

Attachment B5.G
SEDIMENTATION BASIN SAMPLING AND ANALYSIS PLAN
WAYNE DISPOSAL, INC., SITE #2 MID 048 090 633

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SEDIMENTATION BASIN SAMPLING AND ANALYSIS PLAN

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1.0 INTRODUCTION

This Sedimentation Basin Sampling and Analysis (SB SAP) plan identifies the procedures to be used for monitoring sediment samples from the two sedimentation basins at Wayne Disposal, Inc. (WDI), Site 2 designated as the north sedimentation basin (NSB) and the south sedimentation basin (SSB), and if necessary, the north sedimentation basin extension (NSBE) and the south sedimentation basin expansion (SSBE)). These sedimentation basins receive on-site surface water (storm water) run-off primarily from unpaved areas and final cover systems of the facility via a network of open ditches and subsurface pipes. Water collected in the NSB is pumped on demand into a ditch system that flows into the SSB. The SSBE provides additional storage prior to the water entering the SSB. The NSBE only receives water when the water level in the NSB reaches a high level, thus is overflow protection.

All surface water collected in the sedimentation basins is treated by sedimentation, filtration and activated carbon adsorption prior to discharge to Quirk Drain. The effluent from this treatment process is discharged into Quirk Drain in accordance with a National Pollutant Discharge Elimination System (NPDES) permit. This monitoring program evaluates engineering controls and operational procedures employed by WDI to detect an on-site release of hazardous waste or hazardous waste constituents as early as possible and allow WDI to initiate efforts to locate and control the source and prevent an off-site release.

The monitoring program described in this SB SAP is designed to monitor the chemical quality of the sediments that have accumulated in the bottom of each basin over time. Monitoring the composition of certain parameters within the sediment is done to determine if concentrations are increasing over time which could indicate that hazardous waste or hazardous waste constituents are present. In addition to describing the monitoring program, the SB SAP prompts notification and response actions that WDI must take if an apparent or confirmed significant increase in a monitored parameter occurs.

2.0 REVISION

WDI may revise this SB SAP and submit the revised plan to the Michigan Environment, Great Lakes and Energy's (EGLE), Material Management Division (MMD), for review and approval prior to implementation.

3.0 SAMPLE LOCATIONS

Each sedimentation basin is divided into six sections as shown in Figures 1 and 2 found in Attachment A for the SSB, SSBE, NSB and NSBE, respectively. The NSB and SSB are the primary monitoring locations of this plan. One grab sample is collected at random locations within each section of the basins during each sampling event. In the event of a confirmed statistical exceedance that could indicate impact to the sediments, the SSBE and the NSBE will

also be sampled. The locations for each sampling point are to be measured using a GPS or equivalent method and the coordinates listed on the sample log found on Figure 3 included in this plan.

4.0 SAMPLE FREQUENCY

The annual sampling event will include the SSB and NSB and should be scheduled in the spring at approximately the same time each year unless water elevations impede the sampler's ability to collect samples. The SSBE and NSBE will only be sampled in the event of a confirmed statistically significant increase (CSSI) in their respective sedimentation basins.

5.0 SAMPLE COLLECTION

For each basin, a grab sample is to be collected from each section of each basin shown in Figures 1 and 2. In addition, a representative composite sample from each basin is to be created by combining equal portions from each grab sample from the basin. Sufficient volume of sediment must be collected at each grab sample location such that there is adequate volume to 1) perform the required grab sample analysis, 2) contribute a portion to the composite sample and 3) have enough left over sample to be used by the laboratory for a confirmation of an apparent statistically significant increase of PCBs, if necessary. Confirmation procedures are specified in Section 8.0 of this document.

The individual grab samples from each section of each basin are to be collected from a small rowboat utilizing a Ponar grab-type sampler or an auger sampler with an extension. The person conducting the sampling will position the boat at one of the sampling locations, lower the sampling device and retrieve a sample from the upper portion of the sediment. The sample will then be removed from the sampler and placed directly into the appropriate container using a clean Teflon hand trowel. The composite sample from each respective basin is to be collected by placing equal volumes of collected sediment from each individual grab sample location within the respective basin into a stainless-steel bowl or disposable foil pan. After equal portions from all grab sample locations from the respective basin have been collected and placed into the bowl/pan, the sediment in the bowl is to be gently mixed to homogenize the sample, and then placed into an appropriate container.

Clean protective gloves must be worn during sample collection and clean gloves must be used at each sample location. Care should be always taken when handling the samples to avoid sample cross-contamination. Each sample container must be labeled with the sampling location, the time and date of the sampling event, and the sampler's initials. The sample collection log (Figure 3) is to be filled out at each sampling location and any unusual conditions (e.g., odors, sheens) encountered are to be noted. In addition, a chain of custody (COC) form is to be filled out for each sampling event. The COC is to be filled out fully for each sample submitted for analysis and each person handling the samples must sign and date the form. When the samples are delivered to the laboratory and the laboratory has signed for their receipt, a copy of this form is to be retained on site in the Environment, Health and Safety (EHS) Department records. After collection, the samples are to be stored in a clean cooler containing ice or ice packs. The coolers containing samples are to be stored in a secure location, until being transported to the laboratory.

All non-dedicated sampling equipment is to be thoroughly cleaned and decontaminated between sample locations by scrubbing with a brush and rinsing with de-ionized water to remove all visible soil/sediment material.

Field Quality Assurance/Quality Control samples collected for each sampling event, including confirmation sampling events, include:

- One trip blank for each cooler utilized for storing and shipping PCB samples. The trip blank is to be analyzed for PCBs.
- One blind duplicate for each sampling event. The duplicate sample is to be analyzed for the identical set of parameters as the samples. Sediment collected is placed in a clean container and homogenized prior to filling an identical set of sample containers at a given location and submitting them for an identical analysis.
- One equipment blank per sampling day for each piece of non-dedicated sampling equipment utilized in the sampling process (i.e., sample collection tool/ponar and/or composite sample collection bowl/foil pan). The equipment blank is to be collected by pouring clean de-ionized water over the decontaminated piece of equipment and collecting the rinsate in the appropriate container for analysis. The equipment blank is to be analyzed for the identical set of parameters as the samples.

6.0 SAMPLE ANALYSIS

Each grab sample is to be analyzed for the parameters listed in Table 1 identified as grab sample parameters. The analytical methods and method detection limits specified are also listed on Table 1. Each composite sample from each basin is to be analyzed for all the PCB aroclors listed on Table 1 using the analytical methods and method detection limits specified. In addition, all grab samples must also be extracted for PCB analyses but only analyzed, if necessary, as confirmation samples per Section 8.0. In some cases, the laboratory may not attain the method detection limits specified due to sample dilutions and matrix effects. If this is the case, the laboratory report must include an explanation for not achieving the specified method detection limits.

The laboratory quality control/quality assurance manual (QA/QC Manual) describing the required internal policies, guidelines, and procedures of any WDI contract lab is contained in the Groundwater Sampling and Analysis Plan (GW SAP). WDI is to use this QA/QC Manual in evaluating the QA/QC standard operating procedures of any contract laboratory utilized for the purposes of this SB SAP and ensure that the laboratory employs generally acceptable practices that meet the specifications of the QA/QC Manual in the GW SAP.

7.0 DATA EVALUATION

The analytical data from the sedimentation basin samples is to be evaluated as follows:

- For a PCB composite sample, an apparent statistically significant increase (ASSI) has occurred if the total concentration of the PCB compounds listed in Table 1 is greater than or equal to 1 mg/kg on a dry-weight basis.
- For metals, phenols, and total and amenable cyanide, the data will be evaluated using graphical trend analysis. An ASSI for any parameter has occurred if increasing concentrations are noted for any individual parameter in four consecutive sampling

events and/or a ten-fold increase in concentration is noted in any parameter between sampling events in any of the individual grab samples. If four consecutive samples show increasing concentrations, WDI must determine the difference between the first and fourth sample concentrations and determine if this quantity is greater than 10 percent of the mean of the concentration of those four measurements for that parameter. If the difference is greater than 10 percent of the mean, then an ASSI is reported. If the difference is less than 10 percent of the mean, then no ASSI will be reported.

8.0 RESPONSE ACTIONS

In the event of an ASSI, WDI is to verbally notify MMD staff immediately, give them an opportunity to split confirmation samples, and implement the procedures identified below to confirm the ASSI. Confirmation samples must be collected and submitted for analysis within 7 days of providing notification of an ASSI, unless water levels prevent sampling.

- For the composite PCB samples, procedures to determine if a CSSI has occurred are as follows. The additional grab samples collected in each section of the basin that were sent to the lab and extracted are to be analyzed for PCBs. If any of the grab samples for which PCBs are detected are above the action level defined in Section 7.0 (i.e., the ASSI is repeated), then a CSSI will have been confirmed for that section of the basin that the grab sample represented.
- For the metals, total and amenable cyanide, and phenols grab samples, procedures to determine if a confirmed statistically significant increase (CSSI) has occurred are as follows. Any section of the basins for which an ASSI is reported for metals, total and amenable cyanide, and/or phenols is to be resampled by collecting four additional samples within the section of the basin with the ASSI. If the concentrations in two of the four confirmation samples are equal to or greater than the original sample, then the increase is a confirmed statistically significant increase (CSSI).

In the event an ASSI is not repeated, WDI will resume routine monitoring. In the event an ASSI is repeated it is considered a confirmed statistically significant increase (CSSI). After a CSSI has occurred, WDI must notify MMD in accordance with the General Operating Conditions of the Operating License for reporting noncompliance that may endanger human health or the environment. Further, within 30 days of becoming aware of a CSSI, WDI must implement the following actions depending upon the CSSI parameter and the CSSI location:

- Collect samples from the respective sedimentation basin extension experiencing the CSSI as specified by Section 5.0, unless water levels prevent sampling
- For a CSSI for metals, phenolics, total cyanide, or amenable cyanide, submit a work plan for MMD review and approval to delineate the extent of contamination in the basin, identify and eliminate the source of the contamination, and determine if concentrations are sufficiently elevated to require removal of sediments from the impacted basin. Guidance regarding determining whether removal of contaminated sediments is required is provided in Attachment 3 of the Remediation and Redevelopment Division's (RRD) Operational Memorandum No 4.
- For a PCB CSSI, submit a work plan to delineate and/or remove sediments from the impacted basin for the MMD review and approval.

WDI may voluntarily remove sediments from any sedimentation basin without MMD approval if WDI verbally notifies MMD, staff of the removal at least five days in advance of the removal and performs the removal in compliance with all applicable laws. In the event WDI chooses to voluntarily remove sediments from either basin in response to an ASSI or CSSI, all source investigation and removal requirements defined above shall still be implemented.

9.0 REPORTING REQUIREMENTS

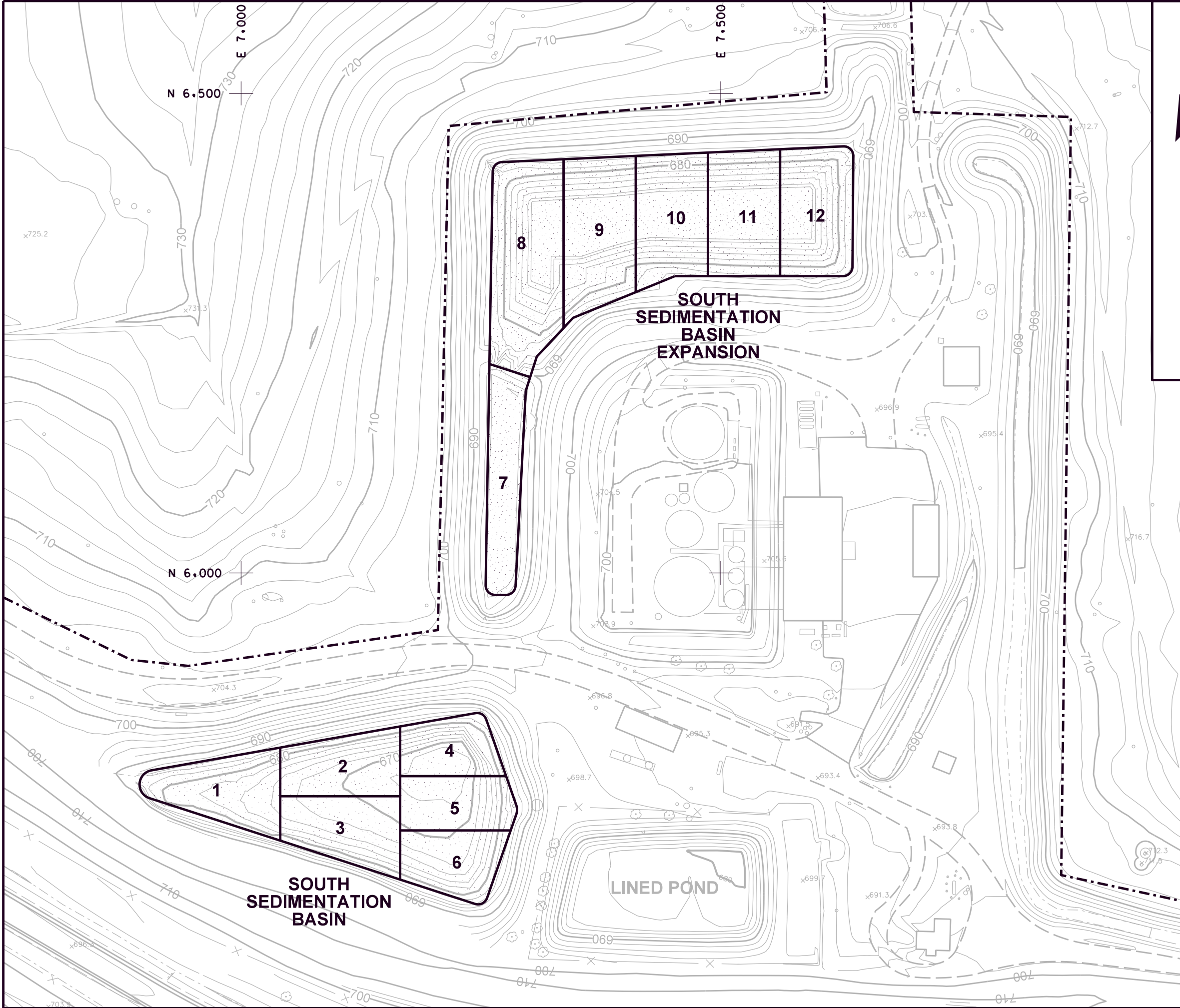
A final SB SAP Report (Report) documenting the annual sampling under this plan, including the data received from the laboratory, is to be submitted to the MMD within 60 days of each sampling event. All Reports must include a narrative description of the sampling event, a map of each respective basin showing each location sampled, copies of the sampling logs, a tabular summary and discussion of the data, the trend analysis calculations and discussion of the trend analysis results, a description of any ASSI and/or CSSI, as applicable, and any resampling conducted, and/or any additional actions required and/or recommended because of the Report findings. In addition to this report, an annual summary report of sedimentation basin monitoring results must be submitted to MMD by March 1 of the following year

10.0 RECORD KEEPING REQUIREMENTS

All analytical data and Reports generated under this SB SAP must be stored on site within the EHS filing system and be available to EGLE staff for inspection.

Attachment A: Sedimentation Basin Figures

TIME PLOTTED: 10:28:16 AM
DATE PLOTTED: 9/22/2021
FILENAME: Z:\shared\proj\projects\Commercial\US Ecology\WDI\CAD\Site\Monitoring Plans\SBMP FIGURE 1 SSB.dgn



N

LEGEND

OLD CELL BOUNDARY

N 6500

+

GRID COORDINATES

710

EXISTING CONTOUR (2 FT INTERVAL)

x

FENCE

1

SAMPLING SECTOR

NOTES:

1. DATE OF AERIAL TOPO: DECEMBER 10, 2020.

2. 2' CONTOURS OF BOTTOM OF BASIN ARE FROM SITE2_BASE TOPO 10-21-08.DWG

SCALE

0'

50'

100'

PROJECT:

WAYNE DISPOSAL, INC. SITE NO. 2
VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

SHEET TITLE:

**SOUTH SEDIMENTATION BASIN
MONITORING SAMPLE SECTORS**

cti

PROJECT NO: 1218070008

SCALE: 1" = 100'

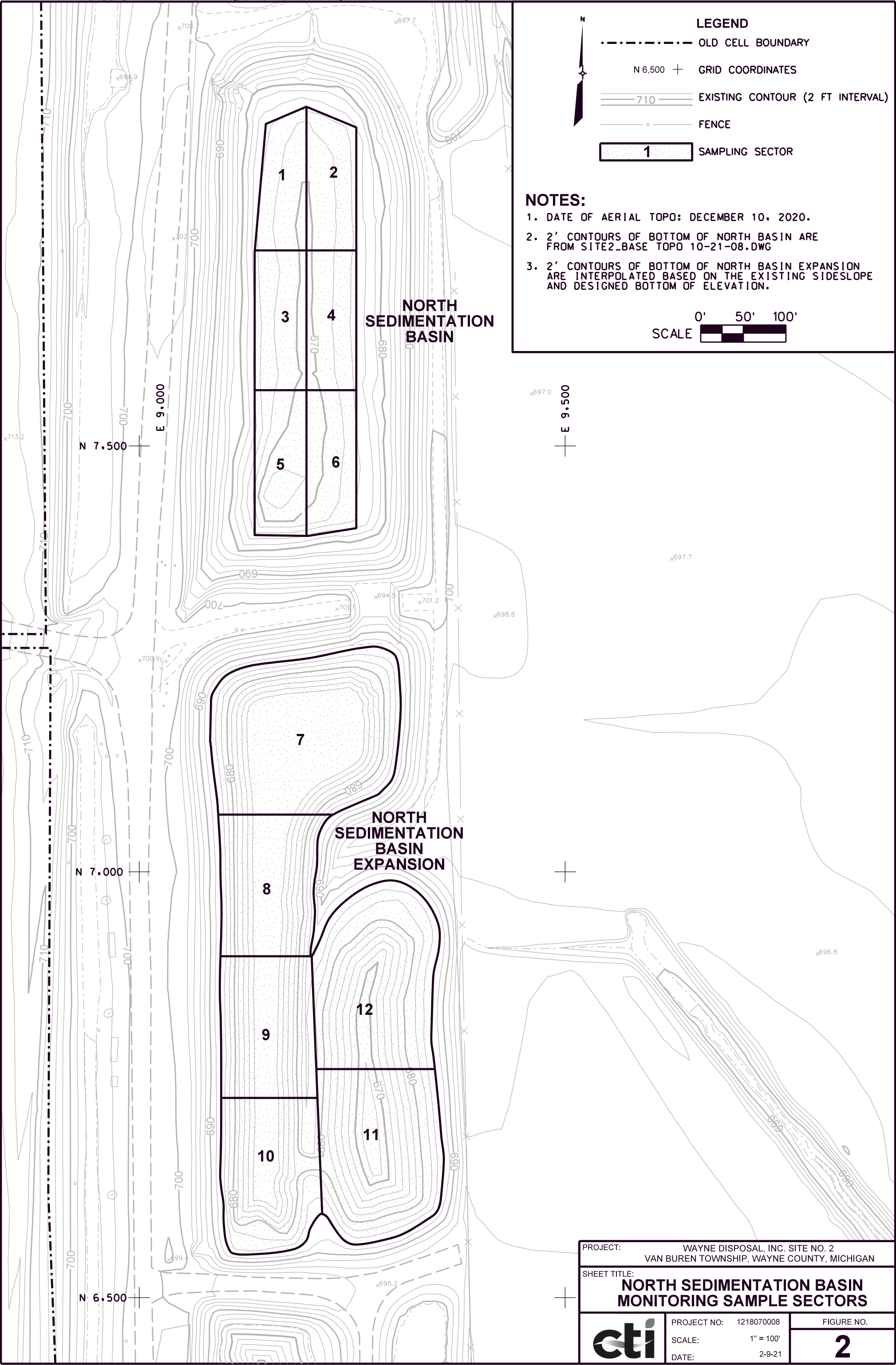
DATE: 2-9-21

FIGURE NO.

1

DRAWING SIZE: 11"x17"

DRAWING SIZE: 11"x17"



Attachment B: Sample Log

Figure 3. Sample Collection Log for Sediments - WDI Site #2

| | | |
|-------------------------------------------|-------------------------|---------------------|
| <u>Sample ID: (Basin, Sector #)</u> | <u>Sample Date:</u> | <u>Sample Time:</u> |
| <u>Sample Location: (x,y coordinates)</u> | <u>Sampling Method:</u> | <u>Sampler:</u> |
| <u>Sample Description/Comments*:</u> | | |

| | | |
|-------------------------------------------|-------------------------|---------------------|
| <u>Sample ID: (Basin, Sector #)</u> | <u>Sample Date:</u> | <u>Sample Time:</u> |
| <u>Sample Location: (x,y coordinates)</u> | <u>Sampling Method:</u> | <u>Sampler:</u> |
| <u>Sample Description/Comments*:</u> | | |

| | | |
|-------------------------------------------|-------------------------|---------------------|
| <u>Sample ID: (Basin, Sector #)</u> | <u>Sample Date:</u> | <u>Sample Time:</u> |
| <u>Sample Location: (x,y coordinates)</u> | <u>Sampling Method:</u> | <u>Sampler:</u> |
| <u>Sample Description/Comments*:</u> | | |

| | | |
|-------------------------------------------|-------------------------|---------------------|
| <u>Sample ID: (Basin, Sector #)</u> | <u>Sample Date:</u> | <u>Sample Time:</u> |
| <u>Sample Location: (x,y coordinates)</u> | <u>Sampling Method:</u> | <u>Sampler:</u> |
| <u>Sample Description/Comments*:</u> | | |

* Include any unusual characteristics such as color, sheen, odor, etc.

Attachment C: Table 1 Sample Parameters

Table 1. Sedimentation Basin monitoring Parameters

| Grab Sample Parameters | RL¹ (mg/Kg)² | Approved Method³ |
|------------------------------------|-------------------------------------------|------------------------------------|
| Arsenic | 0.5 | 6020A |
| Barium | 1 | 6020A |
| Cadmium | 0.2 | 6020A |
| Chromium (total) | 2 | 6020A |
| Cobalt | 0.5 | 6010C |
| Copper | 1 | 6020A |
| Iron | 5 | 6010C |
| Lead | 1 | 6010/6020 |
| Mercury | 0.05 | 7471B |
| Molybdenum | 1 | 6010C |
| Nickel | 1 | 6010C |
| Selenium | 0.2 | 6020A |
| Silver | 0.1 | 6020A |
| Vanadium | 1 | 6020A |
| Zinc | 1 | 6020A |
| Total Phenolics | 0.4 | 9065 |
| Total Cyanide | 0.1 | 9014 |
| Amenable Cyanide | NA | 9014 |
| Composite Sample Parameters | | |
| PCB-1016 | 0.1 | 8082A |
| PCB-1221 | 0.1 | 8082A |
| PCB-1232 | 0.1 | 8082A |
| PCB-1242 | 0.1 | 8082A |
| PCB-1248 | 0.1 | 8082A |
| PCB-1254 | 0.1 | 8082A |
| PCB-1260 | 0.1 | 8082A |

1 - Target Reporting Limits from OWMRP-111/115-8

2 - Dry Weight Basis

3 - Test Methods For Evaluating Solid Waste, USEPA SW-846