2,4-Trichlorobenzene	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
63.2,4,5-Trichlorophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
64.2,4,6-Trichlorophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS

lab@fibertec.us



Order: 97294 Page: 85 of 98 Date: 08/12/20

Client Identification:	Applied Science & Technology, Inc Brighton		Sample De	scription: MW-11	0D-07312	20	Chair	n of Custody:	184382	
Client Project Name:	RTTR (1-10860)		Sample No	:			Colle	ct Date:	07/31/20	
Client Project No:	1-10860		Sample Ma	trix: Groun	d Water		Colle	ct Time:	11:30	
Sample Comments:										
Definitions:	Q: Qualifier (see definitions at end	of rep	ort) NA: Not	Applicable ‡: Pa	rameter n	not included in NELA	AC Scope of A	Analysis.		
pH, Electrometric				Aliq	uot ID:	97294-014A	Matrix: (Ground Water		
Method: EPA 9040C				Des	cription:	MW-110D-073120)			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Prepara P. Date	ation P. Batch	Ar A. Date	nalysis A. Batch	Init.
1.pH	12.5	E	pH Units	-1.00	1.0	NA	NA	08/04/20 21:16		JMK
‡ 2.Temperature	21		°C	1.0	1.0	NA	NA	08/04/20 21:16		
Inorganic Anions by Method: EPA 9056A	IC			•	uot ID:	97294-014A MW-110D-073120		Ground Water		
						Prepara		Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Chloride	37000		μg/L	10000	1.0	08/04/20	PW20H03C	08/04/20	WC20H03A	VO
Residue, Filterable (•			•	uot ID:	97294-014A MW-110D-073120		Ground Water		
Wethou. SW 2540 C-	2011			Des	cription.	Prepara		Δr	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Total Dissolved	Solids 1800000		μg/L	50000	1.3	08/05/20	WH20H05C	08/07/20	WH20H05C	CMB
Nitrogen, Ammonia Method: SM 4500-Ni	• •			•	uot ID: cription:	97294-014B MW-110D-073120		Ground Water		
5 ()		_			5 0.00	Prepara			nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Ammonia-N	3500		μg/L	10	1.0	08/07/20	PW20H07A	08/07/20	WU20H07B	AMW



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-015

Order: 97294 Page: 86 of 98 Date: 08/12/20

Applied Science & Technology, Chain of Custody: 184382 Client Identification: Sample Description: TMW-26-073020 Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:40 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. Cyanide, Free (without distillation) Aliquot ID: 97294-015C **Matrix: Ground Water** Method: ASTM D7237-10 Description: TMW-26-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Cyanide, Free U mg/L 0.0050 1.0 08/05/20 PW20H05C 08/05/20 WQ20H05A VO Mercury by CVAFS, Low-Level, Total Aliquot ID: 97294-015F Matrix: Ground Water Method: EPA 1631E Description: TMW-26-073020 Preparation Analysis Parameter(s) Q Reporting Limit Result Units Dilution P. Date P. Batch A. Date A. Batch Init. 30 5.0 M520H07A CJA 1. Mercury ng/L 9.9 08/07/20 PM20H07B 08/07/20 Trace Elements by ICP/MS, Total Recoverable Aliquot ID: 97294-015D Matrix: Ground Water Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: TMW-26-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 1. Arsenic U 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 2. Barium U 100 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 3. Chromium 14 PT20H06B 08/06/20 10 10 08/06/20 T420H06A JLH μg/L 4. Copper 11 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH μg/L 5.Lead П μg/L 3.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 6. Manganese U μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 7. Nickel 10 08/06/20 PT20H06B 08/06/20 μg/L 20 T420H06A JLH U μg/L 8. Selenium 5.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH U 9. Silver µg/L 0.20 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 10. Vanadium 14 μg/L 4.0 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH 11.Zinc U LLV+ μg/L 50 10 08/06/20 PT20H06B 08/06/20 T420H06A JLH Mercury by CVAAS, Total Aliquot ID: 97294-015D Matrix: Ground Water Description: TMW-26-073020 Method: EPA 7470A Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. U 1. Mercury 0.20 08/04/20 PM20H04B M720H05A AVC μg/L 1.0 08/05/20 Polychlorinated Biphenyls (PCBs) 97294-015 Matrix: Ground Water Aliquot ID: Method: EPA 3510C/EPA 8082A Description: TMW-26-073020 Preparation Analysis P. Date Parameter(s) Result Q Units Reporting Limit Dilution P. Batch A Date A. Batch Init. 1914 Holloway Drive Holt, MI 48842 T: (517) 699-0345 F: (517) 699-0388 11766 E. Grand River Brighton, MI 48116 T: (810) 220-3300 F: (810) 220-3311 8660 S. Mackinaw Trail Cadillac, MI 49601 T: (231) 775-8368 F: (231) 775-8584



Order: 97294 Page: 87 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: TMW-26-073020

Chain of Custody:

184382

Client Project Name:

RTTR (1-10860)

Sample No: Sample Matrix: Collect Date: Collect Time: 07/30/20

14:40

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) Method: EPA 3510C/EPA 8082A

Aliquot ID:

Ground Water

97294-015

Matrix: Ground Water

Description: TMW-26-073020

						Prepa	ration	A	nalysis			
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.			
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
‡ 8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			
‡ 9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA			

Volatile Organic Compounds (VOCs) by GC/MS

Method: EPA 5030C/EPA 8260D

Aliquot ID:

97294-015E

Matrix: Ground Water

Description: TMW-26-073020

						Prepa	ration	A	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
3. Benzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
10.n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
12. tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601

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F: (517) 699-0388 F: (810) 220-3311 F: (231) 775-8584



Order: 97294 Page: 88 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: TMW-26-073020

Ground Water

Chain of Custody:

184382

14:40

Client Project Name: I

RTTR (1-10860)

Sample No:
Sample Matrix:

Collect Date:
Collect Time:

07/30/20

Client Project No:

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS

Aliquot ID: 97294-015E

Matrix: Ground Water

Description: TMW-26-073020

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
23.1,2-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
24.1,3-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
25.1,4-Dichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
26. Dichlorodifluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
27.1,1-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCN
28.1,2-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
29.1,1-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
30. cis-1,2-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
31.trans-1,2-Dichloroethene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
32.1,2-Dichloropropane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
33. cis-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
34. trans-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCI
35. Ethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
36. Ethylene Dibromide	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
37.2-Hexanone	U	V+	μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
38. Isopropylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
39.4-Methyl-2-pentanone	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
40. Methylene Chloride	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
41.2-Methylnaphthalene	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
42.MTBE	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
43. Naphthalene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
44. n-Propylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
45. Styrene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
46.1,1,1,2-Tetrachloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
47.1,1,2,2-Tetrachloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
48. Tetrachloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
49. Toluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
50.1,2,4-Trichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
51.1,1,1-Trichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
52.1,1,2-Trichloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
53. Trichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
54. Trichlorofluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
55.1,2,3-Trichloropropane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
56.1,2,3-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
57.1,2,4-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
58.1,3,5-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC
59 Vinyl Chloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KC

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Order: 97294 Page: 89 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

Inc. - Brighton

Sample Description: TMW-26-073020

Chain of Custody:

184382

Client Project Name: RTTR (1-10860)

(1-10860) Sample No:

Collect Date:

07/30/20

Client Project No:

1-10860

Sample Matrix: Ground Water

Collect Time:

14:40

Sample Comments:

Definitions: Q: Qua

Q: Qualifier (see definitions at end of report) NA: Not Applicable #: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-015E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: TMW-26-073020

						Prepa	ration	Δ	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.
60. m&p-Xylene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
61.o-Xylene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM
‡ 62. Xylenes	U		μq/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A KCM

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-015 Matrix: Ground Water

Method: EPA 3510C/EPA 8270E Description: TMW-26-073020

						Prepa	ration	A	nalysis	
arameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Ini
1. Acenaphthene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
2. Acenaphthylene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
3. Aniline	U		μg/L	4.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
4. Anthracene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
5. Azobenzene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	AL
6. Benzo(a)anthracene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.
7. Benzo(a)pyrene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.
8. Benzo(b)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G.
9. Benzo(ghi)perylene	U	L+	μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
10. Benzo(k)fluoranthene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
11. Benzyl Alcohol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
13. Bis(2-chloroethyl)ether	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
15.4-Bromophenyl Phenylether	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	Α
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
17. Di-n-butyl Phthalate	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	. Δ
18. Carbazole	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	Α
19.4-Chloro-3-methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
20.2-Chloronaphthalene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	Α
21.2-Chlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	A
23. Chrysene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
24. Dibenzo(a,h)anthracene	U		μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
25. Dibenzofuran	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	Α
26.2,4-Dichlorophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G
27. Diethyl Phthalate	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	Α
28.2,4-Dimethylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	G

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Order: 97294 Page: 90 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Base/Neutral/Acid Semivolatiles by GC/MS

Inc. - Brighton

Sample Description: TMW-26-073020

Ground Water

Aliquot ID:

97294-015

Chain of Custody:

184382

14:40

Client Project Name:

RTTR (1-10860)

Sample No:

Sample Matrix:

Collect Date: Collect Time:

Matrix: Ground Water

07/30/20

Client Project No: Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Method: EPA 3510C/EPA 8270E				Des	cription:	TMW-26-073020				
						Prepar	ation	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
29. Dimethyl Phthalate	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
30.2,4-Dinitrophenol	U		μg/L	100	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
31.2,4-Dinitrotoluene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
32.2,6-Dinitrotoluene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
33. Fluoranthene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
34. Fluorene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
35. Hexachlorobenzene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
36. Hexachlorobutadiene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
37. Hexachlorocyclopentadiene	U	V+	μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
38. Hexachloroethane	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	2.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
40. Isophorone	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
41.2-Methyl-4,6-dinitrophenol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
42.2-Methylnaphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
43.2-Methylphenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
‡ 44.3&4-Methylphenol	U		μg/L	10	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
45. Naphthalene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
46.2-Nitroaniline	U		μg/L	20	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
47.3-Nitroaniline	U		μg/L	20	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
48.4-Nitroaniline	U		μg/L	20	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
49. Nitrobenzene	U		μg/L	3.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
50.2-Nitrophenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
51.4-Nitrophenol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
52. N-Nitrosodimethylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
54. N-Nitrosodiphenylamine	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
55. Di-n-octyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
57. Pentachlorophenol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
58. Phenanthrene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
59. Phenol	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
60. Pyrene	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
61. Pyridine	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
62.1,2,4-Trichlorobenzene	U		μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
63.2,4,5-Trichlorophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS

U

μg/L

5.0

08/06/20

PS20H06G

08/11/20

SN20H10C ALS

RSN: 97294-200812090936

5.0

64.2,4,6-Trichlorophenol



Order: 97294 Page: 91 of 98 Date: 08/12/20

Applied Science & Technology, TMW-26-073020 Chain of Custody: 184382 Client Identification: Sample Description: Inc. - Brighton RTTR (1-10860) 07/30/20 Client Project Name: Sample No: Collect Date: 1-10860 Sample Matrix: **Ground Water** Collect Time: 14:40 Client Project No: Sample Comments: Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis. pH, Electrometric Aliquot ID: 97294-015A **Matrix: Ground Water** Method: EPA 9040C Description: TMW-26-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch Init. 08/04/20 21:23 W D20H04D JMK 1.pH 12.0 Н pH Units -1.00 1.0 NA NA ‡ 2.Temperature 21 °C 10 1.0 NA NA 08/04/20 21:23 W D20H04D JMK 97294-015A Matrix: Ground Water Inorganic Anions by IC Aliquot ID: Method: EPA 9056A Description: TMW-26-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date A. Batch P. Batch A. Date Init. U 10000 WC20H03A VO 1. Chloride μg/L 1.0 08/04/20 PW20H03C 08/04/20 Residue, Filterable (TDS) Aliquot ID: 97294-015A Matrix: Ground Water Method: SM 2540 C-2011 Description: TMW-26-073020 Preparation Analysis Result Q Units Reporting Limit Dilution P. Date Parameter(s) P. Batch A. Batch Init. A. Date 1. Total Dissolved Solids 540000 μg/L 50000 1.3 08/05/20 WH20H05C 08/07/20 WH20H05C CMB Nitrogen, Ammonia (Auto Analyzer) Aliquot ID: 97294-015B Matrix: Ground Water Method: SM 4500-NH3 G-2011 Description: TMW-26-073020 Preparation Analysis Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch 3300 1. Ammonia-N μg/L 10 1.0 08/07/20 PW20H07A 08/07/20 WU20H07B AMW



DCSID: G-610.19 (10/01/19)

Analytical Laboratory Report Laboratory Project Number: 97294 Laboratory Sample Number: 97294-016

Order: 97294 Page: 92 of 98 Date: 08/12/20

	Client Identification: Applied Science & Te Inc Brighton			Sample Des	scription: Dup3-0	€W		Chain	of Custody:	184382	
Client Project Name:	Inc Brighton RTTR (1-10860)			Sample No:				Collec	t Date:	07/30/20	
Client Project No:	1-10860			Sample Ma	rix: Groun e	d Water		Collec	t Time:	NA	
Sample Comments:											
Definitions:	Q: Qualifier (see definit	ions at end	of repo	rt) NA: Not	Applicable ‡: Pa	rameter n	not included in NEL	LAC Scope of A	nalysis.		
Cyanide, Free (withou	ut distillation)				Aliq	uot ID:	97294-016C	Matrix: G	round Water		
Method: ASTM D7237	7-10				Des	cription:	Dup3-GW				
D		Daniella	_	Llaita	December 1 insit	Dilentian		aration		nalysis	l-ta
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
‡ 1. Cyanide, Free		U	*	mg/L	0.0050	1.0	08/05/20	PW20H05C	08/05/20	WQ20H05A	A VO
Mercury by CVAFS, L	ow-Level Total				Δlia	uot ID:	97294-016F	Matrix: G	round Water		
Method: EPA 1631E					-		Dup3-GW				
						•	Prena	aration	А	nalysis	
Parameter(s)		Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	Init.
1. Mercury		3.7		ng/L	0.50	0.99	08/07/20	PM20H07B	08/07/20	M520H07A	CJA
Trace Elements by IC	P/MS, Total Recoverab	le			Aliq	uot ID:	97294-016D	Matrix: G	round Water		
Method: EPA 3005A (Total Recoverable)/EPA	A 6020A			Des	cription:	Dup3-GW				
							Prepa	aration	A	nalysis	
		Result	Q	Units	Reporting Limit	Dilution		P. Batch	A. Date	A. Batch	lnit.
Parameter(s)			~	Onno	6						
Parameter(s) 1. Arsenic		U		μg/L	5.0	10	08/06/20	PT20H06B	08/06/20	T420H06A	JLH
` '									08/06/20 08/06/20	T420H06A T420H06A	
1. Arsenic		U		μg/L	5.0	10	08/06/20	PT20H06B			JLH
1. Arsenic 2. Barium		U 520		μg/L μg/L	5.0 100	10 10	08/06/20 08/06/20	PT20H06B PT20H06B	08/06/20	T420H06A	JLH
1. Arsenic 2. Barium 3. Chromium		520 33		µg/L µg/L µg/L	5.0 100 10	10 10 10	08/06/20 08/06/20 08/06/20	PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20	T420H06A T420H06A	JLF JLF
1. Arsenic 2. Barium 3. Chromium 4. Copper		U 520 33 7.1		μg/L μg/L μg/L μg/L	5.0 100 10 4.0	10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20	PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20	T420H06A T420H06A T420H06A	JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead		U 520 33 7.1 9.9		µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0	10 10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20	T420H06A T420H06A T420H06A T420H06A	JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese		U 520 33 7.1 9.9		µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50	10 10 10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	T420H06A T420H06A T420H06A T420H06A T420H06A	JLH JLH JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel		U 520 33 7.1 9.9 U		µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20	10 10 10 10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A	JLH JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium		U 520 33 7.1 9.9 U U U		µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0	10 10 10 10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver		U 520 33 7.1 9.9 U U U	LLV+	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0	10 10 10 10 10 10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium	T otal	U 520 33 7.1 9.9 U U U		µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0	10 10 10 10 10 10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium 11. Zinc	- Total	U 520 33 7.1 9.9 U U U		µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0 50	10 10 10 10 10 10 10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium 11. Zinc	- Cotal	U 520 33 7.1 9.9 U U U		µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0 50	10 10 10 10 10 10 10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 Dup3-GW	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 vound Water	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium 11. Zinc	「otal	U 520 33 7.1 9.9 U U U		µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0 50	10 10 10 10 10 10 10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 Prepa	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 vound Water	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium 11. Zinc Mercury by CVAAS, T Method: EPA 7470A	- Total	U 520 33 7.1 9.9 U U U U	LLV+	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0 50	10 10 10 10 10 10 10 10 10 10 10	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 Prepa	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH JLH JIH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium 11. Zinc Mercury by CVAAS, T Method: EPA 7470A Parameter(s) 1. Mercury		U 520 33 7.1 9.9 U U U U	LLV+	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0 50 Aliquation Desirements 0.20	10 10 10 10 10 10 10 10 10 10 10 10 Dilution	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 Prepa P. Date 08/04/20	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 round Water A. Date 08/05/20	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A A T420H06A A T420H06A A T420H06A A T420H06A A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH INTER JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium 11. Zinc Mercury by CVAAS, T Method: EPA 7470A	enyls (PCBs)	U 520 33 7.1 9.9 U U U U	LLV+	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0 50 Aliquate Desiration Desiration Aliquate Desiration	10 10 10 10 10 10 10 10 10 10 10 10 10 1	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 97294-016D Dup3-GW Prepa	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 round Water	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A A T420H06A A T420H06A A T420H06A A T420H06A A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH INTER JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium 11. Zinc Mercury by CVAAS, T Method: EPA 7470A Parameter(s) 1. Mercury	enyls (PCBs)	U 520 33 7.1 9.9 U U U U	LLV+	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0 50 Aliquate Desiration Desiration Aliquate Desiration	10 10 10 10 10 10 10 10 10 10 10 10 10 1	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 97294-016D Dup3-GW Prepa P. Date 08/04/20 97294-016 Dup3-GW	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 round Water A. Date 08/05/20	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A A T420H06A A T420H06A A T420H06A A T420H06A A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH INTER JLH JLH JLH JLH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium 11. Zinc Mercury by CVAAS, T Method: EPA 7470A Parameter(s) 1. Mercury	enyls (PCBs)	U 520 33 7.1 9.9 U U U U	LLV+	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0 50 Aliquate Desiration Desiration Aliquate Desiration	10 10 10 10 10 10 10 10 10 10 10 10 10 1	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 97294-016D Dup3-GW Prepa 08/04/20 97294-016 Dup3-GW Prepa	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 round Water A. Date 08/05/20	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A A T420H06A A T420H06A A T420H06A A T420H06A A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH JLH JIH
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium 11. Zinc Mercury by CVAAS, T Method: EPA 7470A Parameter(s) 1. Mercury Polychlorinated Biph Method: EPA 3510C/E	enyls (PCBs) EPA 8082A	U 520 33 7.1 9.9 U U U U U	Q Q	μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0 50 Aliquation Desirements Reporting Limit 0.20 Reporting Limit	10 10 10 10 10 10 10 10 10 10 10 10 10 1	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 97294-016D Dup3-GW Prepa P. Date 08/04/20 97294-016 Dup3-GW Prepa P. Date	PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B PT20H06B Matrix: Gi	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 round Water A. Date 08/05/20 round Water A. Date	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A M7420H06A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH A JL
1. Arsenic 2. Barium 3. Chromium 4. Copper 5. Lead 6. Manganese 7. Nickel 8. Selenium 9. Silver 10. Vanadium 11. Zinc Mercury by CVAAS, T Method: EPA 7470A Parameter(s) 1. Mercury Polychlorinated Biph Method: EPA 3510C/E	enyls (PCBs)	U 520 33 7.1 9.9 U U U U U	Q Q	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	5.0 100 10 4.0 3.0 50 20 5.0 0.20 4.0 50 Aliquation Desirements Reporting Limit 0.20 Reporting Limit	10 10 10 10 10 10 10 10 10 10 10 10 10 1	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 97294-016D Dup3-GW Prepa P. Date 08/04/20 97294-016 Dup3-GW Prepa P. Date	PT20H06B PT20H06B	08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 08/06/20 round Water A. Date 08/05/20	T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A T420H06A M7420H06A T420H06A	JLH JLH JLH JLH JLH JLH JLH JLH A JL



Order: 97294 Page: 93 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: Dup3-GW

Chain of Custody:

184382

Client Project Name:

RTTR (1-10860)

Sample No:

Sample Matrix:

Collect Date:
Collect Time:

07/30/20

NA

Client Project No:

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Ground Water

Polychlorinated Biphenyls (PCBs) Aliquot ID: 97294-016 Matrix: Ground Water

Method: EPA 3510C/EPA 8082A Description: Dup3-GW

Method. Li A 3310G/Li A 0002A	Description. Dups-GW									
						Prepa	ration	Д	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init.	
1. Aroclor-1016	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA	
2. Aroclor-1221	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA	
3. Aroclor-1232	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA	
4. Aroclor-1242	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA	
5. Aroclor-1248	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA	
6. Aroclor-1254	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA	
7. Aroclor-1260	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA	
‡ 8. Aroclor-1262	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA	
‡ 9. Aroclor-1268	U		μg/L	0.20	1.0	08/05/20	PS20H05E	08/05/20	SO20H05A BDA	

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-016E Matrix: Ground Water

Method: EPA 5030C/EPA 8260D Description: Dup3-GW

						Prepa	ration	A	nalysis
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch Init
1. Acetone	U	V+	μg/L	200	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
‡ 2. Acrylonitrile	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
3. Benzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
4. Bromobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
5. Bromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
6. Bromodichloromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
7. Bromoform	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
8. Bromomethane	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
9.2-Butanone	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
10. n-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
11. sec-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
12.tert-Butylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
13. Carbon Disulfide	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
14. Carbon Tetrachloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
15. Chlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
16. Chloroethane	U		μg/L	40	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
17. Chloroform	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
18. Chloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
19.2-Chlorotoluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
‡ 20.1,2-Dibromo-3-chloropropane (SIM)	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
21. Dibromochloromethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC
22. Dibromomethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A KC

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 94 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: Dup3-GW

Chain of Custody:

184382

NA

Client Project Name: I

RTTR (1-10860)

Sample No:
Sample Matrix:

Collect Date:
Collect Time:

07/30/20

Client Project No:
Sample Comments:

Definitions: Q: Q:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Ground Water

Parameter(s) Result Q Units Reporting Limit Dilution P. Date P. Batch A. Date A. Batch I 24.1,3-Dichlorobenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20	Volatile Organic Compounds (VOCs) b Method: EPA 5030C/EPA 8260D	y GC/MS			-		97294-016E Dup3-GW	Matrix: G	round Water		
23.1.2-Dichlorobenzene						•	-	ration	Ar	nalysis	
24.1,3-Dichlorobenzene	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
25.1,4-Dichlorodenzene	23.1,2-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
28. Dichlorodiffluoromethane	24.1,3-Dichlorobenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
27.1,1-Dichloroethane	25.1,4-Dichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
28.1,2-Dichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 20 80/05/20 VB20H05A 08/05/20 V	26. Dichlorodifluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
29.1,1-Dichloroethene	27.1,1-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
30. cis-1,2-Dichloroethene	28.1,2-Dichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
31.trans-1,2-Dichloroethene	29.1,1-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
32.1,2-Dichloropropane	30. cis-1,2-Dichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
33. cis-1,3-Dichloropropene	31. trans-1,2-Dichloroethene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
34. trans-1,3-Dichloropropene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 35. Ethylene Dibromide U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 36. Ethylene Dibromide U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 36. Ethylene Dibromide U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 36. Ethylene Dibromide U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 37. 2-Hexanone U V μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 38. Isopropylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 39. 4-Methyl-2-pentanone U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 40. Methylene Chloride U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 41. 2-Methylnaphthalene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 41. 2-Methylnaphthalene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 44. N-Propylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 44. N-Propylbenzene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 45. Styrene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 46. 1,1,1,2-Tetrachloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 46. 1,1,1,2-Tetrachloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 48. Tetrachloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 50. 1,1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/	32.1,2-Dichloropropane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
35. Ethylbenzene	33. cis-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
36. Ethylene Dibromide U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A K 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20 VB20H05A W 08/05/20	34. trans-1,3-Dichloropropene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
37.2-Hexanone U V+ µg/L 50 20 08/05/20 VB20H05A 08/05/20 VB20H05A A 38. Isopropylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K8/05/20	35. Ethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
38. Isopropylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 39. 4-Methyl-2-pentanone U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 40. Methylene Chloride U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 41.2-Methylnaphthalene U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 41.2-Methylnaphthalene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 42. MTBE U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 43. Naphthalene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 44. n-Propylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 47. 1,1,2-Tetrachloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 47. 1,1,1,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,1,2-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,2,3-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,2,3-Trichlororopane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56. 1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 56. 1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/2	36. Ethylene Dibromide	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
39.4-Methyl-2-pentanone U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 40. Methylene Chloride U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 41.2-Methylnaphthalene U μg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 41.2-Methylnaphthalene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 42. MTBE U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 43. Naphthalene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 44. n-Propylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 45. Styrene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 45. Styrene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 46. 1,1,1,2-Tetrachloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 47. 1,1,1,2-Tetrachloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 48. Tetrachloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 50. 1,2,4-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51. 1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51. 1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51. 1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51. 1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53. Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,2,3-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,2,3-Trichloropropane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56. 1,2,3-Trichloropropane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56. 1,2,3-Trichloropropane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56. 1,2,3-Trichloropropane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56. 1,2,3-Trichloropropane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56. 1,2,3-Trichloropropane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56. 1,2,3-Trichloropropane U μg/L 10 20 08/05/20 VB20H05A 08	37.2-Hexanone	U	V+	μg/L	50	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
40. Methylene Chloride U µg/L 100 20 08/05/20 VB20H05A 08/05/20	38. Isopropylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
# 41.2-Methylnaphthalene U µg/L 100 20 08/05/20 VB20H05A 08/05/20 VB20H05A KB20H	39.4-Methyl-2-pentanone	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
42.MTBE U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 43.Naphthalene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 44.n-Propylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 44.n-Propylbenzene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 45.Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 46.1,1,1,2-Tetrachloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 46.1,1,1,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 47.1,1,2,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49.Toluene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49.Toluene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 50.1,2,4-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 52.1,1,2-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 52.1,1,2-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloroptopane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB	40. Methylene Chloride	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
43. Naphthalene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A 64.n-Propylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 44.n-Propylbenzene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 46. 1,1,1,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 47. 1,1,2,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 50. 1,2,4-Trichloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51. 1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 52. 1,1,2-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53. Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53. Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,2,3-Trichloropropane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,2,3-Trichloropropane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56. 1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57. 1,2,4-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58. 1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57. 1,2,4-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58. 1,3,5-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	‡ 41.2-Methylnaphthalene	U		μg/L	100	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
44.n-Propylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A KB20H05A <td>42.MTBE</td> <td>U</td> <td></td> <td>μg/L</td> <td>10</td> <td>20</td> <td>08/05/20</td> <td>VB20H05A</td> <td>08/05/20</td> <td>VB20H05A</td> <td>KCM</td>	42.MTBE	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
45. Styrene U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 46.1,1,1,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 47.1,1,2,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 47.1,1,2,2-Tetrachloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 48. Tetrachloroethene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 50.1,2,4-Trichloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51.1,1,1-Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 52.1,1,2-Trichloroethane U µg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53. Trichloroethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 54. Trichlorofluoromethane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloroptopane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloroptopane U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U µg/L 10 20 08/05/20 VB20H05A 08/05/20 VB2	43. Naphthalene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
46.1,1,1,2-Tetrachloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 47.1,1,2,2-Tetrachloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 48. Tetrachloroethene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 50.1,2,4-Trichlorobenzene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51.1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53. Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53. Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 54. Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloroptopane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	44. n-Propylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
47. 1,1,2,2-Tetrachloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 48. Tetrachloroethene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 50. 1,2,4-Trichlorobenzene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51. 1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 52. 1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53. Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53. Trichloroethene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 54. Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,2,3-Trichloropropane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55. 1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56. 1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57. 1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58. 1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	45. Styrene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
48. Tetrachloroethene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 49. Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 50.1,2,4-Trichlorobenzene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51.1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53. Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 54. Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	46.1,1,1,2-Tetrachloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
49.Toluene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 50.1,2,4-Trichlorobenzene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51.1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53.Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 54.Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	47.1,1,2,2-Tetrachloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
50.1,2,4-Trichlorobenzene U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 51.1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53.Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 54.Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K	48. Tetrachloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
51.1,1,1-Trichloroethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K ‡ 52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53.Trichloroethene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 54.Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K ‡ 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	49. Toluene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 52.1,1,2-Trichloroethane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 53.Trichloroethene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 54.Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	50.1,2,4-Trichlorobenzene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
53.Trichloroethene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 54.Trichloroefluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	51.1,1,1-Trichloroethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
54.Trichlorofluoromethane U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	‡ 52.1,1,2-Trichloroethane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
55.1,2,3-Trichloropropane U μg/L 20 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	53. Trichloroethene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 56.1,2,3-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	54. Trichlorofluoromethane	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	55.1,2,3-Trichloropropane	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
57.1,2,4-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K 58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	56.1,2,3-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
58.1,3,5-Trimethylbenzene U μg/L 10 20 08/05/20 VB20H05A 08/05/20 VB20H05A K	57.1,2,4-Trimethylbenzene	U			10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
	58.1,3,5-Trimethylbenzene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
	59. Vinyl Chloride	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

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Order: 97294 Page: 95 of 98 Date: 08/12/20

Applied Science & Technology, Client Identification:

1-10860

Inc. - Brighton

Sample Description: Dup3-GW

Chain of Custody:

184382

Client Project Name:

RTTR (1-10860)

Sample No:

Collect Date:

07/30/20

Client Project No:

Sample Matrix:

Ground Water

Collect Time: NA

Sample Comments:

Definitions:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: 97294-016E **Matrix: Ground Water**

Method: EPA 5030C/EPA 8260D Description: Dup3-GW

						Prepa	ration	А	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
60. m&p-Xylene	U		μg/L	20	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
61.o-Xylene	U		μg/L	10	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM
‡ 62. Xylenes	U		μg/L	30	20	08/05/20	VB20H05A	08/05/20	VB20H05A	KCM

Base/Neutral/Acid Semivolatiles by GC/MS Aliquot ID: 97294-016 **Matrix: Ground Water**

Method: EPA 3510C/EPA 8270E Description: Dup3-GW

						Prepa	ration	Δ	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	lnit.
1. Acenaphthene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
2. Acenaphthylene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
3. Aniline	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
4. Anthracene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
5. Azobenzene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
6.Benzo(a)anthracene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
7. Benzo(a)pyrene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
8. Benzo(b)fluoranthene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
9. Benzo(ghi)perylene	U	L+	μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
10.Benzo(k)fluoranthene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
11. Benzyl Alcohol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
12. Bis(2-chloroethoxy)methane	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
13. Bis(2-chloroethyl)ether	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
14. Bis(2-ethylhexyl)phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
15.4-Bromophenyl Phenylether	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
16. Butyl Benzyl Phthalate	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJI
17. Di-n-butyl Phthalate	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
18. Carbazole	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
19.4-Chloro-3-methylphenol	12		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
20.2-Chloronaphthalene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
21.2-Chlorophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
22.4-Chlorophenyl Phenylether	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
23. Chrysene	U		μg/L	1.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJF
24. Dibenzo(a,h)anthracene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
25. Dibenzofuran	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
26.2,4-Dichlorophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
27. Diethyl Phthalate	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
28.2,4-Dimethylphenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS

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Order: 97294 Page: 96 of 98 Date: 08/12/20

Client Identification: Applied Science & Technology,

1-10860

Inc. - Brighton

Sample Description: Dup3-GW

Chain of Custody:

184382

Client Project Name: RT

RTTR (1-10860)

Sample No:
Sample Matrix:

Collect Date:

07/30/20

NA

Client Project No:

Definitions:

Sample Comments:

Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Ground Water

Base/Neutral/Acid Semivolatiles by GC/MS				Aliq	uot ID:	97294-016	Matrix: G	round Water		
Method: EPA 3510C/EPA 8270E				Des	cription:	Dup3-GW				
						Prepa	ration	Ar	nalysis	
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
29. Dimethyl Phthalate	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
30.2,4-Dinitrophenol	U		μg/L	100	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
31.2,4-Dinitrotoluene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
32.2,6-Dinitrotoluene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
33. Fluoranthene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
34. Fluorene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
35. Hexachlorobenzene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
36. Hexachlorobutadiene	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
37. Hexachlorocyclopentadiene	U	V+	μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
38. Hexachloroethane	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
39. Indeno(1,2,3-cd)pyrene	U	L+	μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
40. Isophorone	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
41.2-Methyl-4,6-dinitrophenol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
42.2-Methylnaphthalene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
43.2-Methylphenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
‡ 44.3&4-Methylphenol	U		μg/L	10	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
45. Naphthalene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
46.2-Nitroaniline	U		μg/L	20	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
47.3-Nitroaniline	U		μg/L	20	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
48.4-Nitroaniline	U		μg/L	20	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
49. Nitrobenzene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
50.2-Nitrophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
51.4-Nitrophenol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
52. N-Nitrosodimethylamine	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
53. N-Nitrosodi-n-propylamine	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
54. N-Nitrosodiphenylamine	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
55. Di-n-octyl Phthalate	U	L+	μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
56.2,2'-Oxybis(1-chloropropane)	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
57. Pentachlorophenol	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
58. Phenanthrene	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
59. Phenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
60. Pyrene	U	V+	μg/L	5.0	1.0	08/06/20	PS20H06G	08/08/20	S620H07D	GJP
61. Pyridine	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
62.1,2,4-Trichlorobenzene	U		μg/L	25	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
63.2,4,5-Trichlorophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS
64.2,4,6-Trichlorophenol	U		μg/L	5.0	5.0	08/06/20	PS20H06G	08/11/20	SN20H10C	ALS

1914 Holloway Drive 11766 E. Grand River 8660 S. Mackinaw Trail Holt, MI 48842 Brighton, MI 48116 Cadillac, MI 49601 T: (517) 699-0345 T: (810) 220-3300 T: (231) 775-8368



Order: 97294 Page: 97 of 98 Date: 08/12/20

Client Identification:	Applied Science & Technology, Inc Brighton		Sample De	escription: D	up3-G	ew .		Chair	n of Custody:	184382	
Client Project Name:	RTTR (1-10860)		Sample No):				Colle	ct Date:	07/30/20	
Client Project No:	1-10860		Sample Ma	atrix: G	iround	d Water		Colle	ct Time:	NA	
Sample Comments:											
Definitions:	Q: Qualifier (see definitions at end	of rep	ort) NA: Not	t Applicable	‡: Paı	rameter n	ot included in NE	ELAC Scope of	Analysis.		
pH, Electrometric					Aliqu	uot ID:	97294-016A	Matrix: (Ground Water		
Method: EPA 9040C					Desc	cription:	Dup3-GW				
		_						aration		alysis	
Parameter(s)	Result	Q	Units	Reporting L		Dilution		P. Batch	A. Date	A. Batch	Init.
1.pH	12.5	Е	pH Units		.00	1.0	NA	NA	08/04/20 21:24		
‡ 2.Temperature	21		°C		1.0	1.0	NA	NA	08/04/20 21:25	WD20H04E) JMK
Inorganic Anions by	IC				Aliqu	uot ID:	97294-016A	Matrix: (Ground Water		
Method: EPA 9056A					Desc	cription:	Dup3-GW				
		_						aration		nalysis	
Parameter(s)	Result	Q	Units	Reporting L	_imit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Chloride	37000		μg/L	100	000	1.0	08/04/20	PW20H03C	08/04/20	WC20H03A	A VO
Residue, Filterable (TDS)				Aliqu	uot ID:	97294-016A	Matrix: (Ground Water		
Method: SM 2540 C-	2011				Desc	cription:	Dup3-GW				
							Prep	aration	Ar	alysis	
Parameter(s)	Result	Q	Units	Reporting L	_imit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Total Dissolved	Solids 1900000		μg/L	500	000	1.3	08/05/20	WH20H05C	08/07/20	WH20H050	CMB
Nitrogen, Ammonia	(Auto Analyzer)				Aliqu	uot ID:	97294-016B	Matrix: (Ground Water		
Method: SM 4500-Ni	H3 G-2011				Desc	cription:	Dup3-GW				
							Prep	aration	Ar	alysis	
Parameter(s)	Result	Q	Units	Reporting L	_imit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Ammonia-N	3500	F-	μg/L		10	1.0	08/07/20	PW20H07A	08/07/20	WU20H07E	3 AMW



Analytical Laboratory Report Laboratory Project Number: 97294

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Definitions/ Qualifiers:

- A: Spike recovery or precision unusable due to dilution.
- B: The analyte was detected in the associated method blank.
- The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated. E:
- J: The concentration is an estimated value.
- M: Modified Method
- U: The analyte was not detected at or above the reporting limit.
- X: Matrix Interference has resulted in a raised reporting limit or distorted result.
- W: Results reported on a wet-weight basis.
- *: Value reported is outside QC limits

Exception Summary:

: Duplicate analysis not within control limits.

R : Analyte is found in the associated method blank as well as in the sample.

Ε : This flag identifies compounds whose response exceed the response of the highest standard in the initial calibration

range of the instrument for that specific analysis.

: Recovery from the spiked aliquot exceeds the lower control limit (matrix spike or matrix spike duplicate).

: Recovery of the associated Surrogate Compound exceeds the upper control limit. Results may be biased high. G+

н : Hold time exceeded.

: Recovery in the associated laboratory sample (LCS) exceeds the upper control limit. Results may be biased high.

LLV+ : Recovery in the associated low-level continuing calibration verification sample (LLCCV) exceeds the upper control limit.

Results may be biased high.

: Recovery in the associated continuing calibration verification sample (CCV) exceeds the lower control limit. Results

may be biased low.

٧+ : Recovery in the associated continuing calibration verification sample (CCV) exceeds the upper control limit. Results

may be biased high.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

Attachment D

ProUCL Output Files



Date/Time	Selected Options of Computation From File Full Precision	ProUCL 5.13	3/31/2021 2:0	Northern F	Flow Zone					
Date/Time	of Computation From File	ProUCL 5.13	8/31/2021 2:0							
Confide	From File		3/31/2021 2:0				RTRR - Riv	erview		
		WorkSheet x	J/ O 1/ Z U Z 1 Z. (01:33 PM			ASTI Projec	t Number: 10	0860	
	Full Precision	***************************************	ds							
		OFF								
Number of Boots	ence Coefficient	95%								
	trap Operations	2000								
Arsenic										
				General	Statistics					
	Total	Number of O	bservations	8			Number	of Distinct C	Observations	8
							Number	of Missing C	Observations	0
			Minimum	8.8					Mean	161.6
			Maximum	470					Median	75.5
			SD	181.4				Std. E	rror of Mean	64.15
		Coefficient	of Variation	1.123					Skewness	1.046
					<u> </u>					
	Note: Sam	ple size is sm	all (e.g., <10)), if data are	collected u	sing ISM ap	proach, you	should use		
	guidance pr	ovided in ITR	C Tech Reg	Guide on IS	M (ITRC, 20)12) to comp	ute statistics	s of interest.		
	For	example, you	may want to	use Cheby	shev UCL to	estimate Ef	PC (ITRC, 20)12).		
	Chebyshev	/ UCL can be	computed u	sing the Nor	nparametric	and All UCL	Options of F	ProUCL 5.1		
				Normal C	OF Test					
	S	Shapiro Wilk T	est Statistic	0.816			Shapiro Wil	k GOF Test		
	5% S	hapiro Wilk C	ritical Value	0.818		Data No	t Normal at 5	5% Significar	nce Level	
		Lilliefors T	est Statistic	0.258			Lilliefors	GOF Test		
	5	% Lilliefors C	ritical Value	0.283		Data appe	ear Normal at	t 5% Signific	ance Level	
		Data	appear Appr	oximate Noi	rmal at 5% S	Significance I	_evel			
			Ass	suming Norn	nal Distribut	ion				
	95% No	ormal UCL				95%	UCLs (Adjus	sted for Skev	wness)	
		95% Stud	dent's-t UCL	283.1			95% Adjuste	d-CLT UCL	(Chen-1995)	292.5
							95% Modifie	ed-t UCL (Jo	hnson-1978)	287.1
					l					
				Gamma (GOF Test					
		A-D T	est Statistic	0.286		Ander	son-Darling	Gamma GO	F Test	
		5% A-D C	ritical Value	0.744	Detected	d data appea	ır Gamma Di	stributed at 5	5% Significand	e Level
		K-S T	est Statistic	0.174		Kolmog	orov-Smirno	v Gamma G	OF Test	
		5% K-S C	ritical Value	0.304	Detected	d data appea	ır Gamma Di	stributed at 5	5% Significand	e Level
		Detected	data appear	Gamma Dis	stributed at 5	5% Significar	nce Level			
				Gamma	Statistics					
			k hat (MLE)	0.777			k s	star (bias cor	rected MLE)	0.569
		Theta	a hat (MLE)	207.9			Thetas	star (bias cor	rected MLE)	284
		n	u hat (MLE)	12.44				nu star (bia	as corrected)	9.106
	MI	LE Mean (bias	s corrected)	161.6				MLE Sd (bia	as corrected)	214.2
							Approximate	Chi Square	Value (0.05)	3.391
	Adjus	sted Level of S	Significance	0.0195			Ac	ljusted Chi S	quare Value	2.57
	•									
			Ass	suming Gam	ma Distribut	ion				
95% Apr	oroximate Gamma	UCL (use wh		434			justed Gamn	na UCL (use	when n<50)	572.5
	95% App	Note: Sam guidance pr For Chebyshev 95% No	Coefficient Note: Sample size is sm guidance provided in ITR For example, you Chebyshev UCL can be Shapiro Wilk T 5% Shapiro Wilk C Lilliefors T 5% Lilliefors C Data 95% Normal UCL 95% Stud A-D T 5% A-D C K-S T 5% K-S C Detected Thet n MLE Mean (bia: Adjusted Level of S	Maximum SD Coefficient of Variation Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appear Appr Ass 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value Detected data appear k hat (MLE) Theta hat (MLE) nu hat (MLE) MLE Mean (bias corrected) Adjusted Level of Significance	Minimum 8.8 Maximum 470 SD 181.4 Coefficient of Variation 1.123 Note: Sample size is small (e.g., <10), if data are guidance provided in ITRC Tech Reg Guide on IS For example, you may want to use Cheby Chebyshev UCL can be computed using the Nor Chebyshev UCL can be computed using the Nor Shapiro Wilk Test Statistic 0.816 5% Shapiro Wilk Critical Value 0.818 Lilliefors Test Statistic 0.258 5% Lilliefors Critical Value 0.283 Data appear Approximate Nor 95% Normal UCL 95% Student's-t UCL 283.1 Gamma 0 A-D Test Statistic 0.286 5% A-D Critical Value 0.744 K-S Test Statistic 0.174 5% K-S Critical Value 0.304 Detected data appear Gamma Dis K hat (MLE) 0.777 Theta hat (MLE) 207.9 nu hat (MLE) 12.44 MLE Mean (bias corrected) 161.6 Adjusted Level of Significance 0.0195	Minimum 8.8 Maximum 470 SD 181.4 Coefficient of Variation 1.123 Note: Sample size is small (e.g., <10), if data are collected u guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 20 For example, you may want to use Chebyshev UCL to Chebyshev UCL can be computed using the Nonparametric Shapiro Wilk Test Statistic 0.816 5% Shapiro Wilk Test Statistic 0.816 5% Shapiro Wilk Critical Value 0.818 Lilliefors Test Statistic 0.258 Shapiro Wilk Critical Value 0.283 Data appear Approximate Normal at 5% S Assuming Normal Distribute 95% Normal UCL 95% Student's-t UCL 283.1 Gamma GOF Test A-D Test Statistic 0.286 5% A-D Critical Value 0.304 Detected N-S Test Statistic 0.174 5% K-S Critical Value 0.304 Detected Detected data appear Gamma Distributed at 5 Gamma Statistics k hat (MLE) 0.777 Theta hat (MLE) 0.777 Theta hat (MLE) 12.44 MLE Mean (bias corrected) 161.6 Adjusted Level of Significance 0.0195	Minimum 8.8 Maximum 470 SD 181.4 Coefficient of Variation 1.123 Note: Sample size is small (e.g., <10), if data are collected using ISM application in TRC Tech Reg Guide on ISM (ITRC, 2012) to compressive to use Chebyshev UCL to estimate Efficiency of the Chebyshev UCL can be computed using the Nonparametric and All UCL Normal GOF Test Shapiro Wilk Critical Value 0.818 Data Note Lilliefors Test Statistic 0.58 5% Shapiro Wilk Critical Value 0.283 Data apper Data appear Approximate Normal at 5% Significance I Assuming Normal Distribution 95% Normal UCL 283.1 Gamma GOF Test A-D Test Statistic 0.286 Ander 5% A-D Critical Value 0.744 Detected data appear K-S Test Statistic 0.174 Kolmog 5% K-S Critical Value 0.304 Detected data appear Detected data appear Gamma Distributed at 5% Significant Detected data appear Gamma Statistics k hat (MLE) 0.777 Theta hat (MLE) 207.9 nu hat (MLE) 12.44 MLE Mean (bias corrected) 161.6 Adjusted Level of Significance 0.0195	Total Number of Observations 8 Number Number Minimum 8.8 Number Minimum 470 SD 181.4 Coefficient of Variation 1.123 Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistic: For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012) to compute statistic: For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012) to compute statistic: For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012) to compute statistic: For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012) to compute statistic: Normal GOF Test Normal GOF Test Data Not Normal at 1	Total Number of Observations 8 Number of Distinct C Number of Missing G Minimum 8.8 Maximum 470 SD 181.4 Std. E Coefficient of Variation 1.123 Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1 Normal GOF Test Shapiro Wilk Critical Value 0.818 Data Not Normal at 5% Significan Lilliefors Test Statistic 0.258 Lilliefors GOF Test 5% Lilliefors Test Statistic 0.258 Lilliefors GOF Test 5% Lilliefors Critical Value 0.83 Data appear Normal at 5% Significan Data appear Approximate Normal at 5% Significance Level Assuming Normal Distribution 95% Normal UCL 95% Student's-t UCL 283.1 95% Adjusted-CLT UCL 95% Modified-t UCL (Jo Gamma GOF Test A-D Test Statistic 0.286 Anderson-Darling Gamma GO 5% A-D Critical Value 0.304 Detected data appear Gamma Distributed at 6 Nes Test Statistic 0.174 Kolmogorov-Smimov Gamma GO 5% A-D Critical Value 0.304 Detected data appear Gamma Distributed at 6 Detected data appear Gamma Distributed at 6 Nes Test Statistic 0.174 Kolmogorov-Smimov Gamma GO 5% K-S Critical Value 0.304 Detected data appear Gamma Distributed at 6 Detected data appear Gamma Distributed at 6 Nes Test Statistic 0.174 Kolmogorov-Smimov Gamma GO 10 Theta hat (MLE) 0.777 k star (bias con un bat (MLE) 0.777 heta star (bias con un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu star (bia scon un bat (MLE) 12.44 nu	Total Number of Observations Number of Distinct Observations Number of Missing Observations Number of Missing Observations Mean Maximum 470 Median Median SD 1814 Std. Error of Mean Median Coefficient of Variation 1.123 Std. Error of Mean Coefficient of Variation 1.123 Std. Error of Mean Coefficient of Variation 1.123 Std. Error of Mean Coefficient of Variation 1.123 Std. Error of Mean Coefficient of Variation 1.123 Std. Error of Mean Coefficient of Variation 1.123 Std. Error of Mean Coefficient of Variation 1.123 Std. Error of Mean Coefficient of Variation 1.123 Std. Error of Mean Coefficient of Variation 1.123 Std. Error of Mean Coefficient Variation 1.123 Std. Error of Mea

	Α		В		С		D		Е	F	G	Н	I		J		K	L
55										Lognorma	GOF Test							
56						Shani	ro Wilk	Test	Statistic	-	I GOI TESI	Sha	apiro Wilk	Logno	rmal GO	F Test		
57 58					5%				al Value			Data appe						
59									Statistic				illiefors Lo					
60						5% Li	lliefors	Critic	al Value	0.283		Data appe	ar Lognor	mal at	5% Sign	ificance	e Level	
61								Dat	a appea	r Lognormal	at 5% Signif	icance Leve	el					
62																		
63										Lognorma	l Statistics							
64									ged Data						Mean o			4.319
65						Maxii	mum of	f Logg	ged Data	6.153					SD	of logge	d Data	1.469
66																		
67								050		uming Logno	ormal Distribu	ution		00/ 01		/N 40 /1 11	E) 1101	457.5
68					050	/ Chal			6 H-UCL						ebyshev	`	,	457.5
69							•	•	JE) UCL JE) UCL				97.:	5% Cn	ebyshev	(IVIVUE	=) UCL	759.8
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76							ç	}5% C	CLT UCL	267.1					95% J	Jackknit	fe UCL	283.1
77					95	% Star	ndard E	3ootst	rap UCL	259.6					95% Bo	otstrap	-t UCL	412.8
78						95% I	Hall's E	3ootst	rap UCL	323.5			95	5% Per	centile E	3ootstr <i>a</i>	ap UCL	271.6
79						95%	BCA E	3ootst	rap UCL	284.9								
80					90% (Chebys	shev(M	ean, S	Sd) UCL	354			95%	6 Cheb	yshev(M	lean, So	d) UCL	441.2
81					97.5% (Chebys	shev(M	ean, S	Sd) UCL	562.2			99%	6 Cheb	yshev(M	lean, So	d) UCL	799.9
82																		
83											UCL to Use							
84							95% St	udent	t's-t UCL	283.1								
85					\A/ban a	doto	oot folle		n onnro	imata (a.a. i	acroal) diatri	hutian nasa	oina ono o	f tha C	OF toot			
86			\M/hon	annlic						kimate (e.g., i ased upon a	•		•			te in Dr	ALICI	
87			vviicii	аррііс	able, it is	sugge	ssieu ii	Juse	a oct b	aseu upon a	uistribution (e.g., gaiiiii	ia) passiii	g botti	aoi les		UUUL	
88 89		No	te: Su	agestic	ons rega	rding t	he sele	ection	of a 95%	6 UCL are pr	ovided to hel	p the user t	to select th	ne mos	t approp	riate 95	5% UCL	
90										sed upon dat		·			••••			
91		Т	hese re	ecomn	nendatio	ns are	based	upon	the resu	ılts of the sim	ulation studi	es summar	ized in Sir	ngh, Ma	aichle, a	nd Lee	(2006).	
92	I	How	ever, s	imulat	ions res	ults wil	I not co	over a	II Real V	Vorld data se	ts; for addition	nal insight	the user m	nay wa	nt to con	sult a s	statistici	an.
93																		
94	Total Chr	romiu	ım															
95																		
96											Statistics							
97					Tot	al Nun			ervations				Nun		Distinct			2
98						Nl l.			Detects				K I		lumber o			7
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100		\\/	amina.	Only	one diet	inct de	ıta vəli	IE Mo	s detect	ed! ProUCL (or any other	software) s	should not	t he ue	ed on ev	ich a q	ata eeti	
101	It is suc									nined by the	•	•						C. BTV)
102	10 oug	9 900	.54 10 1	uli	.s Idu 10	3	P-01110	Taiuc	.5 40(0)1		. 10,000 1001		51171101		parann	2.0.0 (6	g.,	-, -, -,
103 104							The	data	set for v	ariable Total	Chromium w	as not prod	cessed!					
104																		
106																		
	Mercury																	
108																		
. 50																		

109	A B C D E	F General	G H I J K Statistics	L
110	Total Number of Observations	8	Number of Distinct Observations	4
	Number of Detects	4	Number of Non-Detects	4
111 112	Number of Distinct Detects	4	Number of Distinct Non-Detects	1
113	Minimum Detect	0.045	Minimum Non-Detect	0.2
114	Maximum Detect	0.424	Maximum Non-Detect	0.2
115	Variance Detects	0.0274	Percent Non-Detects	50%
116	Mean Detects	0.195	SD Detects	0.166
117	Median Detects	0.155	CV Detects	0.85
118	Skewness Detects	1.188	Kurtosis Detects	1.229
119	Mean of Logged Detects	-1.944	SD of Logged Detects	0.949
120				
121	Note: Sample size is small (e.g., <10	O), if data are	e collected using ISM approach, you should use	
122	guidance provided in ITRC Tech Reg	Guide on IS	SM (ITRC, 2012) to compute statistics of interest.	
123			shev UCL to estimate EPC (ITRC, 2012).	
124	Chebyshev UCL can be computed u	sing the No	nparametric and All UCL Options of ProUCL 5.1	
125	<u> </u>		<u>'</u>	
126	Norm	al GOF Tes	t on Detects Only	
127	Shapiro Wilk Test Statistic	0.924	Shapiro Wilk GOF Test	
128	5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Leve	el
129	Lilliefors Test Statistic	0.237	Lilliefors GOF Test	
130	5% Lilliefors Critical Value	0.375	Detected Data appear Normal at 5% Significance Leve	el
131	Detected Data a	appear Norm	nal at 5% Significance Level	
132				
133	Kaplan-Meier (KM) Statistics usin	ng Normal C	ritical Values and other Nonparametric UCLs	
134	KM Mean	0.136	KM Standard Error of Mean	0.0514
135	KM SD	0.119	95% KM (BCA) UCL	N/A
136	95% KM (t) UCL	0.233	95% KM (Percentile Bootstrap) UCL	N/A
137	95% KM (z) UCL	0.221	95% KM Bootstrap t UCL	N/A
138	90% KM Chebyshev UCL	0.29	95% KM Chebyshev UCL	0.36
139	97.5% KM Chebyshev UCL	0.457	99% KM Chebyshev UCL	0.647
140				
141	Gamma GOF	Tests on De	etected Observations Only	
142	A-D Test Statistic	0.197	Anderson-Darling GOF Test	
143	5% A-D Critical Value	0.661	Detected data appear Gamma Distributed at 5% Significance	e Level
144	K-S Test Statistic	0.173	Kolmogorov-Smirnov GOF	
145	5% K-S Critical Value	0.399	Detected data appear Gamma Distributed at 5% Significance	e Level
146	Detected data appear	Gamma Di	stributed at 5% Significance Level	
147				
148	Gamma	Statistics or	Detected Data Only	
149	k hat (MLE)	1.772	k star (bias corrected MLE)	0.61
150	Theta hat (MLE)	0.11	Theta star (bias corrected MLE)	0.319
151	nu hat (MLE)	14.18	nu star (bias corrected)	4.878
152	Mean (detects)	0.195		
153				
154	Gamma ROS	Statistics us	sing Imputed Non-Detects	
155	GROS may not be used when data se	et has > 50%	NDs with many tied observations at multiple DLs	
156	GROS may not be used when kstar of detects is s	small such a	s <1.0, especially when the sample size is small (e.g., <15-20)	
157	For such situations, GROS r	method may	yield incorrect values of UCLs and BTVs	
158	This is especi-	ally true whe	en the sample size is small.	
159	For gamma distributed detected data, BTVs a	nd UCLs ma	y be computed using gamma distribution on KM estimates	
160	Minimum	0.01	Mean	0.133
161	Maximum	0.424	Median	0.0988
162	SD	0.132	CV	0.999
102				

	A B C D E k hat (MLE)	F 1.202	G	Н	I J K k star (bias corrected MLE)	L 0.835
163	Theta hat (MLE)	0.11			Theta star (bias corrected MLE)	0.833
164	nu hat (MLE)	19.23			nu star (bias corrected)	13.35
165	Adjusted Level of Significance (β)	0.0195			ma etai (biae een eetea)	10.00
166 167	Approximate Chi Square Value (13.35, α)	6.131			Adjusted Chi Square Value (13.35, β)	4.949
168	95% Gamma Approximate UCL (use when n>=50)	0.289			amma Adjusted UCL (use when n<50)	N/A
169	,, ,				, , ,	
170	Estimates of G	amma Parai	meters using	KM Estima	tes	
171	Mean (KM)	0.136			SD (KM)	0.119
172	Variance (KM)	0.0142			SE of Mean (KM)	0.0514
173	k hat (KM)	1.301			k star (KM)	0.897
174	nu hat (KM)	20.82			nu star (KM)	14.35
175	theta hat (KM)	0.105			theta star (KM)	0.152
176	80% gamma percentile (KM)	0.221			90% gamma percentile (KM)	0.322
177	95% gamma percentile (KM)	0.424			99% gamma percentile (KM)	0.663
178						
179			eier (KM) Sta			
180	Approximate Chi Square Value (14.35, α)	6.81			Adjusted Chi Square Value (14.35, β)	5.551
181	95% Gamma Approximate KM-UCL (use when n>=50)	0.287		95% Gamm	na Adjusted KM-UCL (use when n<50)	0.352
182						
183	Lognormal GO		etected Obs	ervations Or	<u>-</u>	
184	Shapiro Wilk Test Statistic	0.998	D .		Shapiro Wilk GOF Test	
185	5% Shapiro Wilk Critical Value	0.748	Dete	ected Data a	ppear Lognormal at 5% Significance Le	evel
186	Lilliefors Test Statistic 5% Lilliefors Critical Value	0.141 0.375	Dota	oted Data a	Lilliefors GOF Test ppear Lognormal at 5% Significance Le	wol
187	Detected Data ap					vei
188	Detected Data ap	pear Logilor	illiai at 5% S	ignincance	Levei	
189	Lognormal ROS	S Statistics I	leina Impute	d Non-Dete	nte	
190	Mean in Original Scale	0.134	Jang Impute	a Non-Boto	Mean in Log Scale	-2.333
191	SD in Original Scale	0.129			SD in Log Scale	0.831
192	95% t UCL (assumes normality of ROS data)	0.22			95% Percentile Bootstrap UCL	0.209
193 194	95% BCA Bootstrap UCL	0.229			95% Bootstrap t UCL	0.352
195	95% H-UCL (Log ROS)	0.354				
196	,				I	
197	Statistics using KM estimates	on Logged [Data and Ass	uming Logn	normal Distribution	
198	KM Mean (logged)	-2.299			KM Geo Mean	0.1
199	KM SD (logged)	0.751			95% Critical H Value (KM-Log)	2.843
200	KM Standard Error of Mean (logged)	0.379			95% H-UCL (KM -Log)	0.298
201	KM SD (logged)	0.751			95% Critical H Value (KM-Log)	2.843
202	KM Standard Error of Mean (logged)	0.379				
203						
204		DL/2 S	tatistics			
205	DL/2 Normal				DL/2 Log-Transformed	
206	Mean in Original Scale	0.147			Mean in Log Scale	-2.123
207	SD in Original Scale	0.12			SD in Log Scale	0.65
208	95% t UCL (Assumes normality)	0.227			95% H-Stat UCL	0.282
209	DL/2 is not a recommended me	ethod, provid	ded for comp	arisons and	historical reasons	
210		and a Principal of	u F	L Oberten		
211	•		tion Free UC			
212	Detected Data appea	r Normal Dis	stributed at 5	% Significar	ice level	
213		Quanasta d				
214	OEO/ IVAA (A) LIOI		UCL to Use		T	
215	95% KM (t) UCL	0.233				
216						

217	A B C D E Note: Suggestions regarding the selection of a 95% leads to the selection of a 95%	F UCL are pro	G H I J K Dovided to help the user to select the most appropriate 95% UCL.	L
217 218			a size, data distribution, and skewness.	
219			ulation studies summarized in Singh, Maichle, and Lee (2006).	
220	However, simulations results will not cover all Real Wo	orld data set	s; for additional insight the user may want to consult a statisticia	n.
221			<u> </u>	
	Aniline			
223				
224		General S	Statistics	
225	Total Number of Observations	8	Number of Distinct Observations	2
226	Number of Detects	1	Number of Non-Detects	7
227	Number of Distinct Detects	1	Number of Distinct Non-Detects	1
228				
229	Warning: Only one distinct data value was detected	!! ProUCL (or any other software) should not be used on such a data set!	
230	It is suggested to use alternative site specific values determine	ned by the	Project Team to estimate environmental parameters (e.g., EPC	, BTV).
231				
232	The data set fo	r variable A	niline was not processed!	
233				
234				
235	Carbazole			
236				
237		General S	Statistics	
238	Total Number of Observations	8	Number of Distinct Observations	4
239	Number of Detects	3	Number of Non-Detects	5
240	Number of Distinct Detects	3	Number of Distinct Non-Detects	1
241	Minimum Detect	7.1	Minimum Non-Detect	5
242	Maximum Detect	12	Maximum Non-Detect	5
243	Variance Detects	7.023	Percent Non-Detects	62.5%
244	Mean Detects	8.967	SD Detects	2.65
245	Median Detects	7.8	CV Detects	0.296
246	Skewness Detects	1.597	Kurtosis Detects	N/A
247	Mean of Logged Detects	2.166	SD of Logged Detects	0.28
248				
249	Warning: Da	ta set has c	only 3 Detected Values.	
250	This is not enough to compu	ıte meaning	ful or reliable statistics and estimates.	
251				
252				
253	Note: Sample size is small (e.g., <10)	, if data are	collected using ISM approach, you should use	
254	guidance provided in ITRC Tech Reg (Guide on IS	M (ITRC, 2012) to compute statistics of interest.	
255	For example, you may want to	use Cheby:	shev UCL to estimate EPC (ITRC, 2012).	
256	Chebyshev UCL can be computed us	ing the Nor	nparametric and All UCL Options of ProUCL 5.1	
257				
258	Norma	I GOF Test	t on Detects Only	
259	Shapiro Wilk Test Statistic	0.855	Shapiro Wilk GOF Test	
260	5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Leve	ł
261	Lilliefors Test Statistic	0.337	Lilliefors GOF Test	
262	5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Leve)
263	Detected Data ar	ppear Norm	al at 5% Significance Level	
264				
265	Kaplan-Meier (KM) Statistics using	Normal Cr	itical Values and other Nonparametric UCLs	
266	KM Mean	6.488	KM Standard Error of Mean	1.01
267	KM SD	2.333	95% KM (BCA) UCL	N/A
268	95% KM (t) UCL	8.402	95% KM (Percentile Bootstrap) UCL	N/A
269	95% KM (z) UCL	8.149	95% KM Bootstrap t UCL	N/A
270	90% KM Chebyshev UCL	9.518	95% KM Chebyshev UCL	10.89
•				

271	Α	В	(C 97	D 7.5% KM		E yshev UCL	F . 12.8		G		Н		I	999	J % KM Ch	nebysł	K nev UCL	L 16.54	
272																				
273						Ga	mma GOF	Tests or	n De	tected Ob	ser	vations	Only							
274							Not Er	ough Da	ta to	Perform (GOI	F Test								
275																				
276							Gamma	Statistic	s on	Detected	Dat	ta Only								
277						k	(hat (MLE)	18.59	9						k sta	r (bias c	orrecte	ed MLE)	N/A	
278							hat (MLE)		2					The				ed MLE)	N/A	
279							ı hat (MLE)								r	nu star (b	ias co	rrected)	N/A	
280						Mea	in (detects)	8.96	7											
281																				
282			000	_			amma ROS									w L Bi				
283		CDOC					vhen data s					•				•		-1F 20\		
284		GROS ma	ay not be				ns, GROS					-					(e.g.,	< 15-20)		_
285				Г	or such s		is is espec							LS and	ı Dı V:	S				_
286		For as	amma di	ietrihu	itad data		ata, BTVs a				•			na dietr	ihutio	n on KM	octim:	atoc		_
287		i oi ga	airiiria ui	istribu	ilea dele	cieu u	Minimum		illa	ly be comp	Jule	u using	gamm	ia uisti	ibutioi	I OII IXIVI	CSum	Mean	4.024	_
288							Maximum											Median		
289							SD		9									CV	1.11	
290						k	(hat (MLE)								k sta	r (bias c	orrecte	ed MLE)	0.325	
291 292							hat (MLE)							The				ed MLE)	12.38	-
292							ı hat (MLE)		6									rrected)	5.199	
293			Ad	djuste	d Level c	of Signi	ificance (β)	0.019	95											
295		Α					ue (5.20, α)		5				Α	djuste	d Chi	Square \	/alue	(5.20, β)	0.825	
296		95% Gamm	na Appro	oxima	te UCL (use wh	nen n>=50)	16.8				95%	Gamı	ma Adj	usted	UCL (us	e whe	en n<50)	N/A	
297																				
298						Esti	imates of C	amma P	arar	meters usi	ng ł	KM Esti	mates	;						
299							Mean (KM)	6.48	8								(SD (KM)	2.333	
300						Var	iance (KM)	5.44	4							SE	of Me	an (KM)	1.01	
301							k hat (KM)	7.73	2								ks	tar (KM)	4.916	
302						r	nu hat (KM)										nu s	tar (KM)	78.65	
303							ta hat (KM)											tar (KM)	1.32	
304							entile (KM)											tile (KM)		
305				959	% gamm	a perc	entile (KM)	11.93	3						99% g	amma p	ercent	tile (KM)	15.15	
306								17 '		-1 (125.5)										_
307		Α	mre:-!	ote O'	d C	- \/-!··				eier (KM) S	otat	ISTICS	۸ ۱	ا- عجميا	Oh: O	auess 17	alua /=	70 CE O	F4.07	
308	0E9/	Ap Gamma Ap	•		•		e (78.65, α)				0	15% Car		-		quare va -UCL (us	•	78.65, β)	54.97 9.282	_
309	30%	Janina Ap	ρρισχιιή	aic N	IVI-UUL (use WI	1611 11/-50)	0.01	J		.	,0 (dd)	iiiiid F	wjusie	u rxivi-	-JOL (US	S WITE	лг н > 50)	9.202	-
310						l oc	normal Go	OF Test o	n D	etected OF	hsei	rvations	Only							
311				Ģ	Shapiro \		est Statistic			J.55.64 OI				hanim	Wilk	GOF Tes	st			_
312							itical Value			De	eter	cted Dat						ficance L	evel	
313 314							est Statistic									OF Test				
314				5			itical Value			De	etec	cted Dat					Signif	ficance L	evel	
316							ted Data a													
317																				
318						Log	normal RC	S Statist	ics l	Jsing Impu	uted	l Non-D	etects)						
319					Mean	in Ori	ginal Scale	5.33	1							Mea	n in Lo	og Scale	1.496	
320					SD	in Ori	ginal Scale	3.43	1							SI) in Lo	og Scale	0.641	
321		95% t	UCL (as	ssume	es norma	ality of	ROS data)	7.63						95	% Per	rcentile E	Bootst	rap UCL	7.297	\exists
322					95% BC	A Boo	tstrap UCL	7.73	6							95% Bo	ootstra	ap t UCL	8.69	
323					95% F	H-UCL	(Log ROS)	10.32	2											
324																				
- 1																				—

325	A B C D E Statistics using KM estimate	F s on Logged I	G G Data and Assu	H ming Logno	। ormal Distr	j ibution	K	L				
326	KM Mean (logged	1.818					KM Geo Mear	6.161				
327	KM SD (logged	0.304			95%	Critical H V	alue (KM-Log)	2.063				
328	KM Standard Error of Mean (logged	0.132				95% H-L	JCL (KM -Log)	8.176				
329	KM SD (logged	0.304			95%	Critical H V	alue (KM-Log)	2.063				
330	KM Standard Error of Mean (logged	0.132										
331			1									
332	DL/2 Statistics											
333	DL/2 Normal				DL/2 Log-	Transforme	d					
334	Mean in Original Scal						n in Log Scale					
335	SD in Original Scal					SI	O in Log Scale	0.664				
336	95% t UCL (Assumes normality						% H-Stat UCL	9.711				
337	DL/2 is not a recommended in	nethod, provi	ded for compa	risons and h	historical r	easons						
338												
339	Nonparametric Distribution Free UCL Statistics											
340	Detected Data appear Normal Distributed at 5% Significance Level											
341		Quaracta d	IIO +a Ua-									
342	OEO/ IVM (A) LIC		UCL to Use									
343	95% KM (t) UC	L 8.402										
344	Note: Suggestions regarding the selection of a 95	% IICL are pr	ovided to help	the user to	select the	most appron	riate 95% LIC					
345	Recommendations are b	•	•				a.c 33 /0 UC					
346	These recommendations are based upon the res						nd Lee (2006)					
347	However, simulations results will not cover all Real											
348 349												
-	Dibenzofuran											
350 351												
352		General	Statistics									
353	Total Number of Observation	s 8			Numb	er of Distinct	Observations	2				
354	Number of Detect	s 1				Number o	of Non-Detects	5 7				
355	Number of Distinct Detect	s 1			Numb	er of Distino	t Non-Detects	s 1				
356												
357	Warning: Only one distinct data value was detec	ted! ProUCL (or any other s	oftware) sho	ould not be	e used on su	ıch a data set	!				
358	It is suggested to use alternative site specific values deter	mined by the	Project Team	to estimate	environm	ental param	eters (e.g., El	PC, BTV).				
359												
360	The data set for	variable Dibe	enzofuran was	not process	sed!							
361												
362												
303	Fluoranthene											
364		Conorol	Ctatiation									
365	Total Number of Observation		Statistics		ا مدرالا	or of Distinct	Observations	7				
366	Number of Observation				NUITID		: Observations of Non-Detects					
367	Number of Detect				Numb		t Non-Detects					
368	Minimum Detect				INUIIL		ım Non-Deteci					
369	Maximum Detec						ım Non-Detec					
370	Variance Detect						nt Non-Detects					
371	Mean Detect					. 5,500	SD Detects					
372	Median Detect						CV Detects					
373 374	Skewness Detect					Κι	irtosis Detects					
374	Mean of Logged Detect						ogged Detects					
376							55					
	Note: Sample size is small (e.g., <	10), if data ar	e collected usi	ng ISM app	roach, you	ı should use	•					
377	guidance provided in ITRC Tech Re	•		•								
378	9		, :::::, = ;	, - 2be								

379	А	В	C For e	D example, yo	E ou may want	F to use Cheby	G Gshev UCL to e	H estimate E	 PC (ITRC, 2	J k 2012).		L		
380			Chebyshev	UCL can b	e computed	using the Nor	nparametric a	nd All UCL	_ Options of	ProUCL 5.1				
381														
382		Normal GOF Test on Detects Only												
383		Shapiro Wilk Test Statistic 0.817 Shapiro Wilk GOF Test												
384	5% Shapiro Wilk Critical Value 0.803 Detected Data appear Normal at 5% Significance Level)				
385	Lilliefors Test Statistic 0.23 Lilliefors GOF Test													
386	5% Lilliefors Critical Value 0.304 Detected Data appear Normal at 5% Significance Level)			
387				D	etected Data	appear Norm	nal at 5% Sign	ificance L	evel					
388														
389			Kaplan-	Meier (KM)	Statistics usi	ng Normal C	ritical Values a	and other	Nonparame	ric UCLs				
390					KM Mear	1.588			K	M Standard Error of	Mean	0.248		
391		KM SD 0.649 95% KM (BCA) L						UCL	1.988					
392				95	% KM (t) UCL	2.057			95% KM (Percentile Bootstrap)	UCL	1.988		
393				959	% KM (z) UCL	1.995			95% KM Bootstrap t UCL 2.308					
394			(90% KM Ch	nebyshev UCL	2.331		95% KM Chebyshev UCL 2						
395			97	.5% KM Ch	nebyshev UCL	3.135		UCL	4.053					
396							I							
397					Gamma GOF	Tests on De	tected Obser	vations Or	nly					
398				A-D	Test Statistic	0.443			Anderson-Da	rling GOF Test				
399				5% A-D	Critical Value	0.709	Detected	data appe	ar Gamma D	istributed at 5% Sigr	nificance	e Level		
400				K-S	Test Statistic	0.206		Kolmogorov-Smirnov GOF						
401						data appe	ar Gamma D	istributed at 5% Sigr	nificance	e Level				
402				Detecte	ed data appea	⊥ ar Gamma Dis	stributed at 5%	6 Significa	nce Level					
403														
404					Gamma	Statistics or	Detected Dat	ta Only						
404					k hat (MLE)				k	star (bias corrected	MLE)	4.644		
405				Th	neta hat (MLE)					star (bias corrected		0.36		
407					nu hat (MLE)	<u> </u>				nu star (bias corre	·	65.01		
407				N	/lean (detects)	1.671				`				
409 410					Gamma ROS	3 Statistics u	sing Imputed I	Non-Detec	ts					
			GROS may				NDs with ma			multiple DLs				
411	(GROS may	•					•		ize is small (e.g., <1	5-20)			
412		 					yield incorrect	-		· •	,			
413						•	n the sample							
414 415		For gan	nma distribu'		•	-				ıtion on KM estimate	S			
		J			Minimum		- F				Mean	1.499		
416					Maximum					edian	1.4			
417					SD			C						
418					k hat (MLE)				k	star (bias corrected		0.543 2.068		
419				Th	neta hat (MLE)					star (bias corrected		0.725		
420					nu hat (MLE)					nu star (bias corre	- 1	33.09		
421			Adiustec	Level of Si	ignificance (β)					(2.20 00110				
422		Ann			alue (33.09, α)				Adjusted C	ni Square Value (33.0	09. B)	18.53		
423	95				when n>=50)			95% G	•	ted UCL (use when r		2.676		
424		damma	. фролина			2.000			annia Aujus	.53 552 (455 WHOTT	. 50)			
425				F	-stimates of (Bamma Parai	meters using k	(M Fstims	ntes					
426					Mean (KM)					SD	(KM)	0.649		
427					Variance (KM)	'				SE of Mean		0.049		
428					k hat (KM)	<u> </u>				k star	` ′	3.824		
429					nu hat (KM)	<u> </u>				nu star		61.18		
430					theta hat (KM)	'				theta star		0.415		
431			000		ercentile (KM)	1			00	tneta star % gamma percentile	` '	2.676		
432			607	y gamma pe	STOCTION (NIVI)	<u> </u>			90	vo gamma percenule	(IXIVI)	2.070		

100	A B C D E 95% gamma percentile (KM)	F 3.114	G	Н		J 99% gamma per	K centile (KM)	L 4.053				
433 434	co // gamma parosimilo (ram)	0.111				yo yo gamma por	sorialo (ravi)					
435	Gamma Kaplan-Meier (KM) Statistics											
436	Approximate Chi Square Value (61.18, α) 44.19 Adjusted Chi Square Value (61.18, β)											
437	95% Gamma Approximate KM-UCL (use when n>=50)	2.198	(95% Gamma Adjusted KM-UCL (use when n								
438												
439	Lognormal GOF Test on Detected Observations Only											
440	Shapiro Wilk Test Statistic 0.89 Shapiro Wilk GOF Test 5% Shapiro Wilk Critical Value 0.803 Detected Data appear Lognormal at 5% Significance Level											
441	5% Shapiro Wilk Critical Value	0.803	Dete	cted Data			ignificance Le	vel				
442	Lilliefors Test Statistic	0.192	Lilliefors GOF Test									
443	5% Lilliefors Critical Value 0.304 Detected Data appear Lognormal at 5% Significance Level Detected Data appear Lognormal at 5% Significance Level											
444	Detected Data ap	pear Lognor	IIIai at 5% Si	gnincance	Level							
445	Lognormal ROS Statistics Using Imputed Non-Detects											
446 447	Mean in Original Scale	1.541	Joing Impare			Mean i	n Log Scale	0.336				
448	SD in Original Scale	0.748					n Log Scale	0.471				
448	95% t UCL (assumes normality of ROS data)	2.043			95	% Percentile Bo	•	1.975				
450	95% BCA Bootstrap UCL	2.063				95% Boo	tstrap t UCL	2.243				
451	95% H-UCL (Log ROS)	2.358										
452												
453	Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution											
454	KM Mean (logged)					// Geo Mean	1.482					
455	KM SD (logged)	0.355			959	% Critical H Valu		2.131				
456	KM Standard Error of Mean (logged)	0.136		95% H-UCL (KM -Log)								
457	KM SD (logged)	0.355			959	% Critical H Valu	ie (KM-Log)	2.131				
458	KM Standard Error of Mean (logged)	0.136										
459		DI /2 St	tatistics									
460	DL/2 Normal				DL/2 Lor	g-Transformed						
461 462	Mean in Original Scale	1.525	_									
463	SD in Original Scale	0.772					n Log Scale	0.531				
464	95% t UCL (Assumes normality)	2.042				95%	H-Stat UCL	2.537				
465	DL/2 is not a recommended me	ethod, provid	ded for compa	arisons and	d historical	reasons						
466												
467	-		tion Free UCL									
468	Detected Data appear	r Normal Dis	stributed at 59	6 Significa	nce Level							
469												
470	050/ 1/44 (0 110)		UCL to Use									
471	95% KM (t) UCL 2.057											
472	Note: Suggestions regarding the selection of a 95%	UCL are pro	ovided to helr) the user t	n select the	e most annronria	ate 95% LICI					
473		Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness.										
474 475	These recommendations are based upon the resul						Lee (2006).					
476	However, simulations results will not cover all Real W						. , ,	n.				
477												
478												
	Phenanthrene											
480												
481			Statistics									
482	Total Number of Observations	8				ber of Distinct O		7				
483		0.4			Numl	ber of Missing O		0				
484	Minimum	3.4					Mean	4.375				
485	Maximum	5.8 0.846				C+4 F-	Median rror of Mean	4.25				
486	SD	U.040				Stu. El	TOT OF IVIEAN	0.299				

	Α	В	С	Coeffic	cient of V	E ariation	F 0.193	G	Н		ı		J	K Skewness	0.723
487 488				Coemi	CIEIII OI V	anation	0.193							OKEWII633	0.723
489			Note: San	mple size i	is small (e	e.g., <10), if data are	collected u	sing ISM	appro	ach, yo	u sho	uld use		
490			guidance p	orovided in	n ITRC Te	ech Reg	Guide on IS	M (ITRC, 20)12) to co	mpute	e statist	ics of	interest	•	
491			For	r example	, you may	y want to	use Cheby	shev UCL to	estimate	EPC	(ITRC,	2012)).		
492			Chebyshe	ev UCL ca	n be com	nputed u	sing the Nor	parametric	and All U	CL O	otions o	f ProU	JCL 5.1		
493															
494							Normal C	OF Test							
495			,	Shapiro W	Vilk Test S	Statistic	0.913			S	hapiro V	Vilk G	OF Test	ļ	
496			5% 5	Shapiro W	/ilk Critica	al Value	0.818		Data a	ppear				ance Level	
497					ors Test S		0.238				Lilliefor				
498				5% Lilliefo			0.283				Normal	at 5%	Signific	ance Level	
499					Da	ta appea	ar Normal at	5% Significa	ance Lev	el					
500						A		I Di il	·						
501			0F0/ N		N.	Ass	suming Norn	nal Distributi		F0/ 11/	OL = /A 4		l for Olso		
502			95% N	Normal UC		o + LICI	4.042		9:				I for Ske		4.040
503				95%	Student's	s-ι UCL	4.942							(Chen-1995) hnson-1978)	4.949 4.955
504										95	/o IVIOOI	meu-t	OCT (10	niii5011-1978)	4.900
505							Gamma (OF Test							
506					A-D Test S	Statistic	0.332	101 163t	An	derso	n-Darlin	n Gar	nma GC)F Test	
507					-D Critica		0.716	Detected						5% Significar	ice Level
508					K-S Test S		0.214							OF Test	
509					(-S Critica		0.294	Detected						5% Significar	ice Level
510 511				Dete	cted data	a appear	Gamma Dis	tributed at 5						- · · y · ·	
512						•••									
513							Gamma	Statistics							
514					k ha	it (MLE)	31.92					k star	(bias co	rrected MLE)	20.03
515					Theta ha	t (MLE)	0.137				Theta	a star	(bias co	rrected MLE)	0.218
516					nu ha	t (MLE)	510.7					nu	ı star (bi	as corrected)	320.5
517			N	MLE Mean	(bias co	rrected)	4.375					ML	E Sd (bi	as corrected)	0.977
518										Ар	proxima	te Chi	i Square	Value (0.05)	280.1
519			Adju	usted Leve	el of Signi	ificance	0.0195					Adjust	ted Chi S	Square Value	270.5
520						'									
521						Ass	uming Gam	ma Distribut	ion						
522	9	5% Approx	imate Gamm	na UCL (us	se when r	n>=50))	5.007		95%	Adjus	ted Gar	nma L	JCL (use	e when n<50)	5.185
523							_								
524					=		Lognormal	GOF Test							
525				Shapiro W			0.935						mal GOI		
526			5% 8	Shapiro W			0.818							ficance Level	
527					ors Test S		0.205						al GOF		
528				5% Lilliefo			0.283	o+ E0/ O!'5			ognorm	aı at 5	% Signi	ficance Level	
529					Data	appear	Lognormal	at 5% Signifi	icance Le	:vei					
530							Lognorma	I Statistica							
531				Minimus	n of Logge	ad Data	Lognorma 1.224	olatistics					Mean	f logged Data	1.46
532				Maximum			1.758							f logged Data f logged Data	0.188
533				widAIIIIUII	. o. Logge	ou Dala	1.730						0 0	liogyeu Dala	0.100
534						Assu	mina Loano	rmal Distribu	ution						
535					95%	H-UCL	5.028	51001100			90%	% Che	byshev	(MVUE) UCL	5.247
536			95%	6 Chebysh			5.643						-	(MVUE) UCL	6.192
537				6 Chebysh	•	·	7.272				,			, , , , , , , ,	
538				,	, -	, -									
539 540					Nor	nparame	tric Distribut	ion Free UC	L Statisti	cs					
04 0															

	Α	В	С	Data and	poar t	E o follow a	F Discernible	G	H at 5% Sic	gnificano		J		K		L
541				Data ap	pear t	o ioliow a	Discernible	Jistribution	at 0 % Oig	grillicario	C LCVCI					
542						Nonpa	arametric Dis	tribution Fr	ee UCLs							
543 544					95%	CLT UCL						959	% Jac	kknife l	JCL	4.942
545			95%	Standard	d Boot	strap UCL	4.831					95%	Boots	strap-t l	JCL	5.266
546			9	95% Hall's	s Boot	strap UCL	5.786				95% F	ercentil	le Boo	tstrap l	JCL	4.85
547				95% BCA	A Boot	strap UCL	4.925									
548			90% Ch	nebyshev((Mean	, Sd) UCL	5.273				95% Ch	ebyshev	/(Mea	n, Sd) l	JCL	5.679
549			97.5% Ch	nebyshev((Mean	, Sd) UCL	6.244				99% Ch	ebyshev	v(Mear	n, Sd) l	JCL	7.353
550																
551							Suggested	UCL to Use	е							
552				95%	Stude	nt's-t UCL	4.942									
553																
554	I	Note: Sugge:	stions regard										ropriat	e 95%	UCL.	
555							sed upon da									
556			mmendations													
557	Ho	wever, simu	llations result	ts will not	t cover	all Real V	Vorld data se	ts; for addit	ional insig	the us	er may v	vant to d	consul	t a stati	ısticiar	1.
558																
559	Pon-or-															
300	Benzene															
561							Gonoral	Statistics								
562			Total	l Number	of Oh	servations		Jialistics			Number	of Dietii	nct Ok	eervati	ione	8
563				INUITIDE	OI OD:		-				Number					0
564						Minimum	n 13				TAUTIDO	OI WIISSI	ing OL		lean	29.25
565						Maximum									dian	22
566						SD						S	td. Err	or of M		7.173
567				Coeffic	cient o	f Variation								Skewn	ness	2.169
568 569																
570			Note: Sam	ple size is	s sma	II (e.g., <1	I0), if data ar	e collected	using ISM	√l approa	ch, you	should u	ıse			
571			guidance pr	rovided in	1TRC	Tech Re	g Guide on I	SM (ITRC, 2	2012) to c	ompute	statistics	of inter	rest.			
572			For	example,	, you n	nay want f	to use Cheby	/shev UCL t	to estimat	te EPC (I	TRC, 20	12).				
573			Chebyshev	v UCL car	n be c	omputed	using the No	nparametric	c and All l	UCL Opti	ions of P	roUCL !	5.1			
574																
575								GOF Test								
576			S	Shapiro W	/ilk Te	st Statistic				Sha	apiro Wil	k GOF	Γest			
577			5% SI			tical Value			Data	a Not No				e Level	1	
578						st Statistic					illiefors (
579			5	5% Lilliefo	ors Crit	tical Value				a Not No	rmal at 5	% Signi	ficanc	e Level	1	
580						Data No	ot Normal at 5	i% Significa	ance Leve							
581																
582			OFO/ N		<u> </u>	A	ssuming Nor	mai Distribu		050/ 1101	- /A -II		01			
583			95% NO	ormal UC		nt's t LICI	42.04			95% UCL					00E)	46.02
584				95%	Stude	ent's-t UCL	42.84				Adjuste				- 1	46.93 43.76
585										95%	% Modifie	u-i UCL	. (3011	13011-18	,,,,,	+5.70
586							Gamma	GOF Test								
587				Δ	\-D Te	st Statistic			A	nderson-	-Darling	Gamma	GOF	Test		
588						tical Value		Detect	ed data ap						ficance	e Level
589						st Statistic				lmogorov						
590 591						tical Value		Detect	ed data ap							Level
591							ar Gamma Di									
593																
594							Gamma	Statistics								
JJ4																

	Α	В		С	D		E (MLE)	F 3.472	G	Н	l	J star (bias cor	K K	L 2.253
595						Theta hat		8.425				star (bias cor star (bias cor		12.98
596						nu hat		55.55			mota	`	as corrected)	36.05
597				М	l F Mear	n (bias corr	` ′	29.25				•	as corrected)	19.49
598					LL Mou	11 (5105 6611	coloa)	20.20			Annroximate	Chi Square	•	23.31
599				Adius	sted Lev	el of Signif	icance	0.0195				djusted Chi S	1 1	20.75
600				/ tajut	otou Lov	Ci Oi Oigiiii	icaricc	0.0100				ajuotea orii e	quare value	20.70
601 602							Ass	suming Gam	ma Distribu	tion				
603	(95% Approx	kimate	Gamm	a UCL (ı	use when r		45.24			djusted Gam	ma UCL (use	when n<50)	50.81
604							-					<u>.</u>	·	
605								Lognormal	GOF Test					
606				S	Shapiro V	Wilk Test S	tatistic	0.904		Sha	piro Wilk Lo	normal GOF	Test	
607				5% S	hapiro V	Vilk Critical	Value	0.818		Data appea	ar Lognorma	at 5% Signif	icance Level	
608					Lillief	fors Test S	tatistic	0.226		Li	lliefors Logn	ormal GOF T	est	
609				5	% Lillief	fors Critical	Value	0.283		Data appea	ar Lognorma	at 5% Signif	icance Level	
610						Data	appear	Lognormal	at 5% Signif	icance Leve	I			
611														
612								Lognorma	l Statistics					
613					Minimun	m of Logge	d Data	2.565				Mean of	logged Data	3.225
614				ı	Maximun	m of Logge	d Data	4.331				SD of	logged Data	0.544
615														
616							Assu	ıming Logno	rmal Distrib	ution				
617							H-UCL	48.11				Chebyshev (,	45.28
618						hev (MVUE	,	52.84			97.5%	Chebyshev (MVUE) UCL	63.34
619				99%	Chebysl	hev (MVUE	E) UCL	83.96						
620														
621								tric Distribut						
622					Data a	ppear to fo	llow a l	Discernible D	Distribution a	at 5% Signifi	cance Level			
623							Manna		ulbustan Fua					
624								ametric Dist	ribution Fre	e UCLS		050/ 1-	-1-1	40.04
625				050/	Ctanda	95% CL		41.05					ckknife UCL	42.84
626						rd Bootstra	-	40.22			050/		otstrap-t UCL	74.48
627						l's Bootstra	•	101.7			95%	Percentile Bo	ootstrap UCL	41.25
628						CA Bootstra v(Mean, So	•	46.88 50.77			0E9/ CI	nebyshev(Me	on Cd/ LICI	60.52
629						v(Mean, So	•	74.05				` `	all, Su) UCL	00.52
630			9	, .u /o Ul	ign) Sile	A CIAIL-CIT - 21					aa% ∩!	ahvehav/Ma		100.6
631	Ī					. (5011, 50	1) OOL	74.05			99% CI	nebyshev(Me		100.6
						.,	,		UCL to I lea		99% CI	nebyshev(Me		100.6
632				95	% Adius		,	Suggested	UCL to Use		99% CI	nebyshev(Me		100.6
632 633				95	% Adjus	sted Gamm	,		UCL to Use		99% CI	nebyshev(Me		100.6
632 633 634		Note: Suane	estion			sted Gamm	a UCL	Suggested 50.81					an, Sd) UCL	100.6
632 633 634 635	1	Note: Sugge	estion	s regard	ling the s	sted Gamm	a UCL f a 95%	Suggested 50.81 UCL are pro	ovided to he	lp the user to	o select the n	nost appropri		100.6
632 633 634 635 636	ı			s regarc	ling the s	sted Gamm selection o	a UCL f a 95% are bas	Suggested 50.81 UCL are proceed upon data	ovided to he a size, data	lp the user to	o select the n	nost appropri	an, Sd) UCL	100.6
632 633 634 635 636 637		These reco	omme	s regard F ndations	ling the s Recomm	sted Gamm selection o nendations sed upon th	a UCL f a 95% are bas ne resu	Suggested 50.81 UCL are project upon data	ovided to he a size, data ulation stud	lp the user to distribution, ies summari	o select the n and skewned zed in Singh	nost appropri ss. Maichle, and	an, Sd) UCL	
632 633 634 635 636 637 638		These reco	omme	s regard F ndations	ling the s Recomm	sted Gamm selection o nendations sed upon th	a UCL f a 95% are bas ne resu	Suggested 50.81 UCL are project upon data	ovided to he a size, data ulation stud	lp the user to distribution, ies summari	o select the n and skewned zed in Singh	nost appropri ss. Maichle, and	an, Sd) UCL ate 95% UCL.	
632 633 634 635 636 637 638 639		These reco	omme	s regard F ndations	ling the s Recomm	sted Gamm selection o nendations sed upon th	a UCL f a 95% are bas ne resu	Suggested 50.81 UCL are project upon data	ovided to he a size, data ulation stud	lp the user to distribution, ies summari	o select the n and skewned zed in Singh	nost appropri ss. Maichle, and	an, Sd) UCL ate 95% UCL.	
632 633 634 635 636 637 638 639 640	Но	These reco	omme	s regard F ndations	ling the s Recomm	sted Gamm selection o nendations sed upon th	a UCL f a 95% are bas ne resu	Suggested 50.81 UCL are project upon data	ovided to he a size, data ulation stud	lp the user to distribution, ies summari	o select the n and skewned zed in Singh	nost appropri ss. Maichle, and	an, Sd) UCL ate 95% UCL.	
632 633 634 635 636 637 638 639 640	Но	These reco	omme	s regard F ndations	ling the s Recomm	sted Gamm selection o nendations sed upon th	a UCL f a 95% are bas ne resu	Suggested 50.81 UCL are project upon data	ovided to he a size, data ulation stud ts; for additio	lp the user to distribution, ies summari	o select the n and skewned zed in Singh	nost appropri ss. Maichle, and	an, Sd) UCL ate 95% UCL.	
632 633 634 635 636 637 638 639 640 641 642	Но	These reco	omme	s regarc F ndations ns result	ling the s Recomm s are bas ts will no	sted Gamm selection o nendations sed upon th	a UCL f a 95% are bas ne resu Real W	Suggested 50.81 UCL are proceed upon data its of the sim	ovided to he a size, data ulation stud ts; for additio	lp the user to distribution, ies summari	o select the n and skewnes zed in Singh he user may	nost appropri ss. Maichle, and	ate 95% UCL. d Lee (2006). ult a statisticia	
632 633 634 635 636 637 638 639 640 641 642 643	Но	These reco	omme	s regarc F ndations ns result	Recomm s are bas s will no	sted Gamm selection o nendations sed upon the	a UCL f a 95% are bas ne resu Real W	Suggested 50.81 UCL are project upon data its of the simple ordered seed upon data seed.	ovided to he a size, data ulation stud ts; for additio	lp the user to distribution, ies summari	o select the n and skewnes zed in Singh he user may	nost appropri ss. Maichle, and want to cons	ate 95% UCL. d Lee (2006). ult a statisticia	ın.
632 633 634 635 636 637 638 639 640 641 642 643	Но	These reco	omme	s regard F ndations ns result Total	Recomm s are bas s will no	sted Gamm selection o nendations sed upon the ot cover all	a UCL f a 95% are bas ne resu Real W vations	Suggested 50.81 UCL are producted upon data its of the sim forld data set	ovided to he a size, data ulation stud ts; for additio	lp the user to distribution, ies summari	o select the n and skewnes zed in Singh he user may Numbe	nost appropri ss. Maichle, and want to cons	ate 95% UCL. d Lee (2006). ult a statisticia	n. 7
632 633 634 635 636 637 638 639 640 641 642 643 644 645	Но	These reco	omme	s regard F ndations ns result Total	Recomm s are bas s will no	selection on endations sed upon the ot cover all er of Observalumber of D	a UCL f a 95% are bas ne resu Real W vations Detects	Suggested 50.81 UCL are proceed upon data its of the sim forld data set General S 8 7	ovided to he a size, data ulation stud ts; for additio	lp the user to distribution, ies summari	o select the n and skewnes zed in Singh he user may Numbe	nost appropri ss. Maichle, and want to cons r of Distinct C Number of er of Distinct	ate 95% UCL. d Lee (2006). ult a statisticia	7 1
632 633 634 635 636 637 638 639 640 641 642 643 644 645 646	Но	These reco	omme	s regard F ndations ns result Total	Number o	selection on the selection of the select	a UCL f a 95% are bas ne resu Real W vations Detects Detects	Suggested 50.81 UCL are project upon data its of the sim forld data set General S 8 7 6	ovided to he a size, data ulation stud ts; for additio	lp the user to distribution, ies summari	o select the n and skewnes zed in Singh he user may Numbe	nost appropri ss. Maichle, and want to cons r of Distinct (Number of er of Distinct Minimum	ate 95% UCL. d Lee (2006). ult a statisticia Observations Non-Detects	7 1
632 633 634 635 636 637 638 639 640 641 642 643 644	Но	These reco	omme	s regard F ndations ns result Total	Recomm s are bas s will no Number Number o	sted Gamm selection o nendations sed upon the ot cover all or of Observatumber of E of Distinct E Minimum	a UCL f a 95% are bas ne resu Real W vations Detects Detect Detect	Suggested 50.81 UCL are proceed upon data its of the sim forld data set General 9 8 7 6 11	ovided to he a size, data ulation stud ts; for additio	lp the user to distribution, ies summari	o select the n and skewnes zed in Singh he user may Numbe	nost appropri es. Maichle, and want to cons r of Distinct (Number of er of Distinct Minimum Maximum	ate 95% UCL. d Lee (2006). ult a statisticia Dbservations Non-Detects Non-Detects	7 1 1 20

0.40	Α	В	С		D	E Mean Dete	cts	F 70.86	G	F	ł	I			J	K SD Detects	L 77.54
649 650						ledian Dete		42								CV Detects	1.094
650 651					Skev	vness Dete		2.242							Kur	tosis Detects	5.407
652				Mea	an of Lo	ogged Dete	cts	3.857						SD	of Log	gged Detects	0.955
653																	
654			Note: Sa	ample s	size is s	small (e.g.,	<10),	if data are	e collected	using IS	М ар	proach,	you	shoul	d use		
655						TRC Tech F							-				
656			Fo	or exar	nple, y	ou may war	nt to u	se Cheby	shev UCL	to estima	ate El	PC (ITF	RC, 20	012).			
657			Chebysh	nev UC	L can I	be compute	d usin	ng the Noi	nparametri	c and All	UCL	Option	s of F	ProUC	L 5.1		
658																	
659						No	ormal	GOF Tes	t on Detec	s Only							
660				Shap	iro Wilk	Test Statis	stic	0.715				Shapi	ro Wi	ilk GO	F Test		
661			5%	Shapi	ro Wilk	Critical Val	lue	0.803		Detecte	ed Dat	a Not N	Vorma	al at 5°	% Sign	ificance Leve	
662				L	illiefors	Test Statis	stic	0.336				Lillie	efors	GOF	Test		
663				5% L	illiefors	Critical Val	lue	0.304		Detecte	ed Dat	a Not N	lorma	al at 5	% Sign	ificance Leve	į.
664						Detected D	Data N	lot Norma	l at 5% Sig	nificance	e Lev	el					
665																	
666			Kapla	an-Mei	er (KM)	Statistics (using I	Normal C	ritical Valu	es and o	ther N	lonpara	ametr	ric UC	Ls		
667						KM Me	an	63.38					K۱	M Star	ndard E	rror of Mean	26.74
668						KMS	SD	70.01						9	5% KN	I (BCA) UCL	112.6
669					95	5% KM (t) U	CL 1	114				95% k	KM (P	Percen	tile Bo	otstrap) UCL	108.8
670					95	% KM (z) U	CL 1	107.4						95% k	KM Boo	otstrap t UCL	193.1
671				90%	KM Ch	nebyshev U	CL 1	143.6					(95% K	M Che	byshev UCL	179.9
672				97.5%	KM Ch	nebyshev U	CL 2	230.3					(99% K	M Che	byshev UCL	329.4
673									I								
674						Gamma G	OF Te	ests on De	tected Ob	servation	ıs Onl	y					
675					A-D	Test Statis	stic	0.378			Α	nderso	n-Da	rling G	OF Te	est	
676				5	5% A-D	Critical Val	lue	0.723	Detect	ed data a	appea	ır Gamr	na Di	istribu	ted at !	5% Significan	ce Level
677					K-S	S Test Statis	stic	0.219			ŀ	Colmog	orov-	Smirn	ov GO	F	
678				5	5% K-S	Critical Val	lue	0.318	Detect	ed data a	appea	ır Gamr	na Di	istribu	ted at !	5% Significan	ce Level
679				l	Detecte	ed data app	ear G	amma Dis	stributed at	5% Sigi	nificar	nce Lev	el				
680																	
681						Gamı	ma Sta	atistics on	Detected	Data On	ly						
682						k hat (ML	.E)	1.383					k:	star (b	ias co	rrected MLE)	0.885
683					Th	neta hat (ML	.E)	51.25				Т	heta	star (b	ias co	rrected MLE)	80.04
684						nu hat (ML	.E)	19.36						nu s	star (bia	as corrected)	12.39
685					N	/lean (detec	ts)	70.86									
686							1		1								
687						Gamma R	OS St	tatistics us	sing Imput	ed Non-E	Detect	s					
688			GROS m	nay not	be use	ed when dat	a set h	has > 50%	NDs with	many tie	d obs	ervatio	ns at	multip	le DLs	i	
689		GROS m	ay not be us	sed wh	en ksta	r of detects	is sma	all such a	s <1.0, esp	ecially w	hen tl	ne sam	ple si	ize is s	small (e	e.g., <15-20)	
690				For su	ch situa	ations, GRC	OS me	thod may	yield incor	ect value	es of l	UCLs a	nd B	TVs			
691						This is esp	ecially	y true whe	n the sam	ole size is	s sma	II.					
692		For g	amma distril	buted o	detecte	d data, BTV	's and	I UCLs ma	y be comp	uted usir	ng gar	nma dis	stribu	tion or	n KM e	stimates	
693						Minimu	um	0.01								Mean	62
694						Maximu	um 2	240								Median	42
695						(SD	76.03								CV	1.226
696						k hat (ML	.E)	0.481					k:	star (b	ias co	rrected MLE)	0.384
697					Th	neta hat (ML	.E) 1	128.8				Т	heta	star (b	ias co	rrected MLE)	161.4
698						nu hat (ML	.E)	7.7						nu s	tar (bia	as corrected)	6.146
699			Adjust	ted Lev	el of S	ignificance	(β)	0.0195									
700		A	Approximate	Chi S	quare \	/alue (6.15,	α)	1.715				Adjus	ted C	hi Squ	uare Va	alue (6.15, β)	1.19
701		95% Gamn	na Approxim	nate U0	CL (use	when n>=5	50) 2	222.2		95	5% Ga	ımma A	djust	ted UC	CL (use	when n<50)	320.2
702									1								

Variance (KM) 4901 SE of Mee 705 National N	ar (KM) ar (KM) ar (KM) ile (KM) ile (KM) g.53, β) n n<50) icance L icance L g Scale g Scale ap UCL	
705 Variance (KM) 4901 SE of Med 706 k hat (KM) 0.819 k st 707 nu hat (KM) 13.11 nu st 708 theta hat (KM) 177.34 theta st 709 80% gamma percentile (KM) 104.5 90% gamma percentile 710 95% gamma percentile (KM) 228.7 99% gamma percentile 711 Gamma Kaplan-Meier (KM) Statistics 712 Approximate Chi Square Value (9.53, a) 3.649 Adjusted Chi Square Value (1.74) 714 95% Gamma Approximate KM-UCL (use when n>=50) 165.5 95% Gamma Adjusted KM-UCL (use when n>=50) 715 Lognormal GOF Test on Detected Observations Only 165.5 95% Gamma Adjusted KM-UCL (use when n>=50) 716 Lognormal GOF Test on Detected Observations Only 165.5 95% Gamma Adjusted KM-UCL (use when n>=50) 717 Shapiro Wilk Test Statistic 0.971 Shapiro Wilk GOF Test 718 5% Shapiro Wilk Critical Value 0.803 Detected Data appear Lognormal at 5% Significance Level 721 Detected Data appear Lognormal at 5% Significance Level 165.5	ar (KM) ar (KM) ar (KM) ile (KM) ile (KM) g.53, β) n n<50) icance L icance L g Scale g Scale ap UCL	0.595 9.528 106.4 165.1 382.5 2.79 216.5 evel evel 3.665 1.039 110.8
706 k hat (KM) 0.819 k st 707 nu hat (KM) 13.11 nu st 708 theta hat (KM) 77.34 theta st 709 80% gamma percentile (KM) 104.5 90% gamma percentil 710 95% gamma percentile (KM) 104.5 90% gamma percentil 711 228.7 99% gamma percentil 712 Gamma Kaplan-Meier (KM) Statistics 713 Approximate Chi Square Value (9.53, d) 3.649 Adjusted Chi Square Value (1.54) 714 95% Gamma Approximate KM-UCL (use when n>=50) 165.5 95% Gamma Adjusted KM-UCL (use when n>=50) 715 Lognormal GOF Test on Detected Observations Only Shapiro Wilk Critical Value 0.803 Detected Data appear Lognormal at 5% Significance Use (1.55) 718 5% Shapiro Wilk Critical Value 0.803 Detected Data appear Lognormal at 5% Significance Level 719 Lilliefors Critical Value 0.804 Detected Data appear Lognormal at 5% Significance Level 720 5% Lilliefors Critical Value 0.304 Detected Data appear Lognormal at 5% Significance Level 722 Mean in Original Scale 74.93 Mean in Lognormal Original Scale 74.93	ar (KM) ar (KM) ile (KM) ile (KM) g.53, β) n n<50) icance L icance L g Scale g Scale ap UCL	9.528 106.4 165.1 382.5 2.79 216.5 evel evel 3.665 1.039 110.8
707 nu hat (KM) 13.11 nu st 708 theta hat (KM) 77.34 theta st 709 80% gamma percentile (KM) 104.5 90% gamma percentil 710 95% gamma percentile (KM) 104.5 90% gamma percentil 711 Gamma Kaplan-Meier (KM) Statistics 712 Gamma Kaplan-Meier (KM) Statistics 713 Approximate Chi Square Value (9.53, α) 3.649 Adjusted Chi Square Value (cluse when N=50) 714 95% Gamma Approximate KM-UCL (use when N=50) 165.5 95% Gamma Adjusted KM-UCL (use when N=715 716 Lognormal GOF Test on Detected Observations Only 717 Shapiro Wilk Test Statistic 0.971 Shapiro Wilk GOF Test 718 5% Shapiro Wilk Critical Value 0.803 Detected Data appear Lognormal at 5% Significance Level 719 5% Lilliefors Critical Value 0.304 Detected Data appear Lognormal at 5% Significance Level 721 Detected Data appear Lognormal at 5% Significance Level 722 Lognormal ROS Statistics Using Imputed Non-Detects 723	ar (KM) ile (KM) g.53, β) n n<50) icance L icance L g Scale g Scale ap UCL	106.4 165.1 382.5 2.79 216.5 evel evel 3.665 1.039 110.8
708 theta hat (KM) 77.34 theta st 709 80% gamma percentile (KM) 104.5 90% gamma percentil 710 95% gamma percentile (KM) 104.5 90% gamma percentil 711 Gamma Kaplan-Meier (KM) Statistics 712 Gamma Kaplan-Meier (KM) Statistics 713 Approximate Chi Square Value (9.53, c) 3.649 Adjusted Chi Square Value (1.53, c) 714 95% Gamma Approximate KM-UCL (use when n>=50) 165.5 95% Gamma Adjusted KM-UCL (use when n>=50) 715 Lognormal GOF Test on Detected Observations Only 717 Shapiro Wilk Test Statistic 0.971 Shapiro Wilk GOF Test 718 5 Shapiro Wilk Critical Value 0.803 Detected Data appear Lognormal at 5% Signific 719 Lilliefors Test Statistic 0.172 Lilliefors GOF Test 720 5 Statistics Using Imputed Data appear Lognormal at 5% Signific 721 Detected Data appear Lognormal at 5% Significance Level 722 <t< td=""><td>ile (KM) ile (KM) 9.53, β) n n<50) icance L icance L g Scale g Scale ap UCL</td><td>165.1 382.5 2.79 216.5 evel evel 3.665 1.039 110.8</td></t<>	ile (KM) ile (KM) 9.53, β) n n<50) icance L icance L g Scale g Scale ap UCL	165.1 382.5 2.79 216.5 evel evel 3.665 1.039 110.8
709 80% gamma percentile (KM) 104.5 90% gamma percentil 710 95% gamma percentile (KM) 228.7 99% gamma percentil 711 Gamma Kaplan-Meier (KM) Statistics 713 Approximate Chi Square Value (9.53, α) 3.649 Adjusted Chi Square Value (1.54) 714 95% Gamma Approximate KM-UCL (use when n≥=50) 165.5 95% Gamma Adjusted KM-UCL (use when n≥ 1.50) 715 Lognormal GOF Test on Detected Observations Only 1165.5 95% Gamma Adjusted KM-UCL (use when n≥ 1.50) 716 Lognormal GOF Test on Detected Observations Only 117 Shapiro Wilk Test Statistic New normal static New normal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data appear Lognormal at 5% Significans Detected Data Detected Data appear Lognormal Agratical New New New New New New	g Scale g Scale ap UCL	382.5 2.79 216.5 evel 3.665 1.039 110.8
710 95% gamma percentile (KM) 228.7 99% gamma percentile 711 Gamma Kaplan-Meier (KM) Statistics 713 Approximate Chi Square Value (9.53, a) 3.649 Adjusted Chi Square Value (9.53, a) 714 95% Gamma Approximate KM-UCL (use when n>=50) 165.5 95% Gamma Adjusted KM-UCL (use when recent of the statistic of	9.53, β) n n<50) icance L icance L g Scale g Scale ap UCL	2.79 216.5 evel evel 3.665 1.039 110.8
711 712 Gamma Kaplan-Meier (KM) Statistics 713 Approximate Chi Square Value (9.53, α) 3.649 Adjusted Chi Square Value (9.53, α) 3.649 Symma Adjusted Chi Square Value (9.53, α) 3.649 Symma Adjusted KM-UCL (use when N=50) 165.5 95% Gamma Adjusted KM-UCL (use when N=50) 165.5 165.5 165.5 165.5 165.5 165.5 165.5 165.5 165.5 165.5 165.5 165.5 165.5 165.5 165.5 165.5 165.5	n n<50) icance L icance L g Scale g Scale ap UCL	216.5 evel 3.665 1.039 110.8
712 Gamma Kaplan-Meier (KM) Statistics 713 Approximate Chi Square Value (9.53, α) 3.649 Adjusted Chi Square Value (9.57) 714 95% Gamma Approximate KM-UCL (use when n>=50) 165.5 95% Gamma Adjusted KM-UCL (use when Post of Post on Detected Observations Only 715 Lognormal GOF Test on Detected Observations Only 717 Shapiro Wilk Test Statistic D.971 Shapiro Wilk GOF Test Only 718 5% Shapiro Wilk Critical Value D.803 Detected Data appear Lognormal at 5% Significance Level 719 Lilliefors Test Statistic D.172 Lilliefors GOF Test Lilliefors GOF Test Detected Data appear Lognormal at 5% Significance Level 720 5% Lilliefors Critical Value Detected Data appear Lognormal at 5% Significance Level 721 Detected Data appear Lognormal at 5% Significance Level 722 Lognormal ROS Statistics Using Imputed Non-Detects 723 Mean in Original Scale SD in Original Scale SD in Original Scale SD in Original Scale SD in Original Scale SD in Original Scale SD in Original Scale SD in Original Scale SD in Original Scale SD in Original Scale SD in Original Scale SD in Original SD in SD in Original SD in SD in Original SD in SD in Original SD in	n n<50) icance L icance L g Scale g Scale ap UCL	216.5 evel 3.665 1.039 110.8
Approximate Chi Square Value (9.53, α) 3.649 Adjusted Chi Square Value (9.51)	n n<50) icance L icance L g Scale g Scale ap UCL	216.5 evel 3.665 1.039 110.8
95% Gamma Approximate KM-UCL (use when n>=50) 165.5 95% Gamma Adjusted KM-UCL (use when noted that the part of the part	icance L icance L g Scale g Scale ap UCL	evel 3.665 1.039 110.8
Title	g Scale g Scale g Scale	3.665 1.039 110.8
Comparison	g Scale g Scale g Scale	3.665 1.039 110.8
Shapiro Wilk Test Statistic 0.971 Shapiro Wilk GOF Test	g Scale g Scale g Scale	3.665 1.039 110.8
Title	g Scale g Scale g Scale	3.665 1.039 110.8
Test Statistic	g Scale g Scale ap UCL	3.665 1.039 110.8
Total Tota	g Scale g Scale ap UCL	3.665 1.039 110.8
Detected Data appear Lognormal at 5% Significance Level 722 Lognormal ROS Statistics Using Imputed Non-Detects 723 Lognormal ROS Statistics Using Imputed Non-Detects 724 Mean in Original Scale 63.27 Mean in Log 725 SD in Original Scale 74.93 SD in Log 726 95% t UCL (assumes normality of ROS data) 113.5 95% Percentile Bootstrag 727 95% BCA Bootstrap UCL 137.3 95% Bootstrag 728 95% H-UCL (Log ROS) 267.2 729 Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution 731 KM Mean (logged) 3.675 KM Ge 732 KM SD (logged) 0.958 95% Critical H Value (K	g Scale ap UCL	1.039 110.8
Total	g Scale ap UCL	1.039 110.8
724 Mean in Original Scale 63.27 Mean in Log 725 SD in Original Scale 74.93 SD in Log 726 95% t UCL (assumes normality of ROS data) 113.5 95% Percentile Bootstra 727 95% BCA Bootstrap UCL 137.3 95% Bootstrap 728 95% H-UCL (Log ROS) 267.2 729 730 Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution 731 KM Mean (logged) 3.675 KM Ge 732 KM SD (logged) 0.958 95% Critical H Value (K	g Scale ap UCL	1.039 110.8
SD in Original Scale 74.93 SD in Log	g Scale ap UCL	1.039 110.8
726 95% t UCL (assumes normality of ROS data) 113.5 95% Percentile Bootstra 727 95% BCA Bootstrap UCL 137.3 95% Bootstrap 728 95% H-UCL (Log ROS) 267.2 729 730 Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution 731 KM Mean (logged) 3.675 KM Ge 732 KM SD (logged) 0.958 95% Critical H Value (K	ap UCL	110.8
726 95% t UCL (assumes normality of ROS data) 113.5 95% Percentile Bootstra 727 95% BCA Bootstrap UCL 137.3 95% Bootstra 728 95% H-UCL (Log ROS) 267.2 729 730 Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution 731 KM Mean (logged) 3.675 KM Ge 732 KM SD (logged) 0.958 95% Critical H Value (K		
728 95% H-UCL (Log ROS) 267.2 729 730 Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution KM Mean (logged) 3.675 KM Ge KM SD (logged) 0.958 95% Critical H Value (K	p t UCL	195.7
729 730 Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution 731 KM Mean (logged) 3.675 KM Ge 732 KM SD (logged) 0.958 95% Critical H Value (K		
730 Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution 731 KM Mean (logged) 3.675 KM Ge 732 KM SD (logged) 0.958 95% Critical H Value (K		
731 KM Mean (logged) 3.675 KM Ge 732 KM SD (logged) 0.958 95% Critical H Value (K		
732 KM SD (logged) 0.958 95% Critical H Value (K		
VM Standard Every of Many (Lagran) 0.200	o Mean	39.44
733 KM Standard Error of Mean (logged) 0.366 95% H-UCL (KI		3.323
	M -Log)	207.8
734 KM SD (logged) 0.958 95% Critical H Value (K	(M-Log)	3.323
735 KM Standard Error of Mean (logged) 0.366		
736		
737 DL/2 Statistics		
738 DL/2 Normal DL/2 Log-Transformed		
739 Mean in Original Scale 63.25 Mean in Lo		3.663
SD in Original Scale 74.94 SD in Lo		1.041
741 95% t UCL (Assumes normality) 113.4 95% H-St	tat UCL	268.9
DL/2 is not a recommended method, provided for comparisons and historical reasons		
743		
Nonparametric Distribution Free UCL Statistics		
Detected Data appear Gamma Distributed at 5% Significance Level		
746		
Suggested UCL to Use		040=
95% KM Bootstrap t UCL 193.1 Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but	ıt k<=1)	216.5
749	E 0/ ::=	
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95	5% UCL	
751 Recommendations are based upon data size, data distribution, and skewness.	(0000)	
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee	,	
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a	statistici	an.
754		
755 Vinyl Chloride		
756		

757	Α	В	С		D		E	F General	G Statistics	Н	I	,	J	K	工	L
757 758				Total N	umber of	Obse	rvations	8			Numb	er of Dis	stinct O	bservation	าร	7
					Num	ber of	Detects	7				Numb	ber of N	lon-Detec	ts	1
759 760				Nun	nber of D	istinct	Detects	6			Num			lon-Detec		1
					Mi	inimun	n Detect	4.5				Mir	nimum	Non-Dete	ct	10
761							n Detect	29				Max	ximum	Non-Dete	ct	10
762							Detects	90.12						lon-Detec		12.5%
763							Detects	16.23						SD Detect		9.493
764							Detects	21						CV Detect		0.585
765							Detects	-0.094						sis Detec		-1.974
766				M	ean of Lo			2.592				SD		ged Detec		0.723
767					can or E	oggcu	DCICCIS	2.002				00	or Logg	Jea Deice		0.725
768			Note:	Sample	eizo le c	mall <i>l</i>	(a.a. <1)	∩\ if data ar	e collected us	eina ISM ar	nroach vo	u should	l ueo			
769								•	SM (ITRC, 20							
770			-	-			_		shev UCL to	· ·	='		erest.			
771							•	•	nparametric		•	•				
772			Cheby	snev U	ICL can i	be cor	nputea u	Ising the No	nparametric	and All UCL	. Options of	Prouci	_ 5. 1			
773							NI		t on Data -t-	Onk						
774					mire \AE	, T,		0.87	t on Detects	Only	Ch! \	Will OOF	T*			
775					apiro Wilk				D.		Shapiro V			-: <i>t</i> :1		
776					piro Wilk			0.803	De	etected Data				nificance L	_evei	
777					Lilliefors			0.264				s GOF T				
778				5%	Lilliefors			0.304		etected Data		ormal at t	Sigr% S	nificance L	_evel	
779						etecte	ed Data a	appear Nom	nal at 5% Sig	Initicance L	evel					
780																
781			Kap	olan-Me	eier (KM)				ritical Values	and other						
782						K	M Mean	15.02			ŀ			ror of Mea		3.383
783							KM SD	8.839						(BCA) UC		20
784							l (t) UCL	21.43			95% KM	`		tstrap) UC		20.15
785							(z) UCL	20.58						strap t UC		21.48
786					% KM Ch			25.17						yshev UC		29.76
787				97.5°	% KM Ch	nebysł	nev UCL	36.14				99% KI	M Cheb	yshev UC	;L	48.68
788																
789								Tests on De	etected Obse		•					
790					A-D) Test	Statistic	0.629		F	Anderson-D	arling G	OF Tes	it		
791					5% A-D	Critic	al Value	0.713	Detected	d data appe				•	ance	Level
792					K-S	S Test	Statistic	0.311			Kolmogoro	v-Smirno	ov GOF			
793					5% K-S	Critic	al Value	0.314	Detected	d data appe	ar Gamma I	Distribute	ed at 5°	% Significa	ance	Level
794					Detecte	ed dat	a appeai	Gamma Di	stributed at 5	5% Significa	nce Level					
795																
796							Gamma	Statistics or	Detected Da	ata Only						
797						k ha	at (MLE)	2.717			I	k star (bi	as corr	ected MLE	Ξ)	1.648
798					Th	neta ha	at (MLE)	5.974			Theta	a star (bi	as corr	ected MLE	Ξ)	9.85
799						nu ha	at (MLE)	38.03				nu st	ar (bias	s corrected	d)	23.07
800					N	Лean (detects)	16.23								
801																
802						Gam	ma ROS	Statistics u	sing Imputed	Non-Detec	ts					
803			GROS	may n	ot be use				6 NDs with m			at multiple	e DLs			
804		GROS ma		-					s <1.0, espec	-				.g., <15-20	J)	
805			-						yield incorre						-	
806									en the sample							
		For as	amma dis	tributer	d detecte			-	y be comput			ution on	KM es	timates		
807		. 5. 90					/linimum	1	, compat		2.00110			Mea	an	15.19
808							laximum	29						Media		14.44
809						141	SD	9.271						C		0.61
810							טט	J.271								0.01

Thota hat IMLE 5.574		A B C D E	F	G	Н	I J K	L
25.58 13.13		k hat (MLE)	2.725			k star (bias corrected MLE)	1.786
Adjusted Level of Significance (8) 0.0195 Approximate Chi Square Value (28.58, 6) 15.21 Approximate Chi Square Value (28.58, 6) 15.21 Approximate Chi Square Value (28.58, 6) 15.21 S9% Gamma Approximate UCL (use when no-50) 24.97 S9% Gamma Adjusted UCL (use when no-50) 24.97 S9% Gamma Adjusted UCL (use when no-50) 24.97 S9% Gamma Adjusted UCL (use when no-50) 24.97 S9% Gamma Adjusted UCL (use when no-50) 24.97 S9% Gamma Adjusted UCL (use when no-50) 24.97 S9% Gamma Adjusted UCL (use when no-50) 24.97 S9% Gamma Adjusted UCL (use when no-50) 24.93 S9% Gamma Adjusted UCL (use when no-50) 24.93 S9% Gamma Adjusted UCL (use when no-50) 24.93 S9% Gamma Adjusted UCL (use when no-50) 24.93 S9% Gamma Adjusted UCL (use when no-50) 27.66 S9% Gamma Adjusted UCL (use when no-50) 24.93 S9% Gamma Adjusted UCL (use when no-50) 24.93 S9% Gamma Adjusted UCL (use when no-50) 24.93 S9% Gamma Adjusted Wid-UCL (use when no-50)						, ,	
Approximate Chi Square Value (28.88 o) 17.38		` /				nu star (blas correcteu)	20.30
Section Sect						Adjusted Chi Square Value (28.58. β)	15.21
					95% G	, , , , ,	
Estimates of Gamma Parameters using KM Estimates		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-			· · · · · · · · · · · · · · · · · · ·	
Mean (KM) 15.02 SD (KM) 8.839		Estimates of G	amma Para	meters using k	KM Estima	ites	
		Mean (KM)	15.02			SD (KM)	8.839
		Variance (KM)	78.13			SE of Mean (KM)	3.383
1922		k hat (KM)	2.886			k star (KM)	1.887
224 80% gamma percentile (KM) 22.64 90% gamma percentile (KM) 25.14 95% gamma percentile (KM) 25.14 95% gamma percentile (KM) 36.28 95% gamma percentile (KM) 51.14 95% gamma percentile (KM) 36.28 95% gamma percentile (KM) 51.14 95% gamma percentile (KM)		nu hat (KM)	46.18			nu star (KM)	30.2
25.5 95% gamma percentile (KM) 36.28 99% gamma percentile (KM) 51.14	823	theta hat (KM)	5.203			theta star (KM)	7.957
Second Gamma Kaplan-Meier (KM) Statistics	824	80% gamma percentile (KM)	22.64			90% gamma percentile (KM)	29.61
September Sep	825	95% gamma percentile (KM)	36.28			99% gamma percentile (KM)	51.14
Approximate Chi Square Value (30.20, a) 18.65 Adjusted Chi Square Value (30.20, β) 16.39	826						
	827		•	leier (KM) Stati	istics		
	828				50 / 0	, , , , ,	
Statistics using KM estimates Statistic Statistics	-	95% Gamma Approximate KM-UCL (use when n>=50)	24.32	9	5% Gamn	na Aajustea KM-UCL (use when n<50)	∠/.66
Shapiro Wilk Test Statistic 0.853 Shapiro Wilk GOF Test		Lognormal CO	E Toot on D	atastad Obasi	votiono O	nh.	
Second Second				Petected Obser	vauoris O		
Sade Lilliefors Test Statistic D.306 Lilliefors GOF Test		·		Detec	ted Data a	•	wel
Secondary Seco		·		Detec	ieu Data e	<u> </u>	· VCI
Section Detected Data appear Approximate Lognormal at 5% Significance Level				Dete	ected Data		el
Statistics Sta							
Radia Compormal ROS Statistics Using Imputed Non-Detects 15.09 Mean in Log Scale 2.513 8.00 Span 10.07 original Scale 9.361 Span Span 10.00 original Scale 9.361 Span 10.00 original Scale 9.361 Span 10.00 original Scale 9.361 Span 10.00 original Scale 9.361 Span 10.00 original Scale 9.361 Span 10.00 original Scale 9.361 Span 10.00 original Scale 9.361 Span 10.00 original Scale 9.361 Span 10.00 original Scale 9.361 Span 10.00 original Scale 9.361 Span 10.00 original Scale 9.361 Span 10.00 original Scale 10.00 original Scale 10.00 original Scale 10.00 original Scale 10.00 original Scale 10.00 original Scale 10.00 original Scale 14.83 Span		···	••				
Mean in Original Scale 15.09 Mean in Log Scale 2.513		Lognormal ROS	S Statistics	Using Imputed	Non-Dete	ects	
SD in Original Scale 9.361 SD in Log Scale 0.706		Mean in Original Scale	15.09			Mean in Log Scale	2.513
Seri		SD in Original Scale	9.361			SD in Log Scale	0.706
Math Math	841	95% t UCL (assumes normality of ROS data)	21.36			95% Percentile Bootstrap UCL	20.08
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution	842	95% BCA Bootstrap UCL	20.44			95% Bootstrap t UCL	21.7
845 Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution 846 KM Mean (logged) 2.499 KM Geo Mean 12.17 847 KM SD (logged) 0.678 95% Critical H Value (KM-Log) 2.69 848 KM Standard Error of Mean (logged) 0.262 95% H-UCL (KM -Log) 30.52 849 KM Standard Error of Mean (logged) 0.262 95% Critical H Value (KM-Log) 2.69 850 KM Standard Error of Mean (logged) 0.262 0.262	843	95% H-UCL (Log ROS)	32.93				
KM Mean (logged) 2.499 KM Geo Mean 12.17	844						
KM SD (logged) 0.678 95% Critical H Value (KM-Log) 2.69	845	-		Data and Assu	ming Logi		10.15
848 KM Standard Error of Mean (logged) 0.262 95% H-UCL (KM -Log) 30.52 849 KM SD (logged) 0.678 95% Critical H Value (KM-Log) 2.69 850 KM Standard Error of Mean (logged) 0.262	846	, ,					
KM SD (logged) 0.678 95% Critical H Value (KM-Log) 2.69	847	, ,				, ,	
Solid Standard Error of Mean (logged) 0.262		, 55 /				` "	
Solid		· ·				35 /0 CHILCAI FI VAIUE (NIVI-LOG)	2.09
852 DL/2 Statistics 853 DL/2 Normal DL/2 Log-Transformed 854 Mean in Original Scale 14.83 Mean in Log Scale 2.469 855 SD in Original Scale 9.644 SD in Log Scale 0.754 856 95% t UCL (Assumes normality) 21.28 95% H-Stat UCL 35.37 857 DL/2 is not a recommended method, provided for comparisons and historical reasons 858 Nonparametric Distribution Free UCL Statistics 860 Detected Data appear Normal Distributed at 5% Significance Level 861 Suggested UCL to Use 862 95% KM (t) UCL 21.43		Nin Standard Error of Mean (logged)	5.202				
S53 DL/2 Normal DL/2 Log-Transformed S54 Mean in Original Scale 14.83 Mean in Log Scale 2.469 S55 SD in Original Scale 9.644 SD in Log Scale 0.754 S56 95% t UCL (Assumes normality) 21.28 95% H-Stat UCL 35.37 S57 DL/2 is not a recommended method, provided for comparisons and historical reasons S58 Nonparametric Distribution Free UCL Statistics S60 Detected Data appear Normal Distributed at 5% Significance Level S61 Suggested UCL to Use S62 Suggested UCL to Use S63 95% KM (t) UCL 21.43 Solution			DL/2 S	Statistics			
Mean in Original Scale 14.83 Mean in Log Scale 2.469		DL/2 Normal				DL/2 Log-Transformed	
SD in Original Scale 9.644 SD in Log Scale 0.754 S56			14.83			<u> </u>	2.469
95% t UCL (Assumes normality) 21.28 95% H-Stat UCL 35.37 DL/2 is not a recommended method, provided for comparisons and historical reasons Nonparametric Distribution Free UCL Statistics Detected Data appear Normal Distributed at 5% Significance Level Suggested UCL to Use 95% H-Stat UCL 35.37 Suggested UCL Statistics			9.644				0.754
B57 DL/2 is not a recommended method, provided for comparisons and historical reasons 858 859 Nonparametric Distribution Free UCL Statistics 860 Detected Data appear Normal Distributed at 5% Significance Level 861 862 Suggested UCL to Use 863 95% KM (t) UCL 21.43		95% t UCL (Assumes normality)	21.28			95% H-Stat UCL	35.37
Nonparametric Distribution Free UCL Statistics Nonparametric Distribution Free UCL Statistics Detected Data appear Normal Distributed at 5% Significance Level Suggested UCL to Use 95% KM (t) UCL 21.43		DL/2 is not a recommended me	ethod, provi	ded for compa	risons and	d historical reasons	
Nonparametric Distribution Free UCL Statistics Detected Data appear Normal Distributed at 5% Significance Level Suggested UCL to Use 95% KM (t) UCL 21.43							
861 862 Suggested UCL to Use 863 95% KM (t) UCL 21.43		Nonparame	tric Distribu	tion Free UCL	Statistics		
862 Suggested UCL to Use 863 95% KM (t) UCL 21.43	860	Detected Data appea	r Normal Di	stributed at 5%	Significa	nce Level	
863 95% KM (t) UCL 21.43	861						
803	862			UCL to Use			
864	863	95% KM (t) UCL	21.43				
	864						

	A B C D E	F ICL are pro	G H I J J K Noted to help the user to select the most appropriate 95% UCL.	L
865			a size, data distribution, and skewness.	
866			ulation studies summarized in Singh, Maichle, and Lee (2006).	
867	•		s; for additional insight the user may want to consult a statisticia	n.
868			s, or additional morgin and about may make to constant a stational	
869	Xylenes			
870 871	. 4			
872		General S	Statistics	
873	Total Number of Observations	8	Number of Distinct Observations	6
874	Number of Detects	5	Number of Non-Detects	3
875	Number of Distinct Detects	5	Number of Distinct Non-Detects	1
876	Minimum Detect	15	Minimum Non-Detect	30
877	Maximum Detect	84	Maximum Non-Detect	30
878	Variance Detects	859	Percent Non-Detects	37.5%
879	Mean Detects	32	SD Detects	29.31
880	Median Detects	19	CV Detects	0.916
881	Skewness Detects	2.148	Kurtosis Detects	4.666
882	Mean of Logged Detects	3.227	SD of Logged Detects	0.699
883		I		
884	Note: Sample size is small (e.g., <10)), if data are	collected using ISM approach, you should use	
885	guidance provided in ITRC Tech Reg	Guide on IS	M (ITRC, 2012) to compute statistics of interest.	
886	For example, you may want to	use Chebys	shev UCL to estimate EPC (ITRC, 2012).	
887	Chebyshev UCL can be computed u	sing the Non	parametric and All UCL Options of ProUCL 5.1	
888				
889	Norm	al GOF Test	on Detects Only	
890	Shapiro Wilk Test Statistic	0.665	Shapiro Wilk GOF Test	
891	5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level	
892	Lilliefors Test Statistic	0.394	Lilliefors GOF Test	
893	5% Lilliefors Critical Value	0.343	Detected Data Not Normal at 5% Significance Level	
894	Detected Data	a Not Normal	at 5% Significance Level	
895	Vonlan Maior (VM) Chatistics using	a Nama al Om	itiaal Valuas and athau Nannananatria LIOLa	
896	Kapiari-Meler (KM) Statistics usin KM Mean	27.13	itical Values and other Nonparametric UCLs KM Standard Error of Mean	8.692
897	KM SD	21.78	95% KM (BCA) UCL	37.88
898	95% KM (t) UCL	43.59	95% KM (Percentile Bootstrap) UCL	42.13
899	95% KM (z) UCL	41.42	95% KM Bootstrap t UCL	134.9
900	90% KM Chebyshev UCL	53.2	95% KM Chebyshev UCL	65.01
901	97.5% KM Chebyshev UCL	81.41	99% KM Chebyshev UCL	113.6
902	one of the original delication and the original delication	2	SON THE CHOOSE OF	
903 904	Gamma GOF	Tests on Det	tected Observations Only	
904	A-D Test Statistic	0.763	Anderson-Darling GOF Test	
905	5% A-D Critical Value	0.684	Detected Data Not Gamma Distributed at 5% Significance	Level
907	K-S Test Statistic	0.351	Kolmogorov-Smimov GOF	
908	5% K-S Critical Value	0.36	Detected data appear Gamma Distributed at 5% Significance	e Level
909	Detected data follow App	or. Gamma D	sistribution at 5% Significance Level	
910				
911	Gamma	Statistics on	Detected Data Only	
912	k hat (MLE)	2.248	k star (bias corrected MLE)	1.032
913	Theta hat (MLE)	14.24	Theta star (bias corrected MLE)	31
914	nu hat (MLE)	22.48	nu star (bias corrected)	10.32
915	Mean (detects)	32		
916				
917	Gamma ROS	Statistics us	ing Imputed Non-Detects	
918	GROS may not be used when data se	et has > 50%	NDs with many tied observations at multiple DLs	

919	A B C D E GROS may not be used when kstar of detects is a	F small such as	G H I J K s <1.0, especially when the sample size is small (e.g., <15-20)	L
920	For such situations, GROS	method may	yield incorrect values of UCLs and BTVs	
921	This is especi	ally true whe	en the sample size is small.	
922	For gamma distributed detected data, BTVs a	ind UCLs ma	by be computed using gamma distribution on KM estimates	
923	Minimum	7.768	Mean	27.75
924	Maximum	84	Median	19.4
925	SD	24	CV	0.865
926	k hat (MLE)	2.285	k star (bias corrected MLE)	1.512
927	Theta hat (MLE)		Theta star (bias corrected MLE)	18.36
928	nu hat (MLE)	36.56	nu star (bias corrected)	24.18
929	Adjusted Level of Significance (β)			10.07
930	Approximate Chi Square Value (24.18, α)		Adjusted Chi Square Value (24.18, β)	12.07
931	95% Gamma Approximate UCL (use when n>=50)	47.98	95% Gamma Adjusted UCL (use when n<50)	55.59
932	Estimates of C	`amma Baraı	meters using KM Estimates	
933	Mean (KM)		SD (KM)	21.78
934	Variance (KM)		SE of Mean (KM)	8.692
935	k hat (KM)		k star (KM)	1.053
936	nu hat (KM)		nu star (KM)	16.84
937	theta hat (KM)		theta star (KM)	25.77
938 939	80% gamma percentile (KM)		90% gamma percentile (KM)	61.67
939	95% gamma percentile (KM)		- , , , ,	121.7
941			3 1 ()	
942	Gamm	na Kaplan-Me	eier (KM) Statistics	
943	Approximate Chi Square Value (16.84, α)	8.561	Adjusted Chi Square Value (16.84, β)	7.119
944	95% Gamma Approximate KM-UCL (use when n>=50)	53.37	95% Gamma Adjusted KM-UCL (use when n<50)	64.18
945				
946	Lognormal GC	F Test on Do	etected Observations Only	
947	Shapiro Wilk Test Statistic	0.785	Shapiro Wilk GOF Test	
948	5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Lev	el
949	Lilliefors Test Statistic	0.305	Lilliefors GOF Test	
950	5% Lilliefors Critical Value		Detected Data appear Lognormal at 5% Significance Lev	el
951	Detected Data ap	pear Lognor	rmal at 5% Significance Level	
952				
953			Using Imputed Non-Detects	
954	Mean in Original Scale		Mean in Log Scale	3.139
955	SD in Original Scale		SD in Log Scale	0.585
956	95% t UCL (assumes normality of ROS data) 95% BCA Bootstrap UCL	43.5	95% Percentile Bootstrap UCL	42.79
957	95% BCA Bootstrap UCL 95% H-UCL (Log ROS)		95% Bootstrap t UCL	87.09
958	90 % N-UCL (LUY ROS)	47.00		
959	Statistics using KM actimates	on Lonned F	Data and Assuming Lognormal Distribution	
960	KM Mean (logged)		KM Geo Mean	22.52
961	KM SD (logged)		95% Critical H Value (KM-Log)	2.402
962	KM Standard Error of Mean (logged)		95% H-UCL (KM -Log)	41.8
963	KM SD (logged)		95% Critical H Value (KM-Log)	2.402
964 965	KM Standard Error of Mean (logged)		233	-
966	(33 /			
967		DL/2 St	tatistics	
968	DL/2 Normal		DL/2 Log-Transformed	
969	Mean in Original Scale	25.63	Mean in Log Scale	3.032
970	SD in Original Scale	23.84	SD in Log Scale	0.593
971	95% t UCL (Assumes normality)	41.59	95% H-Stat UCL	43.49
972	DL/2 is not a recommended m	ethod, provid	ded for comparisons and historical reasons	
J				

	A B C D E	F	G H I J K	L
973	Namasana	atula Diatulhusia	Trac LICI Chabiatica	
974	-		on Free UCL Statistics na Distributed at 5% Significance Level	
975	Detected Data appeal Applo	Ailliale Gailli	la Distributed at 5 % Significance Level	
976		Suggested U	Cl. to Use	
977	95% KM Adjusted Gamma UCL	64.18	95% GROS Adjusted Gamma UCL	55.59
978 979	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
980	When a data set follows an approx	imate (e.g., no	rmal) distribution passing one of the GOF test	
981	When applicable, it is suggested to use a UCL ba	ased upon a di	istribution (e.g., gamma) passing both GOF tests in ProUCL	
982		<u> </u>		
983	Note: Suggestions regarding the selection of a 95%	UCL are prov	rided to help the user to select the most appropriate 95% UCL.	
984	Recommendations are bas	sed upon data	size, data distribution, and skewness.	
985	These recommendations are based upon the resu	Its of the simu	lation studies summarized in Singh, Maichle, and Lee (2006).	
986	However, simulations results will not cover all Real W	orld data sets	; for additional insight the user may want to consult a statisticiar	۱.
987				
988				
989	Methylphenol, 3- and 4-			
990				
991		General St		
992	Total Number of Observations	8	Number of Distinct Observations	8
993			Number of Missing Observations	0
994	Minimum	17	Mean	60
995	Maximum		Median	45.5
996	SD Coefficient of Veriction	45.64	Std. Error of Mean	16.14
997	Coefficient of Variation	0.761	Skewness	1.447
998	Note: Sample size is small (e.g. <10	n) if data are	collected using ISM approach, you should use	
999	guidence provided in ITDC Teeb Dea	•	I (ITRC, 2012) to compute statistics of interest.	
1000			nev UCL to estimate EPC (ITRC, 2012).	
1001	Chahushau IICI aan ba aamuutad u	-	parametric and All UCL Options of ProUCL 5.1	
1002 1003				
			·	
1004		Normal GO		
1004	Shapiro Wilk Test Statistic	Normal GC 0.802		
1005	Shapiro Wilk Test Statistic		DF Test	
1005 1006	Shapiro Wilk Test Statistic	0.802	DF Test Shapiro Wilk GOF Test	
1005	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic	0.802 0.818	OF Test Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level	
1005 1006 1007	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value	0.802 0.818 0.354 0.283	OF Test Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test	
1005 1006 1007 1008	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not	0.802 0.818 0.354 0.283	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level	
1005 1006 1007 1008 1009	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not	0.802 0.818 0.354 0.283	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level al Distribution	
1005 1006 1007 1008 1009 1010	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL	0.802 0.818 0.354 0.283 Normal at 5% suming Norma	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level al Distribution 95% UCLs (Adjusted for Skewness)	
1005 1006 1007 1008 1009 1010 1011	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL	0.802 0.818 0.354 0.283	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995)	95.37
1005 1006 1007 1008 1009 1010 1011 1012	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL	0.802 0.818 0.354 0.283 Normal at 5% suming Norma	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level al Distribution 95% UCLs (Adjusted for Skewness)	95.37 91.95
1005 1006 1007 1008 1009 1010 1011 1012 1013	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL	0.802 0.818 0.354 0.283 Normal at 5% suming Normal	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Significance Level al Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978)	
1005 1006 1007 1008 1009 1010 1011 1012 1013 1014	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL	0.802 0.818 0.354 0.283 Normal at 5% suming Normal 90.57	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978)	
1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic	0.802 0.818 0.354 0.283 Normal at 5% suming Normal 90.57	DF Test Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Significance Level Al Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978) OF Test Anderson-Darling Gamma GOF Test	91.95
1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value	0.802 0.818 0.354 0.283 Normal at 5% suming Normal 90.57 Gamma Go 0.502 0.723	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978) OF Test Anderson-Darling Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance	91.95
1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic	0.802 0.818 0.354 0.283 Normal at 5% suming Normal 90.57 Gamma Good 0.502 0.723 0.295	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978) OF Test Anderson-Darling Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance Kolmogorov-Smirnov Gamma GOF Test	91.95 E Level
1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value	0.802 0.818 0.354 0.283 Normal at 5% suming Normal 90.57 Gamma Ge 0.502 0.723 0.295 0.297	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Significance Level Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978) OF Test Anderson-Darling Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance Kolmogorov-Smirnov Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance	91.95 E Level
1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value	0.802 0.818 0.354 0.283 Normal at 5% suming Normal 90.57 Gamma Ge 0.502 0.723 0.295 0.297	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978) OF Test Anderson-Darling Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance Kolmogorov-Smirnov Gamma GOF Test	91.95 E Level
1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value	0.802 0.818 0.354 0.283 Normal at 5% suming Normal 90.57 Gamma Good 0.502 0.723 0.295 0.297 r Gamma District	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978) OF Test Anderson-Darling Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance Kolmogorov-Smirnov Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance ibuted at 5% Significance Level	91.95 E Level
1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value Detected data appear	0.802 0.818 0.354 0.283 Normal at 5% suming Norma 90.57 Gamma G 0.502 0.723 0.295 0.297 Gamma Distr	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978) OF Test Anderson-Darling Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance Kolmogorov-Smirnov Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance ibuted at 5% Significance Level	91.95
1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value Detected data appear	0.802 0.818 0.354 0.283 Normal at 5% suming Norma 90.57 Gamma Ge 0.502 0.723 0.295 0.297 r Gamma Distr	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978) OF Test Anderson-Darling Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance Kolmogorov-Smirnov Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance ributed at 5% Significance Level	91.95 e Level e Level
1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data Not As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value Detected data appear k hat (MLE) Theta hat (MLE)	0.802 0.818 0.354 0.283 Normal at 5% suming Norma 90.57 Gamma G 0.502 0.723 0.295 0.297 Gamma Distr	Shapiro Wilk GOF Test Data Not Normal at 5% Significance Level Lilliefors GOF Test Data Not Normal at 5% Significance Level Significance Level Distribution 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL (Chen-1995) 95% Modified-t UCL (Johnson-1978) OF Test Anderson-Darling Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance Kolmogorov-Smirnov Gamma GOF Test Detected data appear Gamma Distributed at 5% Significance ibuted at 5% Significance Level	91.95

1007	Α		В		(<u>С</u> М	L ILE M	D ⁄lean	(bias	E corrected)	F 60	(ì		Н		- 1		MLE	J Sd (bi	ias		cted)	L 47.6
1027									(5.00	3033.34	7						Apr	oroxim			Square				14.94
1028						Adius	sted	Level	l of Si	gnificance	е	0.0195									d Chi				12.95
1029						,-				9										,					
1030										A:	ssur	ming Gam	nma Dis	stribut	tion										
1031		959	% Appr	oxima	ate C	amm	na U(CL (us	se wh	en n>=50		102.1		J		95% A	dius	ted Ga	amm	na U(CL (us	e w	/hen i	n<50)	117.8
1032			, o , ippi	Ozume	210 0	<i></i>		JL (40		01111	,					00707	lajao	iou ac			32 (GO				
1033												_ognorma	I GOF	Test											
1034						Ş	Shan	iro Wi	ilk Te	st Statistic		0.937				Sha	aniro	Wilk	Logi	norm	al GO	FT	est		
1035										tical Value		0.818			Dat		-				6 Signi			Level	
1036										st Statistic		0.251									GOF				
1037						5				tical Value		0.283			Dat						6 Signi			l evel	
1038												ognormal	at 5% 5	Sianifi				giioii	· · · ·	ut o /	o Olgili				
1039										ata appoc	4. L	ognomia	u. 070 (J.g	louin	50 201	<u> </u>								
1040												Lognorma	al Static	tice											
1041							Min	mum	of Lo	gged Data		2.833	ii Otalis	uco							/lean o	of Io	naad	Data	3.873
1042										gged Data		5.011												l Data	0.697
1043						<u>'</u>	MIGAL	mulli	01 LU	ggou Dale	u	J.U 1 1									30 0	,, 10	yy c u	Data	U.UJ/
1044										٨٠٠	el im	ing Logno	ormal D	ietrih.	ution										
1045									01	AS: 5% H-UCL		125.8	Jillai D	ทอนามเ	ulion			00	10/ C	^hoh	vehov	/ / / /	\/I I E\	LICI	103.6
1046						QE0/	Cha	hyob-		VUE) UCI		123.8									yshev yshev				151.7
1047																		97.5)% C	Juen	ysnev	(IVI	VUE)) UCL	151.7
1048						99%	Cne	bysne	ev (IVI	VUE) UCI		206.6													
1049												- Distribut	F	- 110		!!									
1050												c Distribut							1						
1051							Da	ta app	pear t	o follow a	DIS	scernible [Distribu	ition a	at 5%	Signi	tican	ce Le	vei						
1052																									
1053										-		netric Dist	tributio	n Free	e UC	Ls									
1054										CLT UCI		86.54									95% J				90.57
1055										strap UCI		85.31									5% Bo				163.6
1056										strap UCI		299.3						95	% F	erce	ntile B	3001	strap	UCL	86
1057										strap UCI		91.13													
1058							-		•	ı, Sd) UCI		108.4								-	hev(M				130.3
1059					97.5	5% Cł	neby	shev((Mear	ı, Sd) UCI	L ·	160.8						99%	Ch	ebys	hev(M	lear	1, Sd)) UCL	220.6
1060																									
1061											Sı	uggested	UCL to	Use											
1062						95	ъ% А	djuste	ed Ga	mma UCl	L .	117.8													
1063																									
1064		Not	te: Sug	gestic	ons ı	regard	ding	the se	electio	on of a 95°	% U	JCL are pr	ovided	to hel	lp the	user	to se	lect th	e m	ost a	ppropi	riat	e 95%	% UCL	
1065						F	Reco	mme	endatio	ons are ba	ased	d upon dat	ta size,	data	distri	bution	, and	skew	nes	S.					
1066												of the sim							-				-	-	
1067		Howe	ever, si	mulati	ions	resul	ts wi	ll not	cover	all Real \	Worl	ld data se	ts; for a	additio	onal i	nsight	the ι	iser m	ay v	want	to con	sul	t a sta	atisticia	an.
1068																									
1069																									
1070	Chloride)																							
1071																									
1072												General	Statisti	CS											
1073						Total	l Nur	nber (of Ob	servations	s	8						Num	nber	of D	istinct	Ob	serva	ations	8
1074																		Num	ber	of M	issing	Ob	serva	ations	0
1075										Minimun	n 54	4000												Mean	134875
1076										Maximum	n 29	90000											М	edian	115000
1077										SE	76	6740									Std.	Err	or of	Mean	27132
1078							С	oeffic	ient o	f Variation	n	0.569											Skev	vness	1.336
1079													1												
1080				N	lote:	: Sam	ple s	size is	s sma	ll (e.g., <	10),	if data are	e collec	ted u	sing	ISM a	ppro	ach, y	ou s	shou	ld use				

1081	A B C D E guidance provided in ITRC Tech Reg	F Guide on IS	G H I J K M (ITRC, 2012) to compute statistics of interest.	L
1082	For example, you may want to	o use Cheby	shev UCL to estimate EPC (ITRC, 2012).	
1083	Chebyshev UCL can be computed u	using the Nor	nparametric and All UCL Options of ProUCL 5.1	
1084				
1085		Normal G		
1086			Shapiro Wilk GOF Test	
1087	5% Shapiro Wilk Critical Value		Data appear Normal at 5% Significance Level	
1088			Lilliefors GOF Test	
1089	5% Lilliefors Critical Value		Data appear Normal at 5% Significance Level	
1090	Data appe	ar Normal at	5% Significance Level	
1091	A-0	aumina Nam	nal Distribution	
1092	0E9/ Normal LICI	suming Nom	nal Distribution 95% UCLs (Adjusted for Skewness)	
1093	95% Student's-t UCL	186278	95% Adjusted-CLT UCL (Chen-1995)	103100
1094		180278	95% Modified-t UCL (Johnson-1978)	
1095			3370 INIOGINICA-E OGE (GOTINSON-1370)	100414
1096		Gamma (GOF Test	
1097	A-D Test Statistic		Anderson-Darling Gamma GOF Test	
1098 1099	5% A-D Critical Value		Detected data appear Gamma Distributed at 5% Significance	ce Level
1100	V.C. Toot Ctatiotic		Kolmogorov-Smirnov Gamma GOF Test	
1101	5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance	ce Level
1102	Detected data appear	r Gamma Dis	stributed at 5% Significance Level	
1103				
1104		Gamma	Statistics	
1105	k hat (MLE)	4.065	k star (bias corrected MLE)	2.624
1106	Thata hat (MLF)	33182	Theta star (bias corrected MLE)	51405
1107	nu hat (MLE)	65.04	nu star (bias corrected)	41.98
1108	MLE Mean (bias corrected)	134875	MLE Sd (bias corrected)	83266
1109			Approximate Chi Square Value (0.05)	28.13
1110	Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	25.29
1111				
1112		-	ma Distribution	
1113	95% Approximate Gamma UCL (use when n>=50))	201298	95% Adjusted Gamma UCL (use when n<50)	223849
1114				
1115		Lognormal		
1116			Shapiro Wilk Lognormal GOF Test	
1117	5% Shapiro Wilk Critical Value		Data appear Lognormal at 5% Significance Level	
1118	E9/ Lilliofore Critical Value		Lilliefors Lognormal GOF Test Data appear Lognormal at 5% Significance Level	
1119	Data annos		at 5% Significance Level	
1120	Data appear		2. 0 % Significance Level	
1121		Lognormal	I Statistics	
1122	Minimum of Logged Data	-	Mean of logged Data	11.68
1123	Maximum of Logged Data		SD of logged Data	0.534
1124 1125			32 3. 18ggad Bala	'
1126	٨٥٥٠	uming Logno	rmal Distribution	
1127	95% H-UCL		90% Chebyshev (MVUE) UCL	210977
1128	95% Chebyshev (MVUE) UCL	245760	97.5% Chebyshev (MVUE) UCL	
1129	99% Chebyshev (MVUE) UCL		, ,	
1130				
1131		etric Distribut	ion Free UCL Statistics	
1132	Data appear to follow a	Discernible [Distribution at 5% Significance Level	
1133				
1134	Nonna	rametric Dist	ribution Free UCLs	

	A B C D E 95% CLT UCL	F 170502	G	Н	I	J 95% I	K ackknife UCL	L 186278				
1135	95% Standard Bootstrap UCL						otstrap-t UCL					
1136	95% Hall's Bootstrap UCL				95% F		ootstrap UCL					
1137	95% BCA Bootstrap UCL				00701	Crooriano D	00:0:: ap 002	170200				
1138	90% Chebyshev(Mean, Sd) UCL				95% Ch	ebvshev(Me	ean, Sd) UCL	253139				
1139	97.5% Chebyshev(Mean, Sd) UCL					• •	ean, Sd) UCL					
1140 1141						,	, ,					
1142		Suggested	UCL to Use									
1143	95% Student's-t UCL	186278										
1144												
1145	Note: Suggestions regarding the selection of a 95%	UCL are pro	rovided to help th	ne user to s	select the m	nost appropr	iate 95% UCI					
1146	Recommendations are bas	sed upon dat	ta size, data dist	tribution, ar	nd skewnes	S.						
1147	These recommendations are based upon the resu						. ,					
1148	However, simulations results will not cover all Real W	orld data se	ets; for additional	l insight the	e user may	want to cons	sult a statistic	ian.				
1149												
1150												
1151	Total Dissolved Solids											
1152		0	0									
1153	Total Number of Observations		Statistics		Observations	0						
1154		8				0						
1155	Minimum	1300000			Observations	2150000						
1156	Maximum							2250000				
1157		625643				Std F						
اعتجما	65	0200.0				Old. E						
1158	Coefficient of Variation	0.291		Std. Error of M								
1159	Coefficient of Variation	0.291					Skewness	-0.252				
1159 1160	Coefficient of Variation Note: Sample size is small (e.g., <10		e collected using	g ISM appi	roach, you	should use	Skewness	-0.252				
1159 1160 1161		O), if data are			-			-0.252				
1159 1160 1161 1162	Note: Sample size is small (e.g., <10	0), if data are Guide on IS	SM (ITRC, 2012) to compu	ıte statistics	s of interest.		-0.252				
1159 1160 1161	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to	0), if data are Guide on IS o use Cheby	SM (ITRC, 2012) shev UCL to es) to compu stimate EP	ute statistics C (ITRC, 20	s of interest. 012).		-0.252				
1159 1160 1161 1162 1163	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to	0), if data are Guide on IS o use Cheby	SM (ITRC, 2012) shev UCL to es) to compu stimate EP	ute statistics C (ITRC, 20	s of interest. 012).		-0.252				
1159 1160 1161 1162 1163 1164	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to	O), if data are Guide on IS o use Cheby Ising the Nor Normal C	SM (ITRC, 2012) shev UCL to es	to compustimate EPG	ute statistics C (ITRC, 20 Options of F	s of interest. 012). ProUCL 5.1	•	-0.252				
1159 1160 1161 1162 1163 1164 1165	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u	O), if data are Guide on IS o use Cheby Ising the Nor Normal C	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test	to compusitimate EP	ute statistics C (ITRC, 20 Options of F	s of interest. 012). ProUCL 5.1 Ik GOF Test		-0.252				
1159 1160 1161 1162 1163 1164 1165 1166	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value	O), if data are Guide on IS o use Cheby sing the Nor Normal C 0.917 0.818	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test	to compusitimate EP	ute statistics C (ITRC, 20 Dptions of F	s of interest. 012). ProUCL 5.1 Ik GOF Test t 5% Signific		-0.252				
1159 1160 1161 1162 1163 1164 1165 1166 1167	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic	O), if data are Guide on IS o use Cheby using the Nor Normal C 0.917 0.818 0.155	SM (ITRC, 2012) shev UCL to es nparametric and GOF Test	to compusitimate EPG	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors	s of interest. 112). ProUCL 5.1 Ik GOF Test t 5% Signific	t cance Level	-0.252				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value	O), if data are Guide on IS o use Cheby Ising the Nor Normal C 0.917 0.818 0.155 0.283	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test	to compusitimate EPG d All UCL C	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors	s of interest. 012). ProUCL 5.1 Ik GOF Test t 5% Signific	t cance Level	-0.252				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value	O), if data are Guide on IS o use Cheby Ising the Nor Normal C 0.917 0.818 0.155 0.283	SM (ITRC, 2012) shev UCL to es nparametric and GOF Test	to compusitimate EPG d All UCL C	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors	s of interest. 112). ProUCL 5.1 Ik GOF Test t 5% Signific	t cance Level	-0.252				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appear	O), if data are Guide on IS o use Cheby sing the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [[[t 5% Significand	to compusitimate EPG d All UCL C	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors	s of interest. 112). ProUCL 5.1 Ik GOF Test t 5% Signific	t cance Level	-0.252				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appear	O), if data are Guide on IS o use Cheby sing the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test	to compusitimate EPG d All UCL C	te statistics C (ITRC, 20 Options of F Shapiro Wil ar Normal at Lilliefors Ar Normal at	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific	t cance Level	-0.252				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appea	O), if data are Guide on IS o use Cheby sing the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [[[t 5% Significand	to compusitimate EPG All UCL Compusition of the Com	te statistics C (ITRC, 20 Dptions of F Shapiro Wil ar Normal at Lilliefors ar Normal at	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific	t cance Level					
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1170 1171 1172 1173 1174 1175	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appea	O), if data are Guide on IS o use Cheby sing the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [[[t 5% Significand	to compusitimate EPG d All UCL C	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors of ar Normal at	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific	t cance Level cance Level	2492780				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174 1175	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appea	O), if data are Guide on IS o use Cheby sing the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [[[t 5% Significand	to compusitimate EPG d All UCL C	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors of ar Normal at	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific	t cance Level cance Level	2492780				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174 1175 1176	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appea	O), if data are Guide on IS o use Cheby sing the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at suming Norm	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [[[t 5% Significand	to compusitimate EPG d All UCL C	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors of ar Normal at	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific	t cance Level cance Level	2492780				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174 1175 1176	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appea	O), if data are Guide on IS o use Cheby sing the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at suming Norm	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [[t 5% Significand mal Distribution	to compusitimate EPG d All UCL C	Shapiro Will ar Normal at Lilliefors ar Normal at JCLs (Adjuste 95% Modifie	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific	t cance Level cance Level (Chen-1995)	2492780				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1170 1171 1172 1173 1174 1175 1176 1177	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appear As 95% Normal UCL	O), if data are Guide on IS o use Cheby Ising the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at suming Norr 2569077	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [[t 5% Significand mal Distribution GOF Test	Data appearable Level 95% L 94 Anders	te statistics C (ITRC, 20 Dptions of F Shapiro Wil ar Normal at Lilliefors of the control of th	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific sted for Ske ed-CLT UCL ed-t UCL (Jo	t cance Level cance Level (Chen-1995)	2492780 2565792				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174 1175 1176 1177	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appear	O), if data are Guide on IS o use Cheby Ising the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at suming Norr 2569077 Gamma C 0.38	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [[t 5% Significand mal Distribution GOF Test	Data appearable Level 95% L 94 Anders ata appearable appearabl	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors of ar Normal at JCLs (Adjuste 5% Adjuste 95% Modifie	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific sted for Ske ed-CLT UCL ed-t UCL (Jo	t cance Level cance Level (Chen-1995) ohnson-1978) OF Test 5% Significar	2492780 2565792				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1180	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appear As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value	O), if data are Guide on IS o use Cheby Ising the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at suming Norr 2569077 Gamma C 0.38 0.715 0.187 0.294	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [It 5% Significance mal Distribution GOF Test Detected da Detected da	Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors of ar Normal at JCLs (Adjuster 95% Modifier con-Darling Gamma Di prov-Smirno Gamma Di	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific sted for Ske ed-CLT UCL ed-t UCL (Jo Gamma GC stributed at a v Gamma G	t cance Level cance Level (Chen-1995) ohnson-1978) OF Test 5% Significar	2492780 2565792				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1180	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appea As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic	O), if data are Guide on IS o use Cheby Ising the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at suming Norr 2569077 Gamma C 0.38 0.715 0.187 0.294	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [It 5% Significance mal Distribution GOF Test Detected da Detected da	Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors of ar Normal at JCLs (Adjuster 95% Modifier con-Darling Gamma Di prov-Smirno Gamma Di	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific sted for Ske ed-CLT UCL ed-t UCL (Jo Gamma GC stributed at a v Gamma G	t cance Level cance Level (Chen-1995) chnson-1978) OF Test 5% Significant COF Test	2492780 2565792				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1180 1181	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appear As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value	O), if data are Guide on IS o use Cheby sing the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at suming Norr 2569077 Gamma C 0.38 0.715 0.187 0.294 Gamma Dis	SM (ITRC, 2012) /shev UCL to es nparametric and GOF Test [Interpolation of the comparati	Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors of ar Normal at JCLs (Adjuster 95% Modifier con-Darling Gamma Di prov-Smirno Gamma Di	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific sted for Ske ed-CLT UCL ed-t UCL (Jo Gamma GC stributed at a v Gamma G	t cance Level cance Level (Chen-1995) chnson-1978) OF Test 5% Significant COF Test	2492780 2565792				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1180 1181 1182	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appear As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value Detected data appear	O), if data are Guide on IS o use Cheby Ising the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at suming Norr 2569077 Gamma C 0.38 0.715 0.187 0.294 Gamma Dis	SM (ITRC, 2012) yshev UCL to es nparametric and GOF Test [It 5% Significance mal Distribution GOF Test Detected da Detected da	Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors of ar Normal at JCLs (Adjuste 5% Adjuste 95% Modifier Gamma Di prov-Smirno Gamma Di ce Level	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific sted for Ske ed-CLT UCL ed-t UCL (Jo Gamma GC stributed at a v Gamma G stributed at a	cance Level cance Level cance Level (Chen-1995) chnson-1978) PF Test 5% Significant GOF Test 5% Significant	2492780 2565792 ace Level				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1180 1181 1182 1183	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appear As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value Detected data appear	O), if data are Guide on IS to use Cheby sing the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at suming Norr 2569077 Gamma C 0.38 0.715 0.187 0.294 Gamma Dis Gamma 1	SM (ITRC, 2012) /shev UCL to es nparametric and GOF Test [Interpolation of the comparati	Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors ar Normal at JCLs (Adjuste 95% Adjuste 95% Modifie con-Darling Gamma Di prov-Smirno Gamma Di ce Level	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific sted for Ske ed-CLT UCL ed-t UCL (Jo Stributed at a v Gamma GO stributed at a stributed at a stributed at a stributed at a	t cance Level cance Level cance Level cance Level cance Level cance Level cance Level cance Level cance Level cance Level cance Level cance Level cance Level cance Level cance Level cance and the cancer Level canc	2492780 2565792 sice Level				
1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1180 1181 1182 1183 1184 1185	Note: Sample size is small (e.g., <10 guidance provided in ITRC Tech Reg For example, you may want to Chebyshev UCL can be computed u Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Data appear As 95% Normal UCL 95% Student's-t UCL A-D Test Statistic 5% A-D Critical Value K-S Test Statistic 5% K-S Critical Value Detected data appear k hat (MLE) Theta hat (MLE)	O), if data are Guide on IS to use Cheby sing the Nor Normal C 0.917 0.818 0.155 0.283 ar Normal at suming Norr 2569077 Gamma C 0.38 0.715 0.187 0.294 Gamma Dis Gamma 1	SM (ITRC, 2012) /shev UCL to es nparametric and GOF Test [Interpolation of the comparati	Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear Data appear	te statistics C (ITRC, 20 Dptions of F Shapiro Will ar Normal at Lilliefors ar Normal at JCLs (Adjuste 95% Adjuste 95% Modifie con-Darling Gamma Di prov-Smirno Gamma Di ce Level	s of interest. D12). ProUCL 5.1 Ik GOF Test t 5% Signific GOF Test t 5% Signific sted for Ske ed-CLT UCL ed-t UCL (Jo Gamma GC stributed at a v Gamma G stributed at a stributed at a stributed at a stributed at a stributed at a	cance Level cance Level cance Level (Chen-1995) chnson-1978) PF Test 5% Significant GOF Test 5% Significant	2492780 2565792 ace Level 7.831 274564				

	Α	В	С	D	E	F	G	Н	I	J	K	L
1189			MI	LE Mean (bia	s corrected)	2150000				•	is corrected)	
1190									Approximate	Chi Square	Value (0.05)	100.4
1191			Adjus	sted Level of	Significance	0.0195			Ac	ljusted Chi S	quare Value	94.81
1192												
1193					Ass	suming Gam	ma Distribut	ion				
1194	9	5% Approxin	nate Gamma	UCL (use w	hen n>=50))	2681989		95% Ad	justed Gamn	na UCL (use	when n<50)	2841070
1195												
1196						Lognorma	GOF Test					
1197			S	hapiro Wilk T	est Statistic	0.9		Shap	oiro Wilk Log	normal GOF	Test	
1198			5% SI	hapiro Wilk C	ritical Value	0.818		Data appea	r Lognormal	at 5% Signifi	cance Level	
1199				Lilliefors T	est Statistic	0.185			liefors Logno			
1200			5	% Lilliefors C				• • •	r Lognormal	at 5% Signifi	cance Level	
1201					Data appear	Lognormal	at 5% Signifi	icance Level				
1202												
1203						Lognorma	l Statistics					
1204				Minimum of L		14.08					logged Data	14.54
1205			N	Maximum of L	ogged Data	14.88				SD of	logged Data	0.313
1206												
1207						uming Logno	rmal Distribu	ution				
1208					95% H-UCL					• •	MVUE) UCL	
1209				Chebyshev (I					97.5% (Chebyshev (I	MVUE) UCL	3650531
1210			99%	Chebyshev (I	MVUE) UCL	4538357						
1211												
1212						etric Distribut						
1213				Data appea	r to follow a	Discernible [Distribution a	t 5% Signific	cance Level			
1214												
1215					•	rametric Dist	ribution Free	UCLs				1
1216					% CLT UCL						ckknife UCL	
1217				Standard Bo	<u> </u>						tstrap-t UCL	
1218				5% Hall's Bo	<u> </u>				95% F	Percentile Bo	otstrap UCL	2487500
1219				95% BCA Bo								
1220				ebyshev(Me							an, Sd) UCL	
1221			97.5% Ch	ebyshev(Me	an, Sd) UCL	3531381			99% Ch	ebyshev(Mea	an, Sd) UCL	4350893
1222												
1223				050/ 0		Suggested	UCL to Use					
1224				95% Stud	dent's-t UCL	25690//						
1225					Manage 050	/ LIO!			1		-1- 050/ 110:	
1226		vote: Sugges		ling the selec		· .	<u> </u>	•			ые 95% UCL	
1227		Those		Recommenda							11 00 (0000)	
1228	11-			s are based u	•							
1229	Но	wever, sımul	ations result	s will not cov	er all Real W	voria data se	s; tor additio	mai insight th	ie user may i	want to consi	uit a statistici	ian.
1230		Note: Fam	biable sees	haha eleenne :	l dote a ====	longe limite	'a a Oh	lohnoor ! -	anomal	1 Comm = 1	ou not be	
1231		NOTE: FOR		ively-skewed					<u> </u>		ay not be	
1232			reliable. (Chen's and J	OHISON'S ME	sulous provid	ie aujustmer	its for positiv	ely skewed (ıata sets.		
1233												

	A B C	D E UCL Statist	F tics for Data	G	L
2					
3	User Selected Options	3			
4	Date/Time of Computation	ProUCL 5.13/31/2021 2:0	06:00 PM		
5	From File	ProUCL Input File_South	Flow Zone.	kls	
6	Full Precision	OFF			
7	Confidence Coefficient	95%			
8	Number of Bootstrap Operations	2000			
9					
10	Total Chromium				
11					
12			General	Statistics	
13	Tota	I Number of Observations	20	Number of Distinct Observations	11
14		Number of Detects	12	Number of Non-Detects	8
15	N	lumber of Distinct Detects	10	Number of Distinct Non-Detects	1
16		Minimum Detect	16	Minimum Non-Detect	10
17		Maximum Detect	52	Maximum Non-Detect	10
18		Variance Detects	190.1	Percent Non-Detects	40%
19		Mean Detects	32.42	SD Detects	13.79
20		Median Detects	30.5	CV Detects	0.425
21		Skewness Detects	0.315	Kurtosis Detects	-1.53
22		Mean of Logged Detects	3.391	SD of Logged Detects	0.444
23					
24		Norm	al GOF Tes	on Detects Only	
25	ξ	Shapiro Wilk Test Statistic	0.889	Shapiro Wilk GOF Test	
26	5% S	Shapiro Wilk Critical Value	0.859	Detected Data appear Normal at 5% Significance Leve	əl
27		Lilliefors Test Statistic	0.168	Lilliefors GOF Test	
28	Ę	5% Lilliefors Critical Value	0.243	Detected Data appear Normal at 5% Significance Level	əl
29		Detected Data a	ppear Norm	al at 5% Significance Level	
30					
31	Kaplan-			itical Values and other Nonparametric UCLs	
32		KM Mean	23.45	KM Standard Error of Mean	3.504
33		KM SD	15	95% KM (BCA) UCL	29.05
34		95% KM (t) UCL	29.51	95% KM (Percentile Bootstrap) UCL	29.5
35		95% KM (z) UCL	29.21	95% KM Bootstrap t UCL	30.79
36		90% KM Chebyshev UCL	33.96	95% KM Chebyshev UCL	38.73
37	97	7.5% KM Chebyshev UCL	45.33	99% KM Chebyshev UCL	58.32
38					
39				tected Observations Only	
40		A-D Test Statistic	0.465	Anderson-Darling GOF Test	
41		5% A-D Critical Value	0.732	Detected data appear Gamma Distributed at 5% Significance	e Level
42		K-S Test Statistic	0.185	Kolmogorov-Smirnov GOF	
43		5% K-S Critical Value	0.246	Detected data appear Gamma Distributed at 5% Significance	e Level
44		Detected data appear	Gamma Dis	tributed at 5% Significance Level	
45			Osesi-si- ·	Data at ad Data Only	
46				Detected Data Only	4.450
47		k hat (MLE)	5.867	k star (bias corrected MLE)	4.456
48		Theta hat (MLE)	5.525	Theta star (bias corrected MLE)	7.275
49		nu hat (MLE)	140.8 32.42	nu star (bias corrected)	106.9
50		Mean (detects)	32.42		
51		Commo BOO	Statistics	ing Imputed Non-Detects	
52	ODO0			NDs with many tied observations at multiple DLs	
53	•			NDs with many tied observations at multiple DLs s <1.0, especially when the sample size is small (e.g., <15-20)	
54	GROS may not be used	J WHELL KSTAL OF DETECTS IS S	oman such as	5 > 1.0, especially when the sample size is small (e.g., < 15-20)	

	Α	В		C	D r such s		E one GP	08.0	F nethod may	G viold inco	orroct v	H alues et	f LICI	l s and B	TVc	J	工	K		L
55				1 01	Sucirs				ally true who	•				s and D) I V S					
56		For gar	mma d	ietrihut	ed dete			•	nd UCLs ma		•			dietribi	ıtion	on KM	estin	nates		
57		1 Or gai	a	iotribut		-cica a	Minim		0.01	J DC COIII	patoa	Joining go	umma	alotilibe	uti011	OHITAWI			lean	21.4
58							Maxim		52										dian	18
59								SD	17.6										CV	0.823
60							k hat (M		0.597					k	star	(bias co	orrec	ted M		0.541
61							a hat (M	- 1	35.84							(bias co				39.57
62 63							u hat (M		23.88							star (b				21.63
64			Ad	djusted	Level c		nificance	- 1	0.038											
65		Apr		-			e (21.63	,	12.06				Adju	isted Cl	hi Sa	uare Va	alue ((21.63	3, β)	11.5
66		95% Gamma	•				•		38.37			95% G		a Adjus				•	. ,	40.25
67																•				
68						Est	imates	of Ga	amma Para	meters us	sing KN	1 Estima	ates							
69							Mean (k	(M)	23.45									SD (I	KM)	15
70						Vai	riance (Ł	KM)	225.1							SE	of M	lean (I	KM)	3.504
71							k hat (k	KM)	2.442								k	star (l	KM)	2.109
72							nu hat (k	KM)	97.7								nu	star (l	KM)	84.38
73						the	eta hat (k	(M)	9.601							tl	heta	star (l	KM)	11.12
74				80%	gamm	na perc	centile (k	(M)	34.89					90	% ga	mma p	ercei	ntile (l	KM)	45.04
75				95%	gamm	na perc	centile (k	(M)	54.7					99	% ga	mma p	ercei	ntile (l	KM)	76.05
76																				
77							Ga	amma	a Kaplan-M	leier (KM)	Statist	ics								
78		Арр	proxim	ate Chi	Square	e Valu	e (84.38	, α)	64.2				Adju	isted Cl	hi Sq	uare Va	alue ((84.38	3, β)	62.81
79	95%	% Gamma Ap	proxim	ate KM	1-UCL (use w	hen n>=	:50)	30.82		959	% Gamr	ma Ad	ljusted l	KM-L	JCL (us	e wh	nen n<	<50)	31.5
80																				
81						Log	gnormal	GOF	F Test on D	etected C	Observa	ations C	Only							
82				SI	hapiro \	Wilk To	est Stati	stic	0.904				Sha	apiro W	/ilk G	OF Tes	st			
83				5% Sh	napiro V	Nilk Cr	ritical Va	alue	0.859	Г	Detecte	d Data	appea	ar Logn	orma	l at 5%	Sign	nifican	ice Le	vel
84					Lillie	fors To	est Stati	stic	0.176				L	illiefors.	GO	Test				
85				59	% Lillief	fors Cr	ritical Va	alue	0.243		Detecte	d Data	appea	ar Logn	orma	l at 5%	Sign	ıifican	ice Le	vel
86						Detec	ted Dat	a app	pear Logno	rmal at 59	% Signi	ificance	Leve	el .						
87																				
88						Log	ınormal	ROS	Statistics	Using Imp	outed N	lon-Det	ects							
89							iginal Sc		23.38							Mear	n in L	Log So	cale	2.929
90							iginal So		15.57									Log So		0.703
91		95% t l	UCL (a			-	f ROS da		29.4					95%		entile E		•		28.84
92				9			otstrap L		29.75						!	95% Bo	otstr	rap t l	JCL	30.59
93					95% F	1-UCL	(Log R	OS)	34.37											
94																				
95				Statis					on Logged	Data and .	Assum	ing Log	norm	al Distri	ibutic					10.5
96					K		an (logg		2.956									Geo M		19.21
97			100				SD (logg		0.627					95%		al H Va		`		2.152
98			KM S	standar	d Error		an (logg		0.146							5% H-U	`	`		31.86
99			100				SD (logg		0.627					95%	Critic	al H Va	alue	(KM-L	₋og)	2.152
100			KM S	standar	d Error	ot Me	an (logg	ed)	0.146											
101									DI 10 0	Namal-el -										
102				DI /0 *	Jarre - '				DL/2 S	Statistics			P.	/O l '	T	·fa				
103				DL/2 N		in O	iginal C.	nala	21.45				υL	/2 Log-	ırans			00.0	colc	2.678
104							iginal So											Log So		
105)E0/ +11			iginal So s norma		17.32 28.15									Log So -Stat U		0.957 40.49
106					•			• /	28.15 ethod, provi	ded for or	mporic	one or	d biot	orical r	9260		/0 ∏-	oldí (JUL	40.49
107				יו צעט	5 11UL G	IECOIT	menae	u IIIE	anou, provi	ueu IOF CC	лпрапѕ	ous an	iu IIIST	oncal re	casul	19				
108																				

109	Α	В	С	D	E Nonparame	F tric Distribut	G ion Free UCL S	H Statistics	I	J K		L
110				Detected D	Data appea	r Normal Dis	tributed at 5%	Significanc	e Level			
111												
112						Suggested	UCL to Use					
113				95% k	KM (t) UCL	29.51						
114												
115	1	Note: Sugge	stions regard	ding the selection	on of a 95%	UCL are pro	ovided to help t	he user to s	select the n	nost appropriate 95% U	CL.	
116			F	Recommendation	ons are bas	ed upon dat	a size, data dis	tribution, ar	nd skewnes	SS.		
117				<u> </u>						Maichle, and Lee (200		
118	Но	wever, simu	ulations resul	ts will not cover	r all Real W	orld data set	ts; for additiona	ıl insight the	user may	want to consult a statis	ticiar	١.
119												
120	Mercury, To	tal										
121						0	04-41-41-					
122				I Nivershaw of Oh		General	Statistics		Niversia	u of Distinct Observatio		-1-1
123			lota	I Number of Ob		20			Numbe	r of Distinct Observatio		11
124					of Detects	10				Number of Non-Detec		10
125			N	lumber of Distin		10			Numbe	er of Distinct Non-Detec		1
126					um Detect					Minimum Non-Dete		0.2
127					num Detect	0.113				Maximum Non-Dete		0.2
128					ce Detects	0.00223				Percent Non-Detec		50%
129					an Detects	0.0526				SD Detec		0.0472
130					an Detects	0.0435				CV Detec		0.898
131					ss Detects	0.183				Kurtosis Detec		-2.052
132				Mean of Logge	ed Detects	-3.799				SD of Logged Detec	cts	1.765
133					M	1005.	D. I I O.					
134				N : M/III T			t on Detects Or		o			
135				Shapiro Wilk Te		0.838			•	ilk GOF Test		
136			5% S	Shapiro Wilk Cri		0.842	Det	tected Data		al at 5% Significance Le	evel	
137				Lilliefors Te		0.221	Data	-1- d D-1		GOF Test		
138			5	5% Lilliefors Cri		0.262				mal at 5% Significance	Leve	.1
139				Detected Da	ata appear	Approximate	e Normal at 5%	s Significan	ce Levei			
140			Vanlan	-Meier (KM) Sta	otiotico ucin	a Normal Ci	ritical Values or	nd other Ne	nnoromot	rio LICLO		
141			Napiali	-Welei (NW) Sta	KM Mean	0.0526	ilicai values ai	na outer no		M Standard Error of Me	-n	0.0149
142					KM SD	0.0320			N	95% KM (BCA) U		0.0769
143				OEO/ I	KM (t) UCL	0.0448			050/ L/M /F	95% KM (BCA) UC Percentile Bootstrap) UC		0.0769
144					(M (z) UCL	0.0784			•	95% KM Bootstrap) U		0.0756
145				90% KM Cheby		0.0771				95% KM Chebyshev U		0.0821
146				7.5% KM Cheby		0.0973				95% KM Chebyshev U		0.118
147				.5 /0 INIVI CHEDY	JOINEY UCL	U. 14U				00 /0 Kivi ChebyShev UC	J L	0.201
148				Ga	mma GOF	Tests on Do	tected Observa	ations Only	,			
149					est Statistic	0.601	IOCIOU ODSEIV			rling GOF Test		
150				5% A-D Cri		0.76	Detected d			istributed at 5% Signific	ance	a Level
151					est Statistic	0.76	Detected 0			Smirnov GOF	ance	, LCVCI
152				5% K-S Cri		0.228	Detected d			istributed at 5% Signific	ance	a Level
153							stributed at 5%			.obatoa at 0 /0 Oigi IIIIC		, 20101
154				Dolooleu u	aw appear		Datou at 0 /0	J.g. III.GITC				
155					Gamma	Statistice on	Detected Data	a Only				
156				L	hat (MLE)	0.707	Jordona Dala	. Only		star (bias corrected ML	E)	0.562
157					hat (MLE)	0.0743				star (bias corrected ML		0.0936
158					hat (MLE)	14.14				nu star (bias correcte		11.23
159					n (detects)	0.0526				ווע טענו (טומט טוופטנפ	٠	11.25
160					(นธเธยเง)	0.0020						
161				Ca	mma POS	Statistics us	sing Imputed N	on-Detects				
162				Ga	IIIIIIa NOS	วเฉนอแบอ US	my mpatea N					

163	A B C D E GROS may not be used when data set	F t has > 50%	G H I J K 6 NDs with many tied observations at multiple DLs	L
164	GROS may not be used when kstar of detects is sr	nall such a	s <1.0, especially when the sample size is small (e.g., <15-20)	
165	For such situations, GROS m	ethod may	yield incorrect values of UCLs and BTVs	
166	This is especial	lly true whe	en the sample size is small.	
167	For gamma distributed detected data, BTVs an	d UCLs ma	y be computed using gamma distribution on KM estimates	
168	Minimum 9	0.0000E-4	Mean	0.0526
169	Maximum	0.143	Median (0.0412
170	SD	0.0436	CV	0.829
171	k hat (MLE)	1.007	k star (bias corrected MLE)	0.889
172	Theta hat (MLE)	0.0522	Theta star (bias corrected MLE)	0.0591
173	nu hat (MLE)	40.26	nu star (bias corrected)	35.56
174	Adjusted Level of Significance (β)	0.038		
175	Approximate Chi Square Value (35.56, α)	22.91	Adjusted Chi Square Value (35.56, β)	22.11
176	95% Gamma Approximate UCL (use when n>=50)	0.0816	95% Gamma Adjusted UCL (use when n<50)	0.0845
177				
178	Estimates of Ga	mma Parar	meters using KM Estimates	
179	Mean (KM)	0.0526		0.0448
	Variance (KM)	0.002		0.0149
180	k hat (KM)	1.378	` /	1.205
181 182	nu hat (KM)	55.14	, ,	48.2
	theta hat (KM)	0.0381	` /	0.0436
183	80% gamma percentile (KM)	0.0832	` /	0.116
184	95% gamma percentile (KM)	0.148		0.221
185	30% gamma percentile (rum)	0.140	55% gariina percenaie (KW)	0.221
186	Gamma	Kanlan-M	eier (KM) Statistics	
187	Approximate Chi Square Value (48.20, α)	33.27		32.29
188	95% Gamma Approximate KM-UCL (use when n>=50)	0.0762		0.0785
189	30% damina Approximate NA GGE (ase when its 60)	0.0702	3078 damma / ajastea / Kir 502 (ase when in 509)	0.0700
190	Lognormal GOF	Test on D	etected Observations Only	
191	Shapiro Wilk Test Statistic	0.852	Shapiro Wilk GOF Test	
192	5% Shapiro Wilk Critical Value	0.842	Detected Data appear Lognormal at 5% Significance Leve	J
193	Lilliefors Test Statistic	0.042	Lilliefors GOF Test	:1
194	5% Lilliefors Critical Value	0.262	Detected Data appear Lognormal at 5% Significance Leve	ı
195			rmal at 5% Significance Level	:1
196	Detected Data app	ear Lognor	mai at 5% Significance Level	
197	Lognormal BOS	Ctatiotics I	Using Imported New Detects	
198	_		Using Imputed Non-Detects	2 700
199	Mean in Original Scale	0.0584	S	3.799
200	SD in Original Scale	0.0754		1.663
201	95% t UCL (assumes normality of ROS data)	0.0875	·	0.0864
202	95% BCA Bootstrap UCL	0.0943	95% Bootstrap t UCL	0.104
203	95% H-UCL (Log ROS)	0.367		
204	Oscillator I IZA di c		Date and Assuming Language Distribution	
205			Data and Assuming Lognormal Distribution	0.0001
206	KM Mean (logged)	-3.799		0.0224
207	KM SD (logged)	1.674	, ,,,	3.725
208	KM Standard Error of Mean (logged)	0.558	ν ο,	0.38
209	KM SD (logged)	1.674	95% Critical H Value (KM-Log)	3.725
210	KM Standard Error of Mean (logged)	0.558		
211				
212		DL/2 St	tatistics	
213	DL/2 Normal		DL/2 Log-Transformed	
214	Mean in Original Scale	0.0763	· ·	3.051
215	SD in Original Scale	0.0406		1.437
	95% t UCL (Assumes normality)	0.092	95% H-Stat UCL	0.397

217	A B C D E DL/2 is not a recommended me	F ethod, provid	G H I J K L ded for comparisons and historical reasons	L
218				
219	Nonparame	tric Distribut	tion Free UCL Statistics	
220	Detected Data appear Appro	oximate Norr	mal Distributed at 5% Significance Level	
221				
222		Suggested	UCL to Use	
223	95% KM (t) UCL	0.0784		
224				
225			normal) distribution passing one of the GOF test	
226 227	When applicable, it is suggested to use a UCL ba	ased upon a	distribution (e.g., gamma) passing both GOF tests in ProUCL	
228	Note: Suggestions regarding the selection of a 95%	UCL are pro	ovided to help the user to select the most appropriate 95% UCL.	
229	Recommendations are bas	sed upon dat	a size, data distribution, and skewness.	
230	These recommendations are based upon the resu	Its of the sim	nulation studies summarized in Singh, Maichle, and Lee (2006).	
231	However, simulations results will not cover all Real W	orld data set	ts; for additional insight the user may want to consult a statisticial	n.
232				
233	Silver			
234				
235		General	Statistics	
236	Total Number of Observations	20	Number of Distinct Observations	2
237	Number of Detects	1	Number of Non-Detects	19
238	Number of Distinct Detects	1	Number of Distinct Non-Detects	1
239				
240	Warning: Only one distinct data value was detecte	d! ProUCL (or any other software) should not be used on such a data set!	
0	It is suggested to use alternative site specific values determ	ined by the	Project Team to estimate environmental parameters (e.g., EPC	BTV)
241			· · · · · · · · · · · · · · · · · · ·	, D. v <i>j</i> .
		•		, 51 7).
242		<u> </u>	Silver was not processed!	, 51 7).
241242243244		<u> </u>		, 5117).
242 243 244		<u> </u>		, 511).
242 243 244 245	The data set	<u> </u>		, 514).
242 243 244 245 246		<u> </u>		, 514).
242 243 244 245 246 247	The data set	<u> </u>	Silver was not processed!	, 514).
242 243 244 245 246 247 248	The data set	for variable \$	Silver was not processed!	5
242 243 244 245 246 247 248 249	The data set to the data set t	for variable s	Silver was not processed! Statistics	
242 243 244 245 246 247 248 249 250	The data set of Methylphenol, 3- and 4- Total Number of Observations	General S	Silver was not processed! Statistics Number of Distinct Observations	5
242 243 244 245 246 247 248 249 250 251	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects	General S	Silver was not processed! Statistics Number of Distinct Observations Number of Non-Detects	5 16
242 243 244 245 246 247 248 249 250 251 252	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects	General 3	Silver was not processed! Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects	5 16
242 243 244 245 246 247 248 249 250 251 252 253	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect	General S 20 4 4 30	Statistics Number of Distinct Observations Number of Distinct Non-Detects Number of Distinct Non-Detects Minimum Non-Detect	5 16 1
242 243 244 245 246 247 248 250 251 252 253 254	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect	General 3 20 4 4 30 110	Silver was not processed! Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect	5 16 1 10
242 243 244 245 246 247 248 249 250 251 252 253 254 255	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects	General 3 20 4 4 30 110	Statistics Number of Distinct Observations Number of Distinct Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects	5 16 1 10 10 80%
242 243 244 245 246 247 248 250 251 252 253 254 255 256	Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects	General 3 20 4 4 30 110 1111 73	Statistics Number of Distinct Observations Number of Distinct Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects	5 16 1 10 10 80% 33.34
242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects	General 3 20 4 4 30 110 1111 73 76	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects	5 16 1 10 10 80% 33.34 0.457
242 243 244 245 246 247 248 250 251 252 253 254 255 256 257 258	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Skewness Detects	General 3 20 4 4 30 110 1111 73 76 -0.502	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects Kurtosis Detects	5 16 1 10 10 80% 33.34 0.457 0.813
242 243 244 245 246 249 250 251 252 253 254 255 256 257 258 259	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Skewness Detects Mean of Logged Detects	General 3 20 4 4 30 110 1111 73 76 -0.502 4.189	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects Kurtosis Detects	5 16 1 10 10 80% 33.34 0.457 0.813
242 243 244 245 246 247 248 250 251 252 253 254 255 256 257 258 259 260	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Skewness Detects Mean of Logged Detects	General 3 20 4 4 30 110 1111 73 76 -0.502 4.189	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects Kurtosis Detects SD of Logged Detects	5 16 1 10 10 80% 33.34 0.457 0.813
242 243 244 245 246 247 248 250 251 252 253 254 255 256 257 258 259 260 261	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Skewness Detects Mean of Logged Detects Norm	General 3 20 4 4 30 110 1111 73 76 -0.502 4.189	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects Kurtosis Detects SD of Logged Detects	5 16 1 10 10 80% 33.34 0.457 0.813 0.559
242 243 244 245 246 249 250 251 252 253 254 255 256 257 258 259 260 261 262	Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Skewness Detects Mean of Logged Detects Norm Shapiro Wilk Test Statistic	General 3 20 4 30 110 1111 73 76 -0.502 4.189 aal GOF Test	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects Kurtosis Detects SD of Logged Detects to on Detects Only Shapiro Wilk GOF Test	5 16 1 10 10 80% 33.34 0.457 0.813 0.559
242 243 244 245 246 247 250 251 252 253 254 255 256 257 258 259 260 261 262 263	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Skewness Detects Skewness Detects Mean of Logged Detects Norm Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value	General 3 20 4 4 30 110 1111 73 76 -0.502 4.189 all GOF Test 0.986 0.748	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects Kurtosis Detects SD of Logged Detects SD of Logged Detects To no Detects Only Shapiro Wilk GOF Test Detected Data appear Normal at 5% Significance Level	5 16 1 10 10 80% 33.34 0.457 0.813 0.559
242 243 244 245 246 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264	Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Skewness Detects Mean of Logged Detects Mean of Logged Detects Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic	General 3 20 4 4 30 110 1111 73 76 -0.502 4.189 all GOF Test 0.986 0.748 0.202 0.375	Silver was not processed! Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects Kurtosis Detects SD of Logged Detects ton Detects Only Shapiro Wilk GOF Test Detected Data appear Normal at 5% Significance Level Lilliefors GOF Test	5 16 1 10 10 80% 33.34 0.457 0.813 0.559
242 243 244 245 246 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265	Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Skewness Detects Mean of Logged Detects Mean of Logged Detects Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic	General 3 20 4 4 30 110 1111 73 76 -0.502 4.189 all GOF Test 0.986 0.748 0.202 0.375	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects Kurtosis Detects SD of Logged Detects SD of Logged Detects ton Detects Only Shapiro Wilk GOF Test Detected Data appear Normal at 5% Significance Level Lilliefors GOF Test Detected Data appear Normal at 5% Significance Level	5 16 1 10 10 80% 33.34 0.457 0.813 0.559
242 243 244 245 246 247 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 265	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Median Detects Skewness Detects Skewness Detects Mean of Logged Detects Mean of Logged Detects Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Detected Data as	General 3 20 4 4 30 110 1111 73 76 -0.502 4.189 all GOF Test 0.986 0.748 0.202 0.375 appear Norm	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects Kurtosis Detects SD of Logged Detects SD of Logged Detects ton Detects Only Shapiro Wilk GOF Test Detected Data appear Normal at 5% Significance Level Lilliefors GOF Test Detected Data appear Normal at 5% Significance Level	5 16 1 10 10 80% 33.34 0.457 0.813 0.559
242 243 244 245 246 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 265 266 267	The data set of Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Median Detects Skewness Detects Skewness Detects Mean of Logged Detects Mean of Logged Detects Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Detected Data as	General 3 20 4 4 30 110 1111 73 76 -0.502 4.189 all GOF Test 0.986 0.748 0.202 0.375 appear Norm	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects Kurtosis Detects SD of Logged Detects SD of Logged Detects Lilliefors GOF Test Detected Data appear Normal at 5% Significance Level Lilliefors GOF Test Detected Data appear Normal at 5% Significance Level Late 15% Significance Level	5 16 1 10 10 80% 33.34 0.457 0.813 0.559
242 243 244 245 246 247 248 250 251 252 253 254 255 256 257 258 259 260	Methylphenol, 3- and 4- Total Number of Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detects Mean Detects Median Detects Skewness Detects Mean of Logged Detects Mean of Logged Detects Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value Lilliefors Test Statistic 5% Lilliefors Critical Value Detected Data a	General 3 20 4 4 30 110 1111 73 76 -0.502 4.189 all GOF Test 0.986 0.748 0.202 0.375 appear Normal	Statistics Number of Distinct Observations Number of Non-Detects Number of Distinct Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detects CV Detects CV Detects Kurtosis Detects SD of Logged Detects SD of Logged Detects Lilliefors GOF Test Detected Data appear Normal at 5% Significance Level Lilliefors GOF Test Detected Data appear Normal at 5% Significance Level al at 5% Significance Level	5 16 1 10 10 80% 33.34 0.457 0.813 0.559

074	Α	В	С	D D	E 5% KM (z) UCI	F 34.63	G	Н	I	J 95% KM Boot	K stran t UCI	L N/A
271					Chebyshev UCI					95% KM Cheb		54.47
272					Chebyshev UCI					99% KM Cheb	-	95.34
273					71105701101 001	00.20				007011111 01100	,,01101 002	
274					Gamma GOI	Tests on De	etected Obse	rvations Or	nlv			
275 276				A-	D Test Statistic				•	Darling GOF Tes	et .	
277				5% A-I	D Critical Value		Detected			Distributed at 59		ce Level
278				K-	S Test Statistic	0.259				ov-Smirnov GOF		
279				5% K-	S Critical Value	0.396	Detected	d data appe	ar Gamma	Distributed at 59	% Significan	ce Level
280				Detec	ted data appea	ar Gamma Di	stributed at 5	% Significa	nce Level			
281												
282					Gamma	Statistics or	n Detected Da	ata Only				
283					k hat (MLE	5.072				k star (bias corre	ected MLE)	1.435
284				T	Theta hat (MLE	14.39			The	ta star (bias corr	ected MLE)	50.88
285					nu hat (MLE	40.58				nu star (bias	corrected)	11.48
286					Mean (detects	73						
287						, 						
288							sing Imputed					
289				•						at multiple DLs		
290		GROS ma	•					•		size is small (e.	g., <15-20)	
291			F:	or such situ	uations, GROS					BTVs		
292						-	en the sample					
293		For gai	mma distribu	ited detect			ay be comput	ed using ga	mma distri	bution on KM es		
294					Minimum						Mean	15.48
295					Maximum						Median	0.01
296					SE					L / l. !	CV	2.1
297					k hat (MLE				The	k star (bias corr		0.165
298				I	Theta hat (MLE nu hat (MLE				ine	ta star (bias corre nu star (bias	,	93.8
299			Adjusto	d Level of	Significance (β					Tiu Stat (blas	s corrected)	0.002
300		Δ.			Value (6.60, α				Adjusted	I Chi Square Val	ue (6 60 R)	1.762
301					se when n>=50			95% G		usted UCL (use v	, ,,,	N/A
302					o whom in the	02.20		0070 G	arrina / taj	30.00 002 (000 1		
303 304					Estimates of 0	Gamma Para	meters using	KM Estima	ites			
305					Mean (KM						SD (KM)	28.32
306					Variance (KM					SE of	Mean (KM)	7.311
307					k hat (KM						k star (KM)	0.575
308					nu hat (KM						u star (KM)	22.99
309					theta hat (KM	35.48				thet	ta star (KM)	39.32
310			80′	% gamma	percentile (KM	37.25			9	00% gamma pero	centile (KM)	59.34
311			95′	% gamma	percentile (KM	82.59			9	99% gamma pero	centile (KM)	139
312						1	1					
313					Gamı	-	leier (KM) Sta	atistics				
314					/alue (22.99, α					Chi Square Valu		12.5
315	95	% Gamma Ap	proximate K	M-UCL (us	se when n>=50	39.71		95% Gamn	na Adjuste	d KM-UCL (use v	when n<50)	41.58
316												
317					Lognormal G		etected Obs	ervations O	•			
318				•	lk Test Statistic					Wilk GOF Test		
319			5% S		lk Critical Value		Dete	ected Data		normal at 5% Si	gnificance Le	evel
320					rs Test Statistic					rs GOF Test		
321					's Critical Value					normal at 5% Si	gnificance Le	evel
322				D	etected Data a	ppear Logno	rmal at 5% S	ignificance	Level			
323					1	0.04.11.11		J NI:				
324					Lognormal RC	Statistics	Using Impute	od Non-Dete	ects			
_												

325	Α		В			С		D ⁄lean		 rigina	E al Scale		F .05		G		Н			ı			J Mea	n in		K g Scal	le	L 2.16
326								SD	in O	rigina	al Scale	30	.42													g Scal		1.416
327			95%	% t U	JCL (assur	mes n	orma	ality c	of RO	S data)	32	.81							95	% F	Perce	ntile E	300	tstra	ap UC	;L	33.32
328							95%	6 BC	A Bo	otstr	ap UCL	36	.5									9	5% Bo	oots	strap	t UC	;L	40.58
329							9!	5% H	I-UCI	L (Lo	g ROS)	68	.68															
330																												
331						Sta	itistic	s usir	ng Kl	M es	timates	on Lo	gged l	Data	and A	ssun	ning	Logr	norma	al Dis	strib	oution	1					
332								K	ММ	ean (logged)	2.	68										ı	KM	Geo	о Меа	ın	14.58
333									KM	SD (logged)	0.	785							95	% C	Critica	al H V	alu	e (Kl	M-Log	g)	2.34
334					KM	Stand	dard E	rror	of Me	ean (logged)	0.	203									95	% H-L	JCL	. (KI	M -Log	3)	30.24
335									KM	SD (logged)	0.	785							95	% C	Critica	al H V	alu	e (Kl	M-Log	ე)	2.34
336					KM	Stand	dard E	rror	of Me	ean (logged)	0.	203															
337																												
338												- 1	DL/2 S	Statis	tics													
339						DL/:	2 Nor												DL	2 Lo	g-T	rans	forme					
340							- N				al Scale															g Scal		2.125
341						0501	1110.				al Scale		.89													g Scal		1.082
342		95% t UCL (Assume									• .		.54	ided 1	for a	nns-	ioo-		l bict	oric-		000-		% F	⊣-St	at UC	·L	29.77
343						טנו	∠ IS N	ot a	recol	ınme	naed M	ernod	provi	iaea 1	or cor	npari	isons	s and	ı miste	orica	и геа	ason	5					
344										Nor	nparame	otrio D	iotribu	ıtlan	Eroo I	ורו נ	Ctati	otico										
345								Doto	octoc		a appea								noo I	ovol								
346								Dele	-Cleu	ı Dau	a appea	ii NOII	ııaı Dı	Sulbu	uteu at	1 3 70	Sign	illicai	ICE L	.6761								
347												Suga	ested	LUCI	_ to Us	e.												
348									95%	6 KM	(t) UCL		.24		- 10 00													
349											(-, -, -, -, -, -, -, -, -, -, -, -, -, -																	
350 351		Not	e: Su	gges	stion	s rega	arding	the s	selec	ction	of a 95%	6 UCL	are pr	rovid	ed to h	nelp t	he u	ser to	sele	ect th	e m	ost a	pprop	riat	te 95	5% UC	CL.	
352											s are ba																	
353		Th	ese r	ecor	nme	ndatio	ns ar	e bas	sed u	ıpon	the resu	ults of	he sin	nulat	ion stu	ıdies	sum	mari	zed ir	n Sin	gh,	Maic	hle, a	nd	Lee	(2006	3).	
354	ı	Howe	ver, s	imul	latior	ns res	ults w	ill no	t cov	er al	I Real V	Vorld c	ata se	ets; fo	or addi	tiona	ıl insi	ight t	he us	er m	ay v	want	to cor	sul	lt a s	statisti	ician	
355																												
	Phenanth	rene																										
357																												
358													eneral	Stat	istics													
359						Tot	tal Nu	ımbeı	r of C	Obser	rvations									Num	nber	of D	istinct	Ob	ser	vation	IS	3
360											Detects															Detect		19
361							Numl	ber o	f Dis	tinct	Detects	1								Nur	nbe	er of [Distino	t N	on-E	Detect	ts	2
362		,,,			1		u					J		<i>1</i> _ ·				\			L .							
363	la la ····										detecte																	DT\^
364	It is sug	geste	ea to	use	aiter	native) SITE	spec	ITIC V	alues	s aeterr	nined	by the	Proj	ect le	am t	o es	umat	e en	viron	mei	ntal p	param	ete	rs (e	∍.g., E	:PC,	RIV).
365									The	doto	oot for	orick!	o Dha	nort	hrone	woo .	not -	are e e										
366									i iie (uala	set for \	raridDl	e rne	mant	ınene	was	not p	JIOCE	33 8 0	1.5								
367																												
368	Naphthale	ene																										
	upiiuiali																											
370												Ge	eneral	Stat	istics													
371 372		Total Number of Ob									rvations	20								Num	nber	of D	istinct	Ob	ser	vation	ıs	9
373								N	umbe	er of	Detects	7										Nur	nber o	f N	on-E	Detect	ts	13
374							Num	ber o	f Dis	tinct	Detects	7								Nur	nbe	er of [Distino	t N	on-E	Detect	ts	2
375									Mini	imum	n Detect	7.	6									Ν	linimu	ım l	Von-	-Detec	ct	5
376									Maxi	imum	n Detect	140										М	aximu	ım l	Von-	-Detec	ct	20
377								,	Varia	ance	Detects	346	3									F	ercen	t N	on-E	Detect	ts	65%
378									M	lean	Detects	70	.47											5	SD E	Detect	ts	58.89
5,5																												

379	Α	В	С	D M	E edian Detects	F 96	G	Н		J	K CV Detects	L 0.836
380				Skev	vness Detects	-0.181				Ku	ırtosis Detects	-2.492
381				Mean of Lo	ogged Detects	3.655				SD of Lo	ogged Detects	1.373
382												
383					Norn	nal GOF Tes	t on Detects	Only				
384			S	Shapiro Wilk	Test Statistic	0.814			Shapiro V	Vilk GOF Tes	st	
385			5% S	hapiro Wilk	Critical Value	0.803	De	etected Data	a appear No	rmal at 5% S	Significance Lev	el
386				Lilliefors	Test Statistic	0.272			Lilliefor	s GOF Test		
387			5	% Lilliefors	Critical Value	0.304	De	etected Data	a appear No	rmal at 5% S	Significance Lev	el
388				D	etected Data	appear Norm	nal at 5% Sig	nificance L	.evel			
389												
390			Kaplan-	Meier (KM)	Statistics usin	ng Normal Cı	ritical Values	and other	Nonparame	etric UCLs		
391					KM Mean	28.12			ŀ	KM Standard	Error of Mean	10.82
392					KM SD	44.8				95% K	(M (BCA) UCL	47.13
393				95	% KM (t) UCL	46.83			95% KM	(Percentile B	ootstrap) UCL	45.23
394				959	% KM (z) UCL	45.92				95% KM Bo	ootstrap t UCL	49.45
395			!	90% KM Ch	ebyshev UCL	60.59				95% KM Ch	nebyshev UCL	75.3
396			97	7.5% KM Ch	ebyshev UCL	95.71				99% KM Ch	nebyshev UCL	135.8
397						I.	I.					
398					Gamma GOF	Tests on De	tected Obse	rvations Or	nly			
399				A-D	Test Statistic	0.874		,	Anderson-D	arling GOF T	Test	
400				5% A-D	Critical Value	0.729	Detect	ed Data No	t Gamma D	istributed at 5	5% Significance	Level
401				K-S	Test Statistic	0.315			Kolmogoro	v-Smirnov G	OF	
402				5% K-S	Critical Value	0.32	Detected	d data appe	ar Gamma	Distributed at	t 5% Significand	ce Level
403				Detected (data follow Ap	pr. Gamma [Distribution a	ıt 5% Signif	ficance Leve	el		
404						-						
405					Gamma	Statistics on	Detected Da	ata Only				
406					k hat (MLE)	0.965				k star (bias c	orrected MLE)	0.647
407				Th	eta hat (MLE)	73			Theta	a star (bias c	orrected MLE)	108.9
408					nu hat (MLE)	13.51				nu star (b	oias corrected)	9.056
409				N	lean (detects)	70.47						
410												
411					Gamma ROS	Statistics us	sing Imputed	Non-Detec	cts			
412			GROS may	y not be use	d when data s	et has > 50%	NDs with m	any tied ob	servations a	at multiple DL	.S	
413		GROS ma	y not be used	d when ksta	r of detects is	small such a	s <1.0, espec	cially when	the sample	size is small	(e.g., <15-20)	
414			Fo	or such situa	ations, GROS	method may	yield incorre	ct values of	UCLs and	BTVs		
415					This is espec							
416		For ga	mma distribu	ted detected	d data, BTVs a	and UCLs ma	y be comput	ed using ga	ımma distrib	oution on KM	estimates	
417					Minimum		-				Mean	25.1
418					Maximum	140					Median	0.01
419					SD	47.6					CV	1.896
420					k hat (MLE)	0.165				k star (bias c	orrected MLE)	0.173
421				Th	eta hat (MLE)	152.3			Theta	a star (bias c	orrected MLE)	144.7
422					nu hat (MLE)	6.592				<u> </u>	oias corrected)	6.937
423			Adjusted	d Level of Si	ignificance (β)	0.038					,	
424		Αį	oproximate C	hi Square V	/alue (6.94, α)	2.136			Adjusted	Chi Square \	/alue (6.94, β)	1.932
425			•		when n>=50)	81.52		95% G		<u> </u>	se when n<50)	90.13
426				•						•	,	
427				F	Estimates of G	amma Parar	meters using	KM Estima	ates			
428					Mean (KM)	28.12					SD (KM)	44.8
428					Variance (KM)					SE	of Mean (KM)	10.82
					k hat (KM)	0.394					k star (KM)	0.368
430					nu hat (KM)	15.76					nu star (KM)	14.73
431					theta hat (KM)	71.37				†l	heta star (KM)	76.37
432					(1311)							

433	A B C D 80% gamma perc	E centile (KM)	F 44.89	G	Н		90%	J 6 gamma perd	K centile (KM)	L 80.55
434	95% gamma perc	entile (KM)	120.2				99%	6 gamma perc	centile (KM)	220.8
435										
436		Gamm	a Kaplan-M	eier (KM) Sta	itistics					
437	Approximate Chi Square Value	e (14.73, α)	7.073			Adjuste	ed Chi	i Square Valu	e (14.73, β)	6.656
438	95% Gamma Approximate KM-UCL (use wh	hen n>=50)	58.55		95% Gamr	ma Adjus	sted K	M-UCL (use v	when n<50)	62.22
439		<u> </u>								
440	Loç	gnormal GO	F Test on D	etected Obse	ervations C	Only				
441	Shapiro Wilk Te	est Statistic	0.761			Shapi	iro Wil	k GOF Test		
442	5% Shapiro Wilk Cr	itical Value	0.803	De	tected Dat	ta Not Lo	gnorm	nal at 5% Sigr	nificance Lev	el
443	Lilliefors Te	est Statistic	0.318			Lillid	efors (GOF Test		
444	5% Lilliefors Cr	itical Value	0.304	De	tected Dat	ta Not Lo	gnorm	nal at 5% Sigr	nificance Lev	el
445	Dete	ected Data N	Not Lognorm	nal at 5% Sig	nificance L	_evel				
446										
447	Log	normal ROS	S Statistics U	Jsing Impute	d Non-Det	ects				
448	Mean in Ori	ginal Scale	25.85					Mean ir	n Log Scale	1.198
449	SD in Ori	ginal Scale	47.19					SD ir	n Log Scale	2.291
450	95% t UCL (assumes normality of	ROS data)	44.1				95% F	Percentile Boo	otstrap UCL	44.27
451	95% BCA Boo	tstrap UCL	47.51					95% Boot	strap t UCL	55.48
452	95% H-UCL	(Log ROS)	580.8							
453				1						
454	Statistics using KM	l estimates o	on Logged D	Data and Ass	uming Log	normal i	Distrib	oution		
455	KM Me:	an (logged)	2.355					KM	I Geo Mean	10.53
456	KM S	SD (logged)	1.222				95% C	Critical H Valu	e (KM-Log)	2.97
457	KM Standard Error of Mea	an (logged)	0.297					95% H-UCL	L (KM -Log)	51.08
458	KM S	SD (logged)	1.222				95% C	Critical H Valu	e (KM-Log)	2.97
459	KM Standard Error of Mea	an (logged)	0.297							
460										
461			DL/2 St	tatistics						
462	DL/2 Normal					DL/2	Log-T	ransformed		
463	Mean in Ori	ginal Scale	27.79					Mean ir	n Log Scale	2.152
464	SD in Ori	ginal Scale	46.22					SD ir	n Log Scale	1.468
465	95% t UCL (Assumes	s normality)	45.66					95%	H-Stat UCL	78.69
466	DL/2 is not a recom	nmended me	ethod, provid	ded for comp	arisons an	ıd histori	ical rea	asons		
467										
468		Nonparame	tric Distribut	tion Free UC	L Statistics	S				
469	Detected	Data appear	r Normal Dis	stributed at 5°	% Significa	ance Lev	/el			
470										
471			Suggested	UCL to Use						
471	95%	KM (t) UCL	46.83							
473				l .						
474	Note: Suggestions regarding the selecti	ion of a 95%	UCL are pro	ovided to help	p the user t	to select	the m	ost appropria	te 95% UCL.	
475	Recommendati									
476	These recommendations are based up		<u> </u>						Lee (2006).	
477	However, simulations results will not cove									an.
478										
	1,2,4-Trimethylbenzene									
480										
481			General	Statistics						
482	Total Number of Ob	oservations	20			N	umber	of Distinct Ol	bservations	10
483	Number	r of Detects	7					Number of N	Ion-Detects	13
484	Number of Distil	nct Detects	7			N	lumbe	er of Distinct N	Ion-Detects	3
485		num Detect	3.8					Minimum	Non-Detect	1
486	Marilla	num Detect	51						Non-Detect	10
400								*****	- 74-	

487	Α		В		С			D Var	riand	E ce Detec	cts	F 511.1			G		Н		I			J ercent	No	K n-Dete	cts	L 65%
488									Mea	n Dete	cts	27.9											SI	D Dete	cts	22.61
489								M	ledia	n Dete	cts	40											C'	V Dete	cts	0.81
490								Skew	vnes	s Detec	cts	-0.258	3									Kur	rtosi	s Dete	cts	-2.636
491							Mear	of Lo	ogge	ed Detec	cts	2.78	6								SD	of Log	gge	d Dete	cts	1.291
492																										
493									_			al GOF	Tes	t on C	etects	Only	<i>'</i>	•								
494							•			st Statis		0.77							hapiro							
495					5	% Si				ical Val		0.80	3		Į.	Dete	cted Da	ata r					nitic	ance L	evel	
496										st Statis		0.28	,				15.		Lillief				,			
497						5				ical Val		0.30		 - NI			ed Data				nai at t	5% Sig	gnit	icance	Leve	
498							De	tected	a Da	та арре	ear.	Approxi	mate	e Nor	mai at	5% 3	Signific	anc	e Leve	91						
499					Kar	nlan_l	Majaı	· (KM)	\ Sta	tietice i	ıein	g Norma	ıl Cı	ritical	Values	e and	l other	Nor	naran	netri	- LICI					
500					r/ap	Jiai I-i	MEIEI	(IXIVI)	Julia	KM Me		10.57		illicai	values	anc	ı oui c i	INOI	iparari				Erro	r of Me	an	4.293
501										KMS		17.76								IXIV				BCA) U		17.91
502								Q.F.	% k	M (t) U		17.70						٥	5% KI	// /D				trap) U		17.43
503										M (z) U(17.98						3	∪ /∪ I\I\					rap t U		20.38
504						c)0% k					23.45												shev U		29.28
505		90% KM Cheb 97.5% KM Cheb										37.38												shev U		53.29
506		97.5% KM Cheb										37.30								3		OIIC	Juys	,,,,,, U	JL	
507									Gai	mma G(OF :	Tests or	. De	atecte	d Ohse	nvat	ions Or	nlv								
508										st Statis		1.00			1 OD30	n vat		-	erson-	-Dar	lina G	OF T	e t			
509							50			ical Val		0.72			Detect	ed C	ata No							ianific:	ance '	evel
510										st Statis		0.33			Delecti	.cu L			mogor					igillice	111001	20001
511							50			ical Val		0.31			Detect	ed D	ata No							ianific:	ance '	evel
512												amma I								Dist	iibutot	1 at 5 /	<i>7</i> 0 O	igillice	111001	20001
513									,tou		0. 0	adiiiiid i	J10t1	iibuto	a at o /	0 O.g	iiiioaii		-0101							
514										Gamr	ma s	Statistic	s on	n Dete	cted D	ata (Only									
515									k	hat (ML		1.05			0.00 5	-	Jy			k s	star (bi	ias co	rrec	cted ML	F)	0.699
516								Th		hat (ML	- 1	26.41							The		`			cted ML		39.93
517								• • • • • • • • • • • • • • • • • • • •		hat (ML	- 1	14.79							1110	ota c				correcte		9.783
518								N		detec	- 1	27.9										(5.0			-	
519									, ioui	. (40.00	,,	27.0														
520 521									Ga	mma Ro	os	Statistic	s us	sing lı	nputed	l Noi	n-Detec	cts								
522				G	ROS	may	not b					et has >		-	-				ations	s at r	nultipl	e DLs	S			
523		GR	OS n	nay n	ot be	used	whe	n ksta	ır of	detects	is s	small suc	h a	s <1.0	, espe	cially	when	the	sampl	e siz	ze is s	mall (e.g.	, <15-2	20)	
524						Fo	r suc	n situa	atior	ns, GRC	OS n	nethod r	nay	yield	incorre	ct va	lues of	f UC	Ls and	d BT	Vs					
525												ally true														
526			For	gamm	na dist	tribut	ed de	tected	d da	ta, BTV	/s ar	nd UCLs	ma	ay be o	comput	ed u	sing ga	amm	a distr	ribut	ion on	KM e	estir	nates		
527										Minimu	um	0.01												Мє	ean	10
528										Maximu	um	51												Med	ian	0.01
529										5	SD	18.55	5											-	CV	1.854
530									k	hat (ML	E)	0.18	5							k s	star (bi	ias co	rrec	ted MI	_E)	0.191
531								Th	neta	hat (ML	E)	53.94							The	eta s	star (bi	as co	rrec	ted ML	_E)	52.38
532		nu ha									E)	7.41	9								nu st	ar (bia	as c	correcte	ed)	7.64
533		Adjusted Level of Significa										0.038	3													
534		Approximate Chi Square Value (2.52	8					Α	djuste	d Cl	ni Squ	are Va	alue	(7.64,	, β)	2.302
535		95% Gamma Approximate UCL (use wher										30.23	}				95% G	amı	ma Ad	juste	ed UC	L (use	e wł	nen n<	50)	33.21
536																										
537								E	Estir	nates o	f Ga	amma P	araı	meter	s using	, KM	Estima	ates								
538									٨	lean (K	M)	10.57	,											SD (K	(M)	17.76
539								١	Vari	ance (K	M)	315.5										SE c	of M	lean (K	(M)	4.293
540										k hat (K	M)	0.35	4										k	star (K	(M)	0.334
J 10																										

541	Α		В		С		D	nu	E hat (KM)	F 14.16		G	Н					J	nu st	K ar (KM)	L 13.37	7
542	theta hat (KM)									29.85		theta star (KM) 31.61										-
543	80% gamma percentile (KM)											90% gamma percentile (KM) 30.73									_	
544		95% gamma percentile (KM)										99% gamma percentile (KM) 87.56										
545																						
546									Gamm	na Kaplan-l	Meie	er (KM) St	tatistics									
547			,	Approx	ximate	Chi S	Square V	Value ((13.37, α)	6.145	Adjusted Chi Square Value (13.37, β)									5.76		
548	959	% Ga	mma	Appro	ximate	e KM-	UCL (us	se whe	n n>=50)	23			95% G	amma	Adjust	ted KI	M-UC	CL (use	e whe	n n<50)	24.54	
549																						
550										F Test on	Dete	ected Obs	servatio		-							
551									t Statistic						Shapir							
552					59	% Sha			cal Value	0.803		Detected Data Not Lognormal at 5% Significance Level										
553									t Statistic	0.329		Lilliefors GOF Test Detected Data Not Lognormal at 5% Significance Level										
554						5%			cal Value		Ш.					gnorm	al at	5% Si	gnitica	ance Lev	el	
555								Detec	ted Data	Not Lognor	rmai	at 5% Si	gnifican	ce Lev	rei							_
556										O Otatiatia	- -	!	ad Nian	Datas								
557										S Statistics	s US	ing imput	ea Non-	Detec	เร			Maan	ماما	a Coolo	0.533	
558									nal Scale nal Scale											g Scale g Scale	0.533 2.066	_
559			05%	+ 1.101	(200	umoc			OS data)	17.44					0	15% D	orco			ap UCL	17.49	
560			33 /0	i UCL	L (assi			-	trap UCL	18.52						J /0 F				p t UCL	21.43	_
561									og ROS)	117.3							- 30	J 70 DO	otstra	PIOCL	21.43	_
562						•	J	00L (L	.og (100)	117.5												_
563					s	tatisti	cs usina	ı KM e	stimates	on Logged	i Dai	ta and As	sumina	Loano	rmal D	istrib	ution					
564						· ·			(logged)	1.045		ia ana 7 io	,cuming	Logilo	indi b		au on		M Ge	o Mean	2.845	_
565									(logged)	1.491					9	5% C	ritica			(M-Log)	3.411	_
566 567				K	M Stai	ndard			(logged)	0.368										M -Log)	27.74	-
568									(logged)	1.491					9	5% C			-	(M-Log)	3.411	_
569				K	M Stai	ndard	Error of	f Mean	(logged)	0.368									•	<u>.</u>		
570																						
571										DL/2	Stat	tistics										
572					DI	_/2 No	rmal								DL/2 L	.og-Tr	ransf	ormed				
573							Mean in	n Origi	nal Scale	11.1								Mean	in Lo	g Scale	1.122	
574							SD in	n Origi	nal Scale	18								SD	in Lo	g Scale	1.662	
575					95%	% t UC	L (Assu	umes r	normality)	18.06								95%	% H-S	tat UCL	50.26	
576					DI	L/2 is	not a re	ecomm	ended m	ethod, prov	vide	d for com	parisons	s and h	nistoric	al rea	sons	3				
577																						
578										etric Distrib												
579						Dete	cted Dat	ita app	ear Appr	oximate No	orma	l Distribu	ited at 5°	% Sigr	nificano	ce Lev	vel					
580																						
581								NE0/ ::-	4 (0 1 := :	Suggeste	ed UC	CL to Use)									
582							9	95% KI	M (t) UCL	17.99												
583					\		ha	.II.a		imant- /						_£ .1.	005					4
584		1.4	/b = :-							imate (e.g.									- i- r	ralio		
585		V۱	men a	applica	adie, it	. IS SU(ygested	i to use	a UCL b	ased upon	a dis	SUIDUTION	(e.g., ga	ırıma)	passin	ig bot	n GC	ır test	s in P	IOUCL		
586		Note	2. C.1.	idee+i e	ne ro	nardin	a tho oo	alectic	of a OEO	6 UCL are p	nrov	idad ta ba	aln the	car to 1	salaat t	ho m	net a	nnron	iata N	5% LICI		_
587		INULE	. oug	yy c sii0	nio IE(sed upon d								hhiohl	iale 9	J /0 UCL		
588		The	ase re	COmm	nendat					sea upon a Ilts of the si								hle an	nd I മമ	(2006)		-
589	Н									orld data s											 an.	-
590	•			aiau	5.1010		1101	55401	toai V	. Jila data e	,	.o. additi	J. IJI 11 ISI	9.11.111	2 4001 1	ay v		.5 50116	Juit U			-
591																						+
592 503	Total Diss	olved	l Solid	ds																		-
593		J																				-
594																						

595	Α		В		С		D)	E		F Genera	G I Statistics	Н		l			J	上	<u></u>	K	L	
596	T . IN												Number of Distinct Observations								14		
597													Number of Missing Observations 0									0	
598							440000		Mean 1115000								1115000						
599									Max	imum	1800000		Median 1200000								1200000		
600	SD 464707																	Std.	Erro	or of	Mean	103912	
601	Coefficient of Variation 0.417												Skewness -0.0102							-0.0102			
602																						1	
603											Normal	GOF Test											
604						Sh	napiro '	Wilk T	est St	atistic	0.924			S	hapiro \	Wilk	(GO	F Tes	st				
605	50/ Ob assista Milla Ositi a 1 Valua 0.005												Data ap	ppear	Norma	al at	5% 5	Signifi	can	ce L	.evel		
606	Lillioforo Toot Statistic 0 122												Lilliefors GOF Test										
607						5%	% Lillie	fors C	ritical '	Value	0.192		Data ap	ppear	Norma	al at	5% 5	Signifi	can	ce L	evel		
608									Data	appe	ar Normal a	at 5% Signific	ance Leve	el									
609																							
610										As	suming No	rmal Distribu	tion										
611					95%	% Nor	rmal U	CL					95	5% U	CLs (Ad	djust	ted fo	or Ske	ewn	ess))		
612	95% Student's-t UCL 1294									1294677			95	% Adjus	sted	d-CL7	T UCL	_ (C	hen-	1995)	1285667		
613														95	5% Mod	dified	d-t U	CL (Jo	ohn	son-	1978)	1294638	
614											I.											1	
615											Gamma	GOF Test											
616								A-D T	est St	atistic	0.608		And	derso	n-Darlir	ng G	Gamr	na G0	OF T	Test			
617							5%	A-D C	ritical	Value	0.745	Detecte	ed data app	oear C	amma	Dis	tribu	ted at	5%	Sig	nificar	ice Level	
618								K-S T	est St	atistic	0.174		Kolm	ogoro	ov-Smir	rnov	Gan	nma (GOF	- Te	st		
619							5%	K-S C	ritical '	Value	0.194	Detecte	ed data app	oear C	amma	Dis	tribu	ted at	: 5%	Sig	nificar	ice Level	
620							Det	ected	data a	ppear	r Gamma D	istributed at	5% Signific	cance	Level								
621																							
622											Gamma	Statistics											
623									k hat (MLE)	5.305					k st	tar (b	oias co	orre	cted	MLE)	4.543	
624								Thet	ta hat (MLE)	210175				Thet	ta st	tar (b	oias co	orre	cted	MLE)	245451	
625								n	u hat (MLE)	212.2						nu s	star (b	ias	corre	ected)	181.7	
626						ML	E Mea	n (bia	s corre	ected)	1115000					N	MLE	Sd (b	ias	corre	ected)	523142	
627														Ap	proxima	ate (Chi S	Square	e Va	alue	(0.05)	151.5	
628					Α	djust	ted Lev	vel of	Signific	cance	0.038					Adj	uste	d Chi	Squ	jare '	Value	149.4	
629																							
630										Ass	suming Ga	mma Distribu	ition										
631	(95% Ap	pprox	imate	e Gar	nma	UCL (ı	use wl	hen n>	=50))	1337069		95%	Adjus	ted Ga	mm	a UC	CL (us	e w	hen	n<50)	1356546	
632											ı												
633											Lognorm	al GOF Test											
634						Sh	napiro '	Wilk T	est St	atistic	0.904		Sh	hapiro	Wilk L	.ogn	orma	al GO	F T	est			
635					59	% Sh	apiro \	Nilk C	ritical '	Value	0.905		Data No	lot Lo	gnorma	l at	5% S	Signific	can	ce L	evel		
636							Lillie	fors T	est St	atistic	0.191			Lillief	ors Log	gnor	rmal	GOF	Tes	at .			
637						5%	% Lillie	fors C	ritical '	Value	0.192		Data app	oear L	ognorm	nal a	at 5%	Signi	ifica	ınce	Level		
638							D)ata a	ppear	Appro	ximate Log	normal at 5%	် Significar	nce L	evel								
639																							
640											Lognorm	al Statistics											
641						N	/linimu	m of L	ogged	Data	12.99						М	lean o	of lo	gged	d Data	13.83	
642						М	laximu	m of L	ogged	Data	14.4							SD o	of lo	gged	d Data	0.473	
643																							
644										Assu	uming Logr	ormal Distrib	ution										
645									95% H	I-UCL	1404809				90	% C	Cheby	yshev	(M)	VUE) UCL	1493276	
646					9	5% C	Chebys	shev (I	MVUE)	UCL	1660278				97.5	% C	Cheby	yshev	(M)	VUE) UCL	1892070	
647					9	9% C	Chebys	shev (I	MVUE)) UCL	2347380												
648											1	1										1	
																			_				

	Α	В	С	D	E	F	G	Н	I	J	K	L				
649		Nonparametric Distribution Free UCL Statistics														
650				Data appear	r to follow a	Discernible D	Distribution a	t 5% Signific	cance Level							
651																
652					Nonpa	rametric Dist	ribution Free	UCLs								
653																
654																
655	0EV Hall's Poststran LICI 1200671 0EV Paraentile Poststran LICI 1276															
656			Ç	95% BCA Bo	otstrap UCL	1283500										
657	90% Chebyshev(Mean, Sd) UCL 1426735 95% Chebyshev(Mean, Sd) UCL 156794															
658			97.5% Ch	ebyshev(Mea	an, Sd) UCL	1763928			99% Ch	ebyshev(Mea	an, Sd) UCL	2148908				
659																
660						Suggested	UCL to Use									
661				95% Stud	dent's-t UCL	1294677										
662																
663	N	lote: Sugges	stions regard	ing the selec	tion of a 95%	6 UCL are pro	ovided to help	p the user to	select the m	ost appropria	ate 95% UCL					
664	Recommendations are based upon data size, data distribution, and skewness.															
665		These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).														
666	Hov	wever, simul	lations result	s will not cov	er all Real W	/orld data set	ts; for additio	nal insight th	ne user may v	want to consi	ult a statistici	an.				
667																
668		Note: For	highly negat	ively-skewed	data, confic	dence limits (e.g., Chen, 、	Johnson, Lo	gnormal, and	i Gamma) m	ay not be					
669			reliable. (Chen's and J	ohnson's me	thods provid	le adjustmen	nts for posity	ely skewed o	lata sets.						
670																

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