



Rose & Westra  
A Division of GZA



## MEMORANDUM

To: Abby Hendershott, MDEQ

From: Lori Powers, Rose & Westra, a Division of GZA GeoEnvironmental, Inc.

Date: January 4, 2019

File No.: 16.0062335.52 Task 003

Re: Wolverine World Wide, Inc. (Wolverine) – House Street Disposal Area  
Monthly Progress Report

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This MDEQ Monthly Progress Report (MPR) is being submitted on behalf of Wolverine. This MDEQ MPR is completed as agreed upon in Mr. John Byl's July 9, 2018 letter entitled *Response to May 29 Correspondence regarding Tannery Meeting Summary and Action Items*.

This progress report also includes information to supplement the December 11, 2018 U.S. EPA MPR (attached).

## INVESTIGATION ACTIONS

During this reporting period, R&W/GZA did not complete any additional on-Site investigative tasks but did continue to receive data from the EPA RWP implementation. The associated tasks summary, mapping, boring logs, and non-PFAS data are outlined in the attached U.S. EPA MPR.

Additionally, R&W/GZA resumed and completed hollow-stem auger drilling at off-site locations to continue the delineation of the extent of PFOS+PFOA in groundwater. Wells were drilled and set at the PMW-26 location. The boring log for this location is attached. Additionally, an updated off-site wells map is included (Figure 1). However, note that we are pending the survey information for MW-20, MW-25, and MW-26 locations and they are only approximate. Lastly, the vertical aquifer profiling data from PMW-26 is summarized on Table 4.

## ANALYTICAL DATA RECEIVED

Non-PFAS constituents from the on-Site RWP implementation are summarized in the attached U.S. EPA MPR. PFAS on-Site soil, groundwater, and surface water analytical results received since November 22, 2018 through December 28, 2018 are summarized in Tables 1 through 3, respectively.

The tables include Michigan's generic residential cleanup criteria (GRCC) for selected exposure pathways. They are provided for reference only, not to imply they will be the basis of any future removal, remediation, or closure actions.

To the extent that samples listed in these tables contain or consist of waste, in whole or in part, the comparison to the MDEQ Part 201 generic cleanup criteria does not imply applicability of the criteria because the physical and chemical properties of the waste are

GEOTECHNICAL  
ENVIRONMENTAL  
ECOLOGICAL  
WATER  
CONSTRUCTION  
MANAGEMENT

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expected to be different from the default values or assumptions used to derive the Generic Soil Cleanup Criteria in the Cleanup Criteria Requirements for Response Activity Rules (R299.1-299.50).

The lab reports and geographic information system (GIS) data for these samples have been submitted to the MDEQ through AECOM GIS maintenance updates.

## **MAPPING**

Other than the off-site permanent well map previously mentioned, no mapping is included in this update as no changes have occurred to the Site investigation maps since the last update.

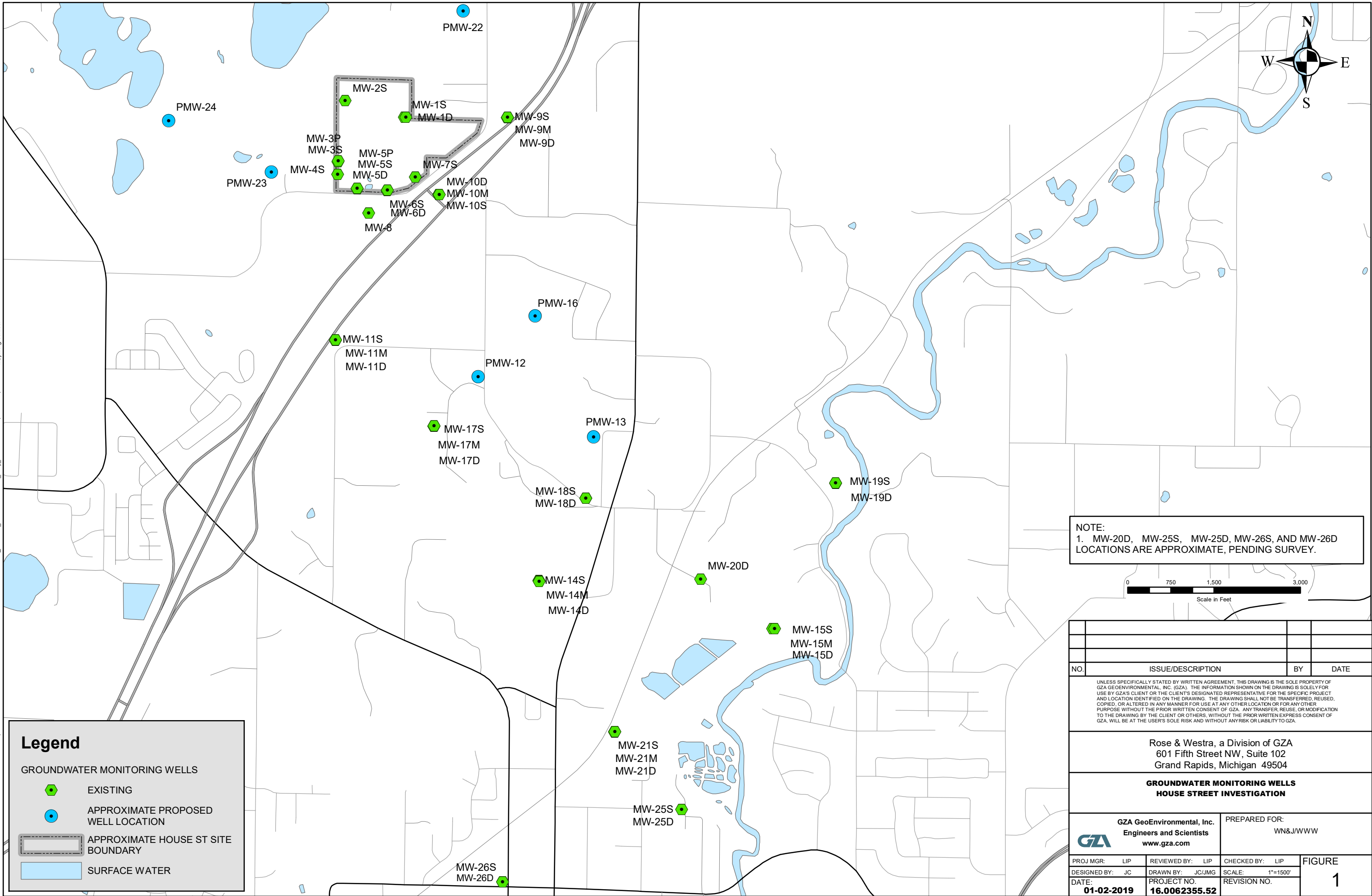
## **ANTICIPATED ACTIONS AND SCHEDULE FOR NEXT REPORTING PERIOD**

Pending access and utility clearance, additional off-site drilling may be conducted during the next reporting period.

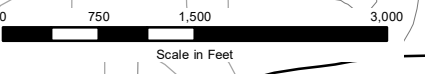
No work is anticipated on-Site during the next reporting period. However, the final data from the EPA RWP was received on December 26, 2018. This triggers the 60-day reporting period. As such, the draft report for the on-Site investigation is due to the EPA and MDEQ on February 25, 2019.

J:\62000\623xx\62335.52 - House St Pre-Inv\MDEQ Updates\January 4 2019 Update\WWW - House Street - PFAS Update December2018 010142019 - F.docx

© 2019 - GZA GeoEnvironmental, Inc. J:\16.xx Grand Rapids\16.0062355\16.0062355.52\MapData\_GIS\GIS\_CADD\HouseStreet\_Only\_ParcelData.mxd, 1/2/2019, 8:45:51 AM, julia.groenier




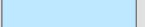


**NOTE:**  
 1. MW-20D, MW-25S, MW-25D, MW-26S, AND MW-26D LOCATIONS ARE APPROXIMATE, PENDING SURVEY.



**Legend**

GROUNDWATER MONITORING WELLS

-  EXISTING
-  APPROXIMATE PROPOSED WELL LOCATION
-  APPROXIMATE HOUSE ST SITE BOUNDARY
-  SURFACE WATER

NO.	ISSUE/DESCRIPTION	BY	DATE
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Rose & Westra, a Division of GZA 601 Fifth Street NW, Suite 102 Grand Rapids, Michigan 49504			
<b>GROUNDWATER MONITORING WELLS                  HOUSE STREET INVESTIGATION</b>			
GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: WN&J/WWW	
PROJ MGR: LIP	REVIEWED BY: LIP	CHECKED BY: LIP	<b>FIGURE 1</b>
DESIGNED BY: JC	DRAWN BY: JC/JMG	SCALE: 1"=1500'	
DATE: 01-02-2019	PROJECT NO. 16.0062355.52	REVISION NO.	



**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-001	HS-SB-016	HS-SB-402	HS-SB-421	HS-SB-425	HS-SB-434	HS-SB-508	HS-SB-518	HS-SB-524	HS-SB-529	HS-SB-529-1	HS-SB-529-1	HS-SB-529-2	HS-SB-529-2	HS-SB-529-3	HS-SB-529-3	HS-SB-529-4
Sample Name			HS-SB-001(10-13)	HS-SB-016(10-13)	HS-SB-402 (6-10)	HS-SB-421 (8-10)	HS-SB-425 (8-10)	HS-SB-434 (3-5)	HS-SB-508(8-10)	HS-SB-518 (8-15)	HS-SB-524 (6-9)	HS-SB-529 (11-12)	HS-SB-529-1 (0-2)	HS-SB-529-1 (12-14)	HS-SB-529-2 (0-2)	HS-SB-529-2 (12-14)	HS-SB-529-3 (0-1)	HS-SB-529-3 (11-12)	HS-SB-529-4 (6-7)
Depth Interval			10 - 13	10 - 13	6 - 10	8 - 10	8 - 10	3 - 5	8 - 10	8 - 15	6 - 9	11 - 12	0 - 2	12 - 14	0 - 2	12 - 14	0 - 1	11 - 12	6 - 7
Sample Date			11/01/2018	11/01/2018	10/29/2018	10/29/2018	10/29/2018	10/29/2018	10/30/2018	11/02/2018	10/29/2018	10/25/2018	10/22/2018	10/22/2018	10/22/2018	10/22/2018	10/23/2018	10/23/2018	10/23/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<730	<21	<12	<3,600	<720	<11	<200	<260	<190	<19	<10	<11	<10	<9.8	<9.8	<12	<9.9
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<730	<21	<12	<3,600	<720	<11	<200	<260	<190	<19	<10	<11	<10	<9.8	<9.8	<12	<9.9
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	2,300	200	43	<720	1,500	170	380	750	540	<3.8	<2.1	<2.2	<2	<2	<2	<2.3	<2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<150	<4.3	<2.4	<720	<140	<2.1	<40	<53	<37	<3.8	<2.1	<2.2	<2	<2	<2	<2.3	<2
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorobutanoic acid (PFBA)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorodecanoic acid (PFDA)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorododecanoic acid (PFDoDA)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluoroheptanoic acid (PFHpA)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorohexanoic acid (PFHxA)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorononanoic acid (PFNA)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorooctane sulfonamide (FOSA)	NA	NA	<370	27	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<b>20,000</b>	<b>2,500</b>	<b>760</b>	<b>68,000</b>	<b>41,000</b>	<b>32</b>	<b>8,300</b>	<b>17,000</b>	<b>7,900</b>	<9.4	<b>33</b>	<b>26</b>	<5.1	<4.9	<b>13</b>	<b>16</b>	<5
Perfluorooctanoic acid (PFOA)	NA	10,000	<370	12	<6	<1,800	<360	<5.3	<100	370	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluoropentanoic acid (PFPeA)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorodecane sulfonic acid (PFDS)	NA	NA	390	28	<6	<1,800	<360	5.6	130	150	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluorononane sulfonic acid (PFNS)	NA	NA	<370	19	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<370	<11	<6	<1,800	<360	<5.3	<100	<130	<93	<9.4	<5.2	<5.4	<5.1	<4.9	<4.9	<5.8	<5

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 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-529-4	HS-SB-529-5	HS-SB-529-5	HS-SB-529-6	HS-SB-529-6	HS-SB-534	HS-SB-582	HS-SB-590	HS-SB-590	HS-SB-591	HS-SB-591	HS-SB-592	HS-SB-592	HS-SB-593	HS-SB-593	HS-SB-594	HS-SB-594
Sample Name			HS-SB-529-4 (9-10)	HS-SB-529-5 (0-1)	HS-SB-529-5 (11-12)	HS-SB-529-6 (0-1)	HS-SB-529-6 (11-12)	HS-SB-534 (8-10)	HS-SB-582(7-8)	HS-SB-590(0-1)	HS-SB-590(8-9)	HS-SB-591(7-8)	HS-SB-591(16-17)	HS-SB-592 (0-1)	HS-SB-592 (10-11)	HS-SB-593 (6-7)	HS-SB-593 (12-13)	HS-SB-594 (4-5)	HS-SB-594 (8-9)
Depth Interval			9 - 10	0 - 1	11 - 12	0 - 1	11 - 12	8 - 10	7 - 8	0 - 1	8 - 9	7 - 8	16 - 17	0 - 1	10 - 11	6 - 7	12 - 13	4 - 5	8 - 9
Sample Date			10/23/2018	10/24/2018	10/24/2018	10/24/2018	10/24/2018	11/02/2018	10/30/2018	09/26/2018	09/26/2018	09/26/2018	09/26/2018	09/27/2018	09/27/2018	09/27/2018	09/27/2018	09/28/2018	09/28/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<10	<11	<9.4	<10	<10	<690	<8.6	<11	<12	<12	<11	<12	<11	<9.9	<9.8	<12	<10
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<10	<11	<9.4	<10	<10	<690	<8.6	<11	<12	<12	<11	<12	<11	<9.9	<9.8	<12	<10
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<2	<2.2	<1.9	<2.1	<2	820	<1.7	<2.2	<2.4	<2.3	<2.1	<2.4	<2.1	<2	<2	<2.3	<2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2	<2.2	<1.9	<2.1	<2	<140	<1.7	<2.2	<2.4	<2.3	<2.1	<2.4	<2.1	<2	<2	<2.3	<2
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorobutanoic acid (PFBA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorodecanoic acid (PFDA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorododecanoic acid (PFDoDA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluoroheptanoic acid (PFHpA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorohexanoic acid (PFHxA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorononanoic acid (PFNA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorooctane sulfonamide (FOSA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<5	<b>38</b>	<4.7	<b>7.1</b>	<5.1	<b>26,000</b>	<4.3	<5.5	<6.1	<5.8	<5.3	<b>14</b>	<5.3	<b>5.6</b>	<4.9	<5.8	<5.1
Perfluorooctanoic acid (PFOA)	NA	10,000	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluoropentanoic acid (PFPeA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluorononane sulfonic acid (PFNS)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<5	<5.5	<4.7	<5.2	<5.1	<340	<4.3	<5.5	<6.1	<5.8	<5.3	<5.9	<5.3	<4.9	<4.9	<5.8	<5.1

**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-595	HS-SB-595	HS-SB-596	HS-SB-596	HS-SB-597	HS-SB-597	HS-SB-598	HS-SB-598	HS-SB-598	HS-SB-601	HS-SB-601	HS-SB-603	HS-SB-603	HS-SB-603	HS-SB-603	HS-SB-604	HS-SB-604
Sample Name			HS-SB-595 (2-3)	HS-SB-595 (9-10)	HS-SB-596 (4-5)	HS-SB-596 (8-9)	HS-SB-597(0-1)	HS-SB-597(9-10)	HS-SB-598(4-5)	HS-SB-598(4-5)DUP	HS-SB-598(9-10)	HS-SB-601(7-9)	HS-SB-601(16-17)	HS-SB-603 (6-7)	HS-SB-603 (7-8)	HS-SB-603 (12-13)	HS-SB-603 (12-13)DUP	HS-SB-604(3-4)	HS-SB-604(7-8)
Depth Interval			2 - 3	9 - 10	4 - 5	8 - 9	0 - 1	9 - 10	4 - 5	4 - 5	9 - 10	7 - 9	16 - 17	6 - 7	7 - 8	12 - 13	12 - 13	3 - 4	7 - 8
Sample Date			09/28/2018	09/28/2018	10/01/2018	10/01/2018	10/02/2018	10/02/2018	10/31/2018	10/31/2018	10/31/2018	10/02/2018	10/02/2018	10/04/2018	10/04/2018	10/04/2018	10/04/2018	10/04/2018	10/04/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<11	<10	<9.6	<11	<12	<9.9	<11	<11	<9.9	<60	<9.9	<13	<12	<11	<11	<10	<14
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<11	<10	<9.6	<11	<12	<9.9	<11	<11	<9.9	<60	<9.9	<13	<12	<11	<11	<10	<14
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<2.2	<2	<1.9	<2.1	<2.4	<2	8.3	11	<2	76	3.3	<2.5	<2.3	<2.1	<2.1	<2	<2.9
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2.2	<2	<1.9	<2.1	<2.4	<2	<2.2	3.1	<2	<12	<2	<2.5	<2.3	<2.1	<2.1	<2	<2.9
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorobutanoic acid (PFBA)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorodecanoic acid (PFDA)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorododecanoic acid (PFDoDA)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluoroheptanoic acid (PFHpA)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorohexanoic acid (PFHxA)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorononanoic acid (PFNA)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	300	24	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorooctane sulfonamide (FOSA)	NA	NA	<5.4	<5.1	<4.8	<5.3	44	<4.9	150	150	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<b>6.7</b>	<5.1	<4.8	<5.3	<b>17</b>	<b>21</b>	<b>62</b>	<b>43</b>	<b>120</b>	<b>3,300</b>	<b>280</b>	<6.3	<5.8	<5.4	<5.3	<b>9.3</b>	<b>58</b>
Perfluorooctanoic acid (PFOA)	NA	10,000	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	6.6	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluoropentanoic acid (PFPeA)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	57	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluorononane sulfonic acid (PFNS)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<5.4	<5.1	<4.8	<5.3	<6	<4.9	<5.4	<5.4	<4.9	<30	<5	<6.3	<5.8	<5.4	<5.3	<5.1	<7.2

**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-605	HS-SB-605	HS-SB-606	HS-SB-606	HS-SB-607	HS-SB-607	HS-SB-608	HS-SB-608	HS-SB-609	HS-SB-609	HS-SB-610	HS-SB-610	HS-SB-611	HS-SB-611	HS-SB-612	HS-SB-612	HS-SB-613
Sample Name			HS-SB-605(12-13)	HS-SB-605(16-17)	HS-SB-606 (7-8)	HS-SB-606 (11-12)	HS-SB-607 (5-6)	HS-SB-607 (12-13)	HS-SB-608(6-7)	HS-SB-608(12-13)	HS-SB-609(8-9)	HS-SB-609(12-13)	HS-SB-610 (7-8)	HS-SB-610 (11-12)	HS-SB-611(9-10)	HS-SB-611(12-13)	HS-SB-612(7-8)	HS-SB-612(12-13)	HS-SB-613 (6-7)
Depth Interval			12 - 13	16 - 17	7 - 8	11 - 12	5 - 6	12 - 13	6 - 7	12 - 13	8 - 9	12 - 13	7 - 8	11 - 12	9 - 10	12 - 13	7 - 8	12 - 13	6 - 7
Sample Date			10/04/2018	10/04/2018	10/05/2018	10/05/2018	10/05/2018	10/05/2018	10/04/2018	10/04/2018	10/04/2018	10/04/2018	10/04/2018	10/04/2018	10/03/2018	10/03/2018	10/03/2018	10/03/2018	10/03/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<11	<10	<11	<11	<11	<9.9	<10	<11	<10	<13	<9.8	<10	<10	<11	<11	<11	<10
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<11	<10	<11	<11	<11	<9.9	<10	<11	<10	<13	<9.8	<10	<10	<11	<11	<11	<10
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<2.1	<2.1	<2.3	<2.2	<2.2	<2	<2.1	<2.1	<2	<2.6	<2	<2	<2.1	<2.2	<2.3	<2.1	<2.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2.1	<2.1	<2.3	<2.2	<2.2	<2	<2.1	<2.1	<2	<2.6	<2	<2	<2.1	<2.2	<2.3	<2.1	<2.1
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorobutanoic acid (PFBA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorodecanoic acid (PFDA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorododecanoic acid (PFDoDA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluoroheptanoic acid (PFHpA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorohexanoic acid (PFHxA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorononanoic acid (PFNA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorooctane sulfonamide (FOSA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<b>5.7</b>	<5	<6.5	<b>98</b>	<b>20</b>	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorooctanoic acid (PFOA)	NA	10,000	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluoropentanoic acid (PFPeA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluorononane sulfonic acid (PFNS)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<5.3	<5.2	<5.6	<5.4	<5.5	<4.9	<5.2	<5.4	<5	<6.5	<4.9	<5.1	<5.2	<5.5	<5.7	<5.3	<5.2



**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-613	HS-SB-614	HS-SB-614	HS-SB-615	HS-SB-615	HS-SB-616	HS-SB-616	HS-SB-616	HS-SB-617	HS-SB-617	HS-SB-618	HS-SB-618	HS-SB-618	HS-SB-619	HS-SB-619	HS-SB-620	HS-SB-620
Sample Name			HS-SB-613 (11-12)	HS-SB-614 (7-8)	HS-SB-614 (11-12)	HS-SB-615 (0-1)	HS-SB-615 (13-14)	HS-SB-616 (2-4)	HS-SB-616 (2-4) DUP	HS-SB-616 (12-14)	HS-SB-617 (1-3)	HS-SB-617 (5-6)	HS-SB-618 (2-3)	HS-SB-618 (2-3) DUP	HS-SB-618 (8-9)	HS-SB-619 (4-5)	HS-SB-619 (8-9)	HS-SB-620 (8-9)	HS-SB-620 (13-14)
Depth Interval			11 - 12	7 - 8	11 - 12	0 - 1	13 - 14	2 - 4	2 - 4	12 - 14	1 - 3	5 - 6	2 - 3	2 - 3	8 - 9	4 - 5	8 - 9	8 - 9	13 - 14
Sample Date			10/08/2018	10/05/2018	10/05/2018	10/24/2018	10/24/2018	10/25/2018	10/25/2018	10/25/2018	10/25/2018	10/25/2018	10/26/2018	10/26/2018	10/26/2018	10/26/2018	10/26/2018	10/25/2018	10/25/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<11	<11	<11	<14	<9.3	<12	<12	<9.7	<21	<12	<10	<12	<9.2	<11	<10	<12	<9.8
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<11	<11	<11	<14	<9.3	<12	<12	<9.7	<21	<12	<10	<12	<9.2	<11	<10	<12	<9.8
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<2.3	<2.2	<2.2	<2.8	<1.9	<2.4	<2.4	<1.9	<4.2	<2.4	<2.1	<2.4	<1.8	<2.3	<2	<2.3	<2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2.3	<2.2	<2.2	<2.8	<1.9	<2.4	<2.4	<1.9	<4.2	<2.4	<2.1	<2.4	<1.8	<2.3	<2	<2.3	<2
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorobutanoic acid (PFBA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorodecanoic acid (PFDA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorododecanoic acid (PFDoDA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	9.7	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluoroheptanoic acid (PFHpA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	16	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorohexanoic acid (PFHxA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorononanoic acid (PFNA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorooctane sulfonamide (FOSA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<5.7	<5.4	<5.5	<b>83</b>	<4.7	<b>82</b>	<b>76</b>	<4.9	<b>71</b>	<6	<b>55</b>	<b>51</b>	<4.6	<b>12</b>	<b>15</b>	<b>7</b>	<4.9
Perfluorooctanoic acid (PFOA)	NA	10,000	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	11	<4.9	19	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluoropentanoic acid (PFPeA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluorononane sulfonic acid (PFNS)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<5.7	<5.4	<5.5	<7.1	<4.7	<6.1	<5.9	<4.9	<10	<6	<5.2	<6.1	<4.6	<5.7	<5.1	<5.8	<4.9

**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-621	HS-SB-621	HS-SB-622	HS-SB-622	HS-SB-623	HS-SB-623	HS-SB-624	HS-SB-624	HS-SB-701	HS-SB-701	HS-SB-701	HS-SB-703	HS-SB-703	HS-SB-704	HS-SB-704	HS-SB-705	HS-SB-705
Sample Name			HS-SB-621 (1-2)	HS-SB-621 (8-9)	HS-SB-622 (3-4)	HS-SB-622 (10-11)	HS-SB-623 (0-2)	HS-SB-623 (8-10)	HS-SB-624 (0-1)	HS-SB-624 (16-17)	HS-SB-701(2-3)	HS-SB-701(2-3)DUP	HS-SB-701(9-10)	HS-SB-703(8-9)	HS-SB-703(14-15)	HS-SB-704 (7-8)	HS-SB-704 (11-12)	HS-SB-705 (3-4)	HS-SB-705 (9-10)
Depth Interval			1 - 2	8 - 9	3 - 4	10 - 11	0 - 2	8 - 10	0 - 1	16 - 17	2 - 3	2 - 3	9 - 10	8 - 9	14 - 15	7 - 8	11 - 12	3 - 4	9 - 10
Sample Date			10/29/2018	10/29/2018	10/29/2018	10/29/2018	10/29/2018	10/29/2018	10/29/2018	10/29/2018	10/29/2018	09/26/2018	09/26/2018	09/26/2018	09/26/2018	09/26/2018	09/27/2018	09/27/2018	09/27/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<13	<13	<9.8	<9.7	<10	<13	<12	<11	<12	<11	<11	<11	<12	<11	<11	<10	<12
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<13	<13	<9.8	<9.7	<10	<13	<12	<11	<12	<11	<11	<11	<12	<11	<11	<10	<12
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<2.7	<2.6	<2	<1.9	<2.1	<2.6	<2.4	<2.3	<2.4	<2.2	<2.1	<2.2	<2.3	<2.2	<2.1	<2	<2.4
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2.7	<2.6	<2	<1.9	<2.1	<2.6	<2.4	<2.3	<2.4	<2.2	<2.1	<2.2	<2.3	<2.2	<2.1	<2	<2.4
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorobutanoic acid (PFBA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorodecanoic acid (PFDA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorododecanoic acid (PFDoDA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluoroheptanoic acid (PFHpA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorohexanoic acid (PFHxA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorononanoic acid (PFNA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorooctane sulfonamide (FOSA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<b>240</b>	<6.6	<b>19</b>	<4.8	<b>14</b>	<b>22</b>	<b>16</b>	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorooctanoic acid (PFOA)	NA	10,000	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluoropentanoic acid (PFPeA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluorononane sulfonic acid (PFNS)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<6.7	<6.6	<4.9	<4.8	<5.2	<6.5	<6.1	<5.6	<5.9	<5.5	<5.3	<5.4	<5.8	<5.4	<5.3	<5	<6.1

**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-706	HS-SB-706	HS-SB-707	HS-SB-707	HS-SB-708	HS-SB-708	HS-SB-709	HS-SB-709	HS-SB-710	HS-SB-710	HS-SB-711	HS-SB-711	HS-SB-712	HS-SB-712	HS-SB-801	HS-SB-801	HS-SB-801
Sample Name			HS-SB-706 (0-1)	HS-SB-706 (8-9)	HS-SB-707 (5-6)	HS-SB-707 (9-10)	HS-SB-708 (3-4)	HS-SB-708 (12-13)	HS-SB-709 (4-5)	HS-SB-709 (13-14)	HS-SB-710 (7-8)	HS-SB-710 (12-13)	HS-SB-711(7-8)	HS-SB-711(12-13)	HS-SB-712(1-3)	HS-SB-712(12-14)	HS-SB-801 (1-2)	HS-SB-801 (1-2) DUP	HS-SB-801 (13-14)
Depth Interval			0 - 1	8 - 9	5 - 6	9 - 10	3 - 4	12 - 13	4 - 5	13 - 14	7 - 8	12 - 13	7 - 8	12 - 13	1 - 3	12 - 14	1 - 2	1 - 2	13 - 14
Sample Date			09/27/2018	09/27/2018	09/28/2018	09/28/2018	09/27/2018	09/27/2018	09/27/2018	09/27/2018	09/27/2018	09/27/2018	09/27/2018	09/26/2018	09/26/2018	10/30/2018	10/30/2018	09/28/2018	09/28/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<11	<12	<9.8	<11	<11	<11	<12	<10	<10	<12	<11	<11	<11	<11	<11	<10	<11
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<11	<12	<9.8	<11	<11	<11	<12	<10	<10	<12	<11	<11	<11	<11	<11	<10	<11
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<2.2	<2.3	<2	<2.3	<2.3	<2.2	<2.4	<2	<2.1	<2.3	<2.2	<2.1	<2.1	<2.1	<2.2	<2	<2.1
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2.2	<2.3	<2	<2.3	<2.3	<2.2	<2.4	<2	<2.1	<2.3	<2.2	<2.1	<2.1	<2.1	<2.2	<2	<2.1
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorobutanoic acid (PFBA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorodecanoic acid (PFDA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorododecanoic acid (PFDoDA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluoroheptanoic acid (PFHpA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorohexanoic acid (PFHxA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorononanoic acid (PFNA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorooctane sulfonamide (FOSA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	15	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<b>5.7</b>	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<b>10</b>	<b>6.5</b>	<b>370</b>	<b>140</b>	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorooctanoic acid (PFOA)	NA	10,000	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluoropentanoic acid (PFPeA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<27	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluorononane sulfonic acid (PFNS)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<5.4	<5.8	<4.9	<5.7	<5.6	<5.5	<6	<5.1	<5.2	<5.9	<5.4	<5.3	<5.3	<5.3	<5.5	<5.1	<5.4

**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-802	HS-SB-802	HS-SB-802	HS-SB-803	HS-SB-803	HS-SB-804	HS-SB-804	HS-SB-805	HS-SB-805	HS-SB-805	HS-SB-806	HS-SB-806	HS-SB-807	HS-SB-807	HS-SB-808	HS-SB-808	HS-SB-809
Sample Name			HS-SB-802 (3-4)	HS-SB-802 (3-4) DUP	HS-SB-802 (8-9)	HS-SB-803(2-3)	HS-SB-803(10-11)	HS-SB-804(6-7)	HS-SB-804(13-14)	HS-SB-805(16-17)	HS-SB-805(16-17)DUP	HS-SB-805(18-19)	HS-SB-806(2-3)	HS-SB-806(17-18)	HS-SB-807(7-8)	HS-SB-807(13-14)	HS-SB-808(4-5)	HS-SB-808(8-9)	HS-SB-809 (5-6)
Depth Interval			3 - 4	3 - 4	8 - 9	2 - 3	10 - 11	6 - 7	13 - 14	16 - 17	16 - 17	18 - 19	2 - 3	17 - 18	7 - 8	13 - 14	4 - 5	8 - 9	5 - 6
Sample Date			10/01/2018	10/01/2018	10/01/2018	10/02/2018	10/02/2018	10/02/2018	10/02/2018	10/03/2018	10/03/2018	10/03/2018	10/02/2018	10/02/2018	10/02/2018	10/02/2018	10/02/2018	10/02/2018	10/01/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<11	<12	<12	<12	<11	<11	<11	<11	<12	<11	<11	<13	<11	<11	<11	<10	<11
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<11	<12	<12	<12	<11	<11	<11	<11	<12	<11	<11	<13	<11	<11	<11	<10	<11
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<2.1	<2.4	<2.3	<2.3	<2.2	<2.1	<2.2	<2.2	<2.5	<2.3	<2.3	<2.5	<2.1	<2.1	<2.3	<2	<2.2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2.1	<2.4	<2.3	<2.3	<2.2	<2.1	<2.2	<2.2	<2.5	<2.3	<2.3	<2.5	<2.1	<2.1	<2.3	<2	<2.2
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorobutanoic acid (PFBA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorodecanoic acid (PFDA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorododecanoic acid (PFDoDA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluoroheptanoic acid (PFHpA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorohexanoic acid (PFHxA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorononanoic acid (PFNA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorooctane sulfonamide (FOSA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<5.4	<6	<5.9	<b>8.1</b>	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<b>12</b>	<6.3	<5.3	<5.3	<b>16</b>	<5.1	<5.4
Perfluorooctanoic acid (PFOA)	NA	10,000	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluoropentanoic acid (PFPeA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluorononane sulfonic acid (PFNS)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<5.4	<6	<5.9	<5.8	<5.4	<5.3	<5.4	<5.5	<6.2	<5.7	<5.7	<6.3	<5.3	<5.3	<5.7	<5.1	<5.4

**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-809	HS-SB-810	HS-SB-810	HS-SB-811	HS-SB-811	HS-SB-901	HS-SB-901	HS-SB-902	HS-SB-902	HS-SB-902	HS-SB-903	HS-SB-903	HS-SB-904	HS-SB-904	HS-SB-904	HS-SB-905	HS-SB-905
Sample Name			HS-SB-809 (10-11)	HS-SB-810 (5-6)	HS-SB-810 (9-10)	HS-SB-811 (0-1)	HS-SB-811 (8-9)	HS-SB-901(3-4)	HS-SB-901(8-9)	HS-SB-902 (0-1)	HS-SB-902 (1-2)	HS-SB-902 (9-10)	HS-SB-903(2-3)	HS-SB-903(5-6)	HS-SB-904 (0-1)	HS-SB-904 (0-1) DUP	HS-SB-904 (7-8)	HS-SB-905 (6-7)	HS-SB-905 (9-10)
Depth Interval			10 - 11	5 - 6	9 - 10	0 - 1	8 - 9	3 - 4	8 - 9	0 - 1	1 - 2	9 - 10	2 - 3	5 - 6	0 - 1	0 - 1	7 - 8	6 - 7	9 - 10
Sample Date			10/01/2018	10/01/2018	10/01/2018	09/28/2018	09/28/2018	10/03/2018	10/03/2018	10/04/2018	10/04/2018	10/04/2018	10/04/2018	10/04/2018	10/04/2018	10/05/2018	10/05/2018	10/05/2018	10/05/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<11	<12	<12	<11	<11	<11	<10	<12	<12	<10	<12	<11	<11	<11	<12	<12	<10
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<11	<12	<12	<11	<11	<11	<10	<12	<12	<10	<12	<11	<11	<11	<12	<12	<10
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<2.2	<2.4	<2.4	<2.3	<2.1	<2.1	<2.1	<2.3	<2.4	<2	<2.3	<2.2	<2.2	<2.2	<2.3	<2.4	<2
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2.2	<2.4	<2.4	<2.3	<2.1	<2.1	<2.1	<2.3	<2.4	<2	<2.3	<2.2	<2.2	<2.2	<2.3	<2.4	<2
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorobutanoic acid (PFBA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorodecanoic acid (PFDA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorododecanoic acid (PFDoDA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluoroheptanoic acid (PFHpA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorohexanoic acid (PFHxA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorononanoic acid (PFNA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorooctane sulfonamide (FOSA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<5.5	<6	<6.1	<b>16</b>	<5.3	<b>15</b>	<5.2	<5.8	<6	<5.1	<b>31</b>	<b>7</b>	<5.6	<5.5	<b>20</b>	<6	<5
Perfluorooctanoic acid (PFOA)	NA	10,000	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluoropentanoic acid (PFPeA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluorononane sulfonic acid (PFNS)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<5.5	<6	<6.1	<5.7	<5.3	<5.4	<5.2	<5.8	<6	<5.1	<5.8	<5.4	<5.6	<5.5	<5.9	<6	<5

**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-906	HS-SB-906	HS-SB-907	HS-SB-907	HS-SB-908	HS-SB-908	HS-SB-909	HS-SB-909	HS-SB-910	HS-SB-910	HS-SB-915	HS-SB-915	HS-SB-915	HS-SB-916	HS-SB-916	HS-SB-917	HS-SB-917
Sample Name			HS-SB-906 (1-2)	HS-SB-906 (7-8)	HS-SB-907 (3-4)	HS-SB-907 (12-13)	HS-SB-908 (8-9)	HS-SB-908 (13-14)	HS-SB-909 (12-13)	HS-SB-909 (16-17)	HS-SB-910 (7-8)	HS-SB-910 (12-13)	HS-SB-915 (1-2)	HS-SB-915 (15-16)	HS-SB-915 (17-18)	HS-SB-916 (0-1)	HS-SB-916 (6-7)	HS-SB-917 (7-8)	HS-SB-917 (12-13)
Depth Interval			1 - 2	7 - 8	3 - 4	12 - 13	8 - 9	13 - 14	12 - 13	16 - 17	7 - 8	12 - 13	1 - 2	15 - 16	17 - 18	0 - 1	6 - 7	7 - 8	12 - 13
Sample Date			10/08/2018	10/08/2018	10/08/2018	10/08/2018	10/08/2018	10/08/2018	10/08/2018	10/08/2018	10/08/2018	10/08/2018	10/08/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<11	<12	<16	<9.9	<10	<9.7	<10	<11	<11	<9.7	<12	<11	<8.8	<10	<11	<10	<9.5
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<11	<12	<16	<9.9	<10	<9.7	<10	<11	<11	<9.7	<12	<11	<8.8	<10	<11	<10	<9.5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<2.2	<2.5	<3.3	<2	<2	<1.9	<2.1	<2.1	<2.2	<1.9	<2.4	<2.1	<1.8	3.1	<2.1	<2	<1.9
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2.2	<2.5	<3.3	<2	<2	<1.9	<2.1	<2.1	<2.2	<1.9	<2.4	<2.1	<1.8	2	<2.1	<2	<1.9
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorobutanoic acid (PFBA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorodecanoic acid (PFDA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorododecanoic acid (PFDoDA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	11	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluoroheptanoic acid (PFHpA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorohexanoic acid (PFHxA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorononanoic acid (PFNA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorooctane sulfonamide (FOSA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	80	43	<5	<4.8
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<5.5	<6.1	<b>100</b>	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<b>620</b>	<b>15</b>	<4.4	<b>120</b>	<b>180</b>	<b>19</b>	<4.8
Perfluorooctanoic acid (PFOA)	NA	10,000	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	8.9	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluoropentanoic acid (PFPeA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluorononane sulfonic acid (PFNS)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<5.5	<6.1	<8.1	<4.9	<5.1	<4.8	<5.2	<5.3	<5.6	<4.9	<6	<5.3	<4.4	<5.1	<5.3	<5	<4.8

**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-918	HS-SB-918	HS-SB-931	HS-SB-931	HS-SB-936	HS-SB-936	HS-SB-939	HS-SB-939	HS-SB-940	HS-SB-940	HS-SB-944	HS-SB-944	HS-SB-954	HS-SB-954	HS-SB-955	HS-SB-955	HS-SB-957
Sample Name			HS-SB-918 (1-2)	HS-SB-918 (11-12)	HS-SB-931(0-1)	HS-SB-931(3-4)	HS-SB-936(0-1)	HS-SB-936(17-18)	HS-SB-939 (3-5)	HS-SB-939 (7-9)	HS-SB-940(0-2)	HS-SB-940(9-10)	HS-SB-944(8-9)	HS-SB-944(13-14)	HS-SB-954 (3-10)	HS-SB-954 (3-10) DUP	HS-SB-955 (0-2)	HS-SB-955 (6-7)	HS-SB-957 (7-8)
Depth Interval			1 - 2	11 - 12	0 - 1	3 - 4	0 - 1	17 - 18	3 - 5	7 - 9	0 - 2	9 - 10	8 - 9	13 - 14	3 - 10	3 - 10	0 - 2	6 - 7	7 - 8
Sample Date			10/10/2018	10/10/2018	10/16/2018	10/16/2018	10/16/2018	10/16/2018	10/22/2018	10/22/2018	10/16/2018	10/16/2018	10/17/2018	10/17/2018	11/02/2018	11/02/2018	10/22/2018	10/22/2018	10/23/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<11	<12	<10	<9.6	<11	<12	<650	<10	<9.8	<12	<10	<11	<130	<700	<2,500	<100	<12
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<11	<12	<10	<9.6	<11	<12	<650	<10	<9.8	<12	<10	<11	<130	<700	<2,500	<100	<12
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	4.5	<2.4	2.8	<1.9	<2.3	<2.5	7,300	5.7	<2	<2.3	<2	<2.2	300 [H]	1,900	<490	<20	<2.5
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2.1	<2.4	<2.1	<1.9	<2.3	<2.5	<130	<2	<2	<2.3	<2	<2.2	<26	<140	<490	<20	<2.5
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluorobutanoic acid (PFBA)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluorodecanoic acid (PFDA)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluorododecanoic acid (PFDoDA)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	7	6.1	<5.1	6.5	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	370	<1,200	<51	<6.1
Perfluoroheptanoic acid (PFHpA)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	91 [H]	520	<1,200	<51	<6.1
Perfluorohexanoic acid (PFHxA)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluorononanoic acid (PFNA)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluorooctane sulfonamide (FOSA)	NA	NA	<270	6.8	120	<4.8	<5.6	<6.2	<330	5.6	<4.9	<5.8	<5.1	<5.5	<64	<350	3,500	<51	<6.1
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<b>1,400</b>	<b>840</b>	<b>94</b>	<b>500</b>	<b>37</b>	<6.2	<b>23,000</b>	<b>450</b>	<b>12</b>	<b>9.5</b>	<5.1	<5.5	<b>7,900 [HE]</b>	<b>46,000</b>	<b>220,000</b>	<b>7,600</b>	<b>170</b>
Perfluorooctanoic acid (PFOA)	NA	10,000	5.9	<6.1	<5.1	<4.8	<5.6	<6.2	<330	5.2	<4.9	<5.8	<5.1	<5.5	140 [H]	910	<1,200	<51	<6.1
Perfluoropentanoic acid (PFPeA)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluorodecane sulfonic acid (PFDS)	NA	NA	65	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluorononane sulfonic acid (PFNS)	NA	NA	7.4	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<5.3	<6.1	<5.1	<4.8	<5.6	<6.2	<330	<5	<4.9	<5.8	<5.1	<5.5	<64	<350	<1,200	<51	<6.1

**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
House Street Site - 1855 House Street NE  
Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-957	HS-SB-958	HS-SB-958	HS-SB-959	HS-SB-959	HS-SB-960	HS-SB-960	HS-SB-961	HS-SB-961	HS-SB-1001	HS-SB-1001	HS-SB-1004	HS-SB-1004	HS-SB-1005	HS-SB-1005	HS-SB-1005	HS-SB-1015
Sample Name			HS-SB-957 (13-14)	HS-SB-958 (1-8)	HS-SB-958 (1-8) DUP	HS-SB-959 (2-3)	HS-SB-959 (7-8)	HS-SB-960 (6-7)	HS-SB-960 (11-12)	HS-SB-961 (1-2)	HS-SB-961 (11-12)	HS-SB-1001 (1-2)	HS-SB-1001 (7-8)	HS-SB-1004 (0-1)	HS-SB-1004 (6-7)	HS-SB-1005 (6-7)	HS-SB-1005 (16-17)	HS-SB-1005 (19-20)	HS-SB-1015 (8-10)
Depth Interval			13 - 14	1 - 8	1 - 8	2 - 3	7 - 8	6 - 7	11 - 12	1 - 2	11 - 12	1 - 2	7 - 8	0 - 1	6 - 7	6 - 7	16 - 17	19 - 20	8 - 10
Sample Date			10/23/2018	11/02/2018	11/02/2018	10/23/2018	10/23/2018	10/23/2018	10/23/2018	10/24/2018	10/24/2018	10/08/2018	10/08/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018	10/29/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<9.7	<1,400	<1,300	<11	<10	<9	<9.8	<300	<11	<120	<13	<2,200	<8.9	<1,400	<60	<11	<1,700
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<9.7	<1,400	<1,300	<11	<10	<9	<9.8	<300	<11	<120	<13	<2,200	<8.9	<1,400	<60	<11	<1,700
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<1.9	<280	<250	<2.1	<2.1	<1.8	<2	<61	<2.1	<24	<2.5	1,600	<1.8	1,500	110	2.4	1,000
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<1.9	<280	<250	<2.1	<2.1	<1.8	<2	<61	<2.1	<24	<2.5	<440	<1.8	<280	<12	<2.2	<330
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluorobutanoic acid (PFBA)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluorodecanoic acid (PFDA)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluorododecanoic acid (PFDoDA)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	87	<1,100	7	<710	30	<5.5	<830
Perfluoroheptanoic acid (PFHpA)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	84	<1,100	5.8	710	45	<5.5	<830
Perfluorohexanoic acid (PFHxA)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluorononanoic acid (PFNA)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluorooctane sulfonamide (FOSA)	NA	NA	<4.9	2,000	1,100	<5.3	<5.2	<4.5	<4.9	1,100	<5.3	85	<6.3	3,900	<4.4	850	36	<5.5	<830
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<4.9	<b>81,000</b>	<b>48,000</b>	<b>13</b>	<b>7.1</b>	<4.5	<4.9	<b>19,000</b>	<b>600</b>	<b>10,000</b>	<b>280</b>	<b>180,000</b>	<b>1,100</b>	<b>61,000</b>	<b>3,300</b>	<b>28</b>	<b>77,000</b>
Perfluorooctanoic acid (PFOA)	NA	10,000	<4.9	1,500	1,200	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	260	<1,100	8.9	1,700	90	<5.5	<830
Perfluoropentanoic acid (PFPeA)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluorononane sulfonic acid (PFNS)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	<6.3	<1,100	<4.4	<710	<30	<5.5	<830
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<4.9	<710	<630	<5.3	<5.2	<4.5	<4.9	<150	<5.3	<60	8.6	<1,100	<4.4	<710	<30	<5.5	<830



**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-1019	HS-SB-1019	HS-SB-1019	HS-SB-1021	HS-SB-1021	HS-SB-1023	HS-SB-1023	HS-SB-1024	HS-SB-1024	HS-SB-T4-008	HS-SB-T5-003	HS-SB-T6-036	HS-SB-T6-036	HS-SB-T6-042	HS-SB-T6-064	HS-SB-T6-080	HS-SB-T6-088
Sample Name			HS-SB-1019(2-4)	HS-SB-1019(8-10)	HS-SB-1019(13-15)	HS-SB-1021(9-10)	HS-SB-1021(16-17)	HS-SB-1023 (10-11)	HS-SB-1023 (18-19)	HS-SB-1024 (2-3)	HS-SB-1024 (6-7)	HS-SB-T4-008(7-9)	HS-SB-T5-003(7-11)	HS-SB-T6-036 (1-2)	HS-SB-T6-036 (14-15)	HS-SB-T6-042(8-9)	HS-SB-T6-064(8.5-12)	HS-SB-T6-080(8-9)	HS-SB-T6-088(9.5-10)
Depth Interval			2 - 4	8 - 10	13 - 15	9 - 10	16 - 17	10 - 11	18 - 19	2 - 3	6 - 7	7 - 9	7 - 11	1 - 2	14 - 15	8 - 9	8.5 - 12	8 - 9	9.5 - 10
Sample Date			10/18/2018	10/18/2018	10/18/2018	10/18/2018	10/18/2018	10/24/2018	10/24/2018	10/25/2018	10/25/2018	10/30/2018	11/01/2018	07/27/2018	07/27/2018	10/30/2018	10/31/2018	10/30/2018	10/31/2018
Parameter (µg/kg)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<11	<11	<11	<9.8	<11	<280	<10	<5,600	<1,400	<120	<390	<52	<12	<12	<160	<270	<11
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<11	<11	<11	<9.8	<11	<280	<10	<5,600	<1,400	<120	<390	<52	<12	<12	<160	<270	<11
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<2.3	<2.2	<2.3	<2	<2.2	3,800	<2.1	2,400	9,600	250	1,700	<10	<2.3	10	480	450	4.6
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<2.3	<2.2	<2.3	<2	<2.2	<57	<2.1	<1,100	<280	<24	<78	<10	<2.3	<2.3	<32	<54	<2.2
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	<5.2	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluorobutanoic acid (PFBA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	<5.2	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluorodecanoic acid (PFDA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	<5.2	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluorododecanoic acid (PFDoDA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	<5.2	<2,800	<690	160	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	200	<5.2	<2,800	1,300	<61	260	<26	<5.8	<5.9	<81	<130	<5.4
Perfluoroheptanoic acid (PFHpA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	6.9	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	900	32	<2,800	1,000	<61	390	<26	<5.8	<5.9	<81	<130	11
Perfluorohexanoic acid (PFHxA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	<5.2	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluorononanoic acid (PFNA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	<5.2	<2,800	<690	<61	<190	<26	<5.8	37	<81	<130	<5.4
Perfluorooctane sulfonamide (FOSA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	410	<5.2	6,800	<690	<61	<190	51	<5.8	13	<81	<130	<5.4
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<5.6	<5.5	<5.7	<b>71</b>	<b>9.2</b>	<b>21,000</b>	<b>63</b>	<b>140,000</b>	<b>87,000</b>	<b>3,700</b>	<b>31,000</b>	<b>1,700</b>	<b>27</b>	<b>450</b>	<b>6,500</b>	<b>8,600</b>	<b>190</b>
Perfluorooctanoic acid (PFOA)	NA	10,000	<5.6	<5.5	<5.7	<4.9	<5.5	390	20	<2,800	<690	74	460	<26	<5.8	5.9	<81	150	9.3
Perfluoropentanoic acid (PFPeA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	<5.2	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	<5.2	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	<5.2	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	<5.2	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	260	<5.2	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluorononane sulfonic acid (PFNS)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	160	<5.2	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<5.6	<5.5	<5.7	<4.9	<5.5	<140	17	<2,800	<690	<61	<190	<26	<5.8	<5.9	<81	<130	<5.4

**TABLE 1**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
 House Street Site - 1855 House Street NE  
 Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Drinking Water Protection Criteria	Part 201 Generic Groundwater to Surface Water Interface Protection Criteria	HS-SB-T6-092	HS-SB-T6-096	HS-SB-T6-106	HS-SB-T6-145	HS-SB-T6-162	HS-SB-T6-162	HS-TR-407-1	HS-TR-411-1	HS-TR-414-1
Sample Name			HS-SB-T6-092(9-13)	HS-SB-T6-096(4-6)	HS-SB-T6-106(8.5-9.5)	HS-SB-T6-145(6-8)	HS-SB-T6-162(3-4)	HS-SB-T6-162(8-9)	HS-TR-407-1(2-3)	HS-TR-411-1 (6-7)	HS-TR-414-1 (5-6)
Depth Interval			9 - 13	4 - 6	8.5 - 9.5	6 - 8	3 - 4	8 - 9	2 - 3	6 - 7	5 - 6
Sample Date			10/30/2018	10/30/2018	10/31/2018	10/30/2018	09/26/2018	09/26/2018	11/01/2018	10/29/2018	11/02/2018
Parameter (µg/kg)											
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<1,300	<1,500	<140	<1,800	<11	<11	<1,200	<760	<1,400
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<1,300	<1,500	<140	<1,800	<11	<11	<1,200	<760	<1,400
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<260	<300	91	<360	<2.2	<2.2	<230	570	1,700
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<260	<300	<27	<360	<2.2	<2.2	<230	<150	<280
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluorobutanoic acid (PFBA)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluorodecanoic acid (PFDA)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluorododecanoic acid (PFDoDA)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluoroheptanoic acid (PFHpA)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<650	<760	80	<900	<5.5	<5.6	<590	<380	<700
Perfluorohexanoic acid (PFHxA)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluorononanoic acid (PFNA)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluorooctane sulfonamide (FOSA)	NA	NA	<650	<760	<68	1,700	<5.5	<5.6	880	<380	<700
<b>Perfluorooctane sulfonic acid (PFOS)</b>	NA	0.24	<b>41,000</b>	<b>75,000</b>	<b>8,700</b>	<b>59,000</b>	<5.5	<5.6	<b>59,000</b>	<b>30,000</b>	<b>46,000</b>
Perfluorooctanoic acid (PFOA)	NA	10,000	<650	<760	91	<900	<5.5	<5.6	<590	<380	<700
Perfluoropentanoic acid (PFPeA)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<650	2,900	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	1,300
Perfluorononane sulfonic acid (PFNS)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	840
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<650	<760	<68	<900	<5.5	<5.6	<590	<380	<700

**TABLE 1 - NOTES**  
**SUMMARY OF ON-SITE SOIL SAMPLE ANALYSIS - PFAS**  
House Street Site - 1855 House Street NE  
Plainfield Township, Kent County, Michigan

NOTES:

1. Concentration and criteria units are micro-grams per kilogram or parts per billion; "< RL" or "<PQL" indicates the compound was analyzed for but not detected above the RL; "DUP" indicates a duplicate sample; RL = Reporting Limit; PQL=Practical Quantitation Limit.
2. ***BOLD, Italic*** number with a thick border indicates that the compound was detected greater than one of the generic cleanup criteria listed.
3. Michigan Part 201 soil cleanup criteria were based on MDEQ 's Table 2, Soil: Residential, Part 201 Generic Cleanup Criteria and Screening Levels, June 2018.

**TABLE 2**  
SUMMARY OF GROUNDWATER SAMPLE ANALYSIS - PFAS  
House Street Site - 1855 House Street NE  
Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Groundwater Cleanup Criteria - Drinking Water Uses	Part 201 Generic Groundwater Cleanup Criteria - Groundwater Surface Water Interface	HS-SB-009	HS-SB-108	HS-SB-117	HS-SB-131	HS-SB-132	HS-SB-206	HS-SB-208	HS-SB-219	HS-SB-219	HS-SB-221	HS-SB-222	HS-SB-421	HS-SB-521	HS-SB-914	HS-SB-935	HS-SB-937	HS-SB-939
Sample Name			HS-GW-SB-009(13-20)	HS-GW-SB-108(13-20)	HS-GW-SB-117(9-20)	HS-GW-SB-131-(13-20)	HS-GW-SB-132-(13-20)	HS-GW-SB-206(13-20)	HS-GW-SB-208(14-20)	HS-GW-SB-219(14-20)	HS-GW-SB-219(14-20) DUP	HS-GW-SB-221(13-20)	HS-GW-SB-222(14-20)	HS-GW-SB-421(13-20)	HS-GW-SB-521(7-20)	HS-GW-SB-914(11-20)	HS-GW-SB-935(13-20)	HS-GW-SB-937(8-20)	HS-GW-SB-939(8-20)
Laboratory Sample ID			TK06035-010	TK06035-011	TK01011-018	TK01011-006	TK01011-007	TK01011-019	TK06035-008	TK06035-015	TK06035-016	TK10021-001	TK06035-017	TK01011-021	TK01011-020	TK03011-001	TK03011-013	TK06035-007	TK03011-003
Sample Date			11/06/2018	11/06/2018	11/01/2018	10/31/2018	10/31/2018	11/01/2018	11/05/2018	11/06/2018	11/06/2018	11/07/2018	11/06/2018	11/01/2018	11/01/2018	11/02/2018	11/02/2018	11/05/2018	11/02/2018
Parameter (µg/L)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<0.019	<0.037	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<0.019	<0.037	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<0.019	<0.037	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<0.037	<0.074	<0.0072	<0.0072	<0.073	<0.0075	<0.75	<0.0073	<0.0072	<0.0072	<0.0072	<0.14	<0.37	<1.5	<0.38	<0.73	<1.5
Perfluorobutane sulfonic acid (PFBS)	NA	NA	0.93	0.39	<0.0036	0.018	0.12	0.007	3.8	0.0051	0.0048	0.0056	0.0057	0.19	0.36	2.9	4.9	7.4	4.4
Perfluorobutanoic acid (PFBA)	NA	NA	0.16	0.087	<0.0036	0.012	0.052	<0.0037	1	<0.0037	<0.0036	<0.0036	0.012	0.17	<0.18	0.96	1.1	1.5	1.1
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<0.019	<0.037	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
Perfluorodecanoic acid (PFDA)	NA	NA	<0.019	<0.037	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
Perfluorododecanoic acid (PFDoDA)	NA	NA	<0.019	<0.037	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	0.77	0.64	<0.0036	0.018	0.5	<0.0037	12	0.0064	0.0059	<0.0036	<0.0036	3	1.6	12	4.3	15	16
Perfluoroheptanoic acid (PFHpA)	NA	NA	0.34	0.33	<0.0036	0.019	0.079	<0.0037	4	<0.0037	<0.0036	<0.0036	<0.0036	0.88	0.34	4.3	4.4	6.7	5
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	5.8	3.3	0.011	0.24	1.7	0.049	31	0.02	0.018	0.0084	<0.0036	7.1	5.7	33	23	41	30
Perfluorohexanoic acid (PFHxA)	NA	NA	0.76	0.63	<0.0036	0.045	0.11	<0.0037	3.5	<0.0037	<0.0036	<0.0036	0.0097	1.3	0.97	3.8	3.7	5	4.1
Perfluorononanoic acid (PFNA)	NA	NA	<0.019	1.6	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
Perfluorooctane sulfonamide (FOSA)	NA	NA	<0.019	<0.037	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
<b>Perfluorooctane sulfonic acid (PFOS)</b>	0.07	0.012	<b>7.3</b>	<b>26</b>	<b>0.026</b>	<b>0.1</b>	<b>18</b>	<b>0.014</b>	<b>250</b>	<b>0.021</b>	<b>0.019</b>	<b>0.016</b>	<b>0.052</b>	<b>52</b>	<b>130</b>	<b>320</b>	<b>93</b>	<b>340</b>	<b>400</b>
<b>Perfluorooctanoic acid (PFOA)</b>	0.07	12	<b>7.9</b>	<b>2.7</b>	0.0028	<b>0.26</b>	<b>1.8</b>	0.0059	<b>32</b>	0.0093	0.009	<0.0018	0.016	<b>10</b>	<b>6.2</b>	<b>35</b>	<b>25</b>	<b>58</b>	<b>47</b>
Perfluoropentanoic acid (PFPeA)	NA	NA	0.26	0.14	<0.0036	0.015	0.066	<0.0037	1	<0.0037	<0.0036	<0.0036	0.0051	0.26	0.23	1.1	1.4	1.6	1.3
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<0.019	<0.037	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<0.019	<0.037	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<0.019	<0.037	<0.0036	<0.0036	<0.037	<0.0037	<0.38	<0.0037	<0.0036	<0.0036	<0.0036	<0.072	<0.18	<0.74	<0.19	<0.37	<0.74
Perfluorononane sulfonic acid (PFNS)	NA	NA	<0.037	<0.074	<0.0072	<0.0072	<0.073	<0.0075	<0.75	<0.0073	<0.0072	<0.0072	<0.0072	<0.14	<0.37	<1.5	<0.38	<0.73	<1.5
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	3	1.6	<0.0036	0.051	0.33	0.0049	6.3	<0.0037	<0.0036	<0.0036	<0.0036	0.62	1.4	6.6	6.4	9.8	5.8

**TABLE 2**  
SUMMARY OF GROUNDWATER SAMPLE ANALYSIS - PFAS  
House Street Site - 1855 House Street NE  
Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Groundwater Cleanup Criteria - Drinking Water Uses	Part 201 Generic Groundwater Cleanup Criteria - Groundwater Surface Water Interface	HS-SB-939	HS-SB-941	HS-SB-943	HS-SB-945	HS-SB-947	HS-SB-949	HS-SB-950	HS-SB-951	HS-SB-952	HS-SB-953	HS-SB-954	HS-SB-954	HS-SB-956	HS-SB-1014	HS-SB-T2-030	HS-SB-T6-024	HS-SB-T6-025
Sample Name			HS-GW-SB-939(8-20) DUP	HS-GW-SB-941(8-20)	HS-GW-SB-943(8-20)	HS-GW-SB-945(11-20)	HS-GW-SB-947(11-20)	HS-GW-SB-949(8-20)	HS-GW-SB-950(12-25)	HS-GW-SB-951(12-20)	HS-GW-SB-952(11-20)	HS-GW-SB-953(13-20)	HS-GW-SB-954(7.5-20)	HS-GW-SB-954(7.5-20) DUP	HS-GW-SB-956(13-20)	HS-GW-SB-1014(8-20)	HS-GW-SB-T2-030(12-25)	HS-GW-SB-T6-024(13-20)	HS-GW-SB-T6-025(12-20)
Laboratory Sample ID			TK03011-004	TK03011-012	TK03011-014	TK03011-011	TK03011-002	TK03011-005	TK03011-007	TK06035-006	TK03011-006	TK06035-004	TK06035-001	TK06035-002	TK06035-003	TK01011-022	TJ27021-006	TK01011-005	TK06035-012
Sample Date			11/02/2018	11/02/2018	11/02/2018	11/02/2018	11/02/2018	11/02/2018	11/02/2018	11/05/2018	11/02/2018	11/05/2018	11/05/2018	11/05/2018	11/05/2018	11/01/2018	10/29/2018	10/31/2018	11/06/2018
Parameter (µg/L)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	<0.37	<0.37	<0.74	<0.036	<0.0037	<0.018	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	<0.37	<0.37	<0.74	<0.036	<0.0037	<0.018	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	<0.37	<0.37	<0.74	<0.036	<0.0037	<0.018	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<1.5	<1.5	<1.5	<1.5	<0.74	<1.5	<0.74	<1.5	<0.74	<1.5	<0.74	<0.75	<0.74	<0.15	<0.072	<0.036	
Perfluorobutane sulfonic acid (PFBS)	NA	NA	4.2	3	8.2	5	1.4	2.4	1.1	5	<0.74	4.2	5.9	5.5	2.4	0.5	0.4	0.19	
Perfluorobutanoic acid (PFBA)	NA	NA	1.1	0.92	1.8	1.3	0.56	0.81	0.69	1.2	<0.74	0.98	1.5	1.4	0.77	0.082	0.077	0.028	
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	<0.37	<0.37	<0.74	<0.036	<0.0037	<0.018	
Perfluorodecanoic acid (PFDA)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	<0.37	<0.37	<0.74	<0.036	<0.0037	<0.018	
Perfluorododecanoic acid (PFDoDA)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	<0.37	<0.37	<0.74	<0.036	<0.0037	<0.018	
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	14	12	16	22	5.9	14	6.5	11	15	9.2	10	9.5	1.7	1.1	0.27	0.01	
Perfluoroheptanoic acid (PFHpA)	NA	NA	5	3.5	11	5.5	2.1	3	3.5	4.6	2.7	3.4	5.3	5.6	1.9	0.19	0.13	0.051	
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	28	33	62	37	21	21	31	29	39	23	46	42	4.7	3.5	1.5	0.41	
Perfluorohexanoic acid (PFHxA)	NA	NA	4	3	7	4.6	1.7	2.8	2.8	3.7	2	2.6	4.5	4.6	2.1	0.41	0.23	0.14	
Perfluorononanoic acid (PFNA)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	<0.37	<0.37	<0.74	<0.036	<0.0037	<0.018	
Perfluorooctane sulfonamide (FOSA)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	0.41	0.42	<0.37	<0.036	<0.0037	<0.018	
<b>Perfluorooctane sulfonic acid (PFOS)</b>	0.07	0.012	<b>390</b>	<b>300</b>	<b>330</b>	<b>350</b>	<b>160</b>	<b>520</b>	<b>130</b>	<b>310</b>	<b>400</b>	<b>230</b>	<b>200</b>	<b>190</b>	<b>33</b>	<b>63</b>	<b>34</b>	<b>1.1</b>	
<b>Perfluorooctanoic acid (PFOA)</b>	0.07	12	<b>45</b>	<b>31</b>	<b>79</b>	<b>52</b>	<b>16</b>	<b>30</b>	<b>16</b>	<b>40</b>	<b>21</b>	<b>28</b>	<b>39</b>	<b>40</b>	<b>4.9</b>	<b>3.6</b>	<b>2.1</b>	<b>0.42</b>	
Perfluoropentanoic acid (PFPeA)	NA	NA	1.2	0.9	2.1	1.5	0.58	0.86	0.75	1.3	<0.74	1.1	1.6	1.5	0.93	0.14	0.14	0.055	
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	<0.37	<0.37	<0.74	<0.036	<0.0037	<0.018	
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	<0.37	<0.37	<0.74	<0.036	<0.0037	<0.018	
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<0.74	<0.75	<0.74	<0.74	<0.37	<0.73	<0.37	<0.37	<0.74	<0.37	<0.37	<0.37	<0.74	<0.036	<0.0037	<0.018	
Perfluorononane sulfonic acid (PFNS)	NA	NA	<1.5	<1.5	<1.5	<1.5	<0.74	<1.5	<0.74	<0.74	<1.5	<0.75	<0.74	<0.75	<0.74	<0.15	<0.072	<0.036	
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	5.6	6.2	12	7.5	3.5	3.8	6.3	6.3	2.7	5.1	11	11	3.3	1.1	0.86	0.59	

**TABLE 2**  
SUMMARY OF GROUNDWATER SAMPLE ANALYSIS - PFAS  
House Street Site - 1855 House Street NE  
Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Groundwater Cleanup Criteria - Drinking Water Uses	Part 201 Generic Groundwater Cleanup Criteria - Groundwater Surface Water Interface	HS-SB-T6-040	HS-SB-T6-042	HS-SB-T6-050	HS-SB-T6-046	HS-SB-T6-102	HS-SB-T6-104	HS-SB-T6-116	HS-SB-T6-116	HS-SB-T6-117	HS-SB-T6-118	HS-SB-T6-119	HS-SB-T6-122	MW-1D	MW-1S	MW-2S	MW-3S	MW-3S
Sample Name			HS-GW-SB-T6-040(13-20)	HS-GW-SB-T6-042(13-20)	HS-GW-SB-T6-050(12.5-20)	HS-GW-SB-T6-046(12.7-20)	HS-GW-SB-T6-102(10.8-20)	HS-GW-SB-T6-104(13.2-20)	HS-GW-SB-T6-116(15-20)	HS-GW-SB-T6-116(15-20) DUP	HS-GW-SB-T6-117(10.7-20)	HS-GW-SB-T6-118(8-20)	HS-GW-SB-T6-119(9.7-20)	HS-GW-SB-T6-122(10-20)	HS-GW-MW-1D	HS-GW-MW-1S	HS-GW-MW-2S	HS-GW-MW-3S	HS-GW-MW-3S DUP
Laboratory Sample ID			TK01011-003	TK01011-004	TK01011-001	TK01011-002	TK01011-015	TK01011-017	TK01011-008	TK01011-009	TK01011-010	TK01011-011	TK01011-012	TK01011-013	TJ24030-014	TJ24030-013	TJ24030-012	TJ24030-008	TJ24030-009
Sample Date			10/30/2018	10/31/2018	10/30/2018	10/30/2018	11/01/2018	11/01/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/24/2018	10/24/2018	10/24/2018	10/23/2018
Parameter (µg/L)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<0.036	<0.15	<0.007	<0.036	<0.15	<0.073	<0.0073	<0.0073	<0.0072	<0.036	<0.0074	<0.0072	<0.0073	<0.0074	<0.0073	<0.007	<0.0069
Perfluorobutane sulfonic acid (PFBS)	NA	NA	0.15	0.46	0.047	0.2	0.14	0.39	0.0049	0.0047	0.0056	<0.018	0.0043	0.0086	0.0056	0.0059	0.14	0.32	0.33
Perfluorobutanoic acid (PFBA)	NA	NA	<0.018	0.079	0.0089	0.034	<0.073	0.045	0.0039	0.0039	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	0.019	0.076	0.074
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
Perfluorodecanoic acid (PFDA)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
Perfluorododecanoic acid (PFDoDA)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	0.092	0.43	0.043	0.15	0.37	0.47	0.048	0.048	0.052	0.28	0.063	0.021	<0.0036	<0.0037	<0.0037	0.03	0.029
Perfluoroheptanoic acid (PFHpA)	NA	NA	0.052	0.17	0.031	0.097	0.11	0.14	0.015	0.015	0.015	0.024	0.0077	0.011	<0.0036	<0.0037	0.037	0.14	0.15
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	0.43	1.4	0.49	1.4	1.5	2.2	0.05	0.047	0.072	0.28	0.048	0.26	0.0038	0.043	0.054	1.3	1.3
Perfluorohexanoic acid (PFHxA)	NA	NA	0.086	0.4	0.049	0.14	0.17	0.33	0.017	0.016	0.016	0.029	0.0064	0.0069	<0.0036	0.0061	0.11	0.31	0.29
Perfluorononanoic acid (PFNA)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
Perfluorooctane sulfonamide (FOSA)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
<b>Perfluorooctane sulfonic acid (PFOS)</b>	0.07	0.012	<b>9.1</b>	<b>23</b>	<b>2</b>	<b>6</b>	<b>47</b>	<b>36</b>	<b>1.1</b>	<b>1.2</b>	<b>0.71</b>	<b>16</b>	<b>2.5</b>	<b>0.056</b>	<0.0036	0.005	<0.0037	<b>0.019</b>	<b>0.018</b>
<b>Perfluorooctanoic acid (PFOA)</b>	0.07	12	<b>0.49</b>	<b>1.6</b>	<b>0.76</b>	<b>1.8</b>	<b>1.3</b>	<b>2.3</b>	<b>0.14</b>	<b>0.16</b>	<b>0.16</b>	<b>0.46</b>	<b>0.1</b>	<b>0.15</b>	0.0089	0.009	0.0098	<b>0.59</b>	<b>0.61</b>
Perfluoropentanoic acid (PFPeA)	NA	NA	0.022	0.14	0.014	0.057	<0.073	0.093	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	0.023	0.1	0.1
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<0.018	<0.074	<0.0035	<0.018	<0.073	<0.037	<0.0037	<0.0036	<0.0036	<0.018	<0.0037	<0.0036	<0.0036	<0.0037	<0.0037	<0.0035	<0.0035
Perfluorononane sulfonic acid (PFNS)	NA	NA	<0.036	<0.15	<0.007	<0.036	<0.15	<0.073	<0.0073	<0.0073	<0.0072	<0.036	<0.0074	<0.0072	<0.0073	<0.0074	<0.0073	<0.007	<0.0069
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	0.23	0.82	0.18	0.51	0.34	1	0.0052	0.0048	0.007	0.037	0.0042	0.0082	<0.0036	0.0045	0.18	0.52	0.52

**TABLE 2**  
SUMMARY OF GROUNDWATER SAMPLE ANALYSIS - PFAS  
House Street Site - 1855 House Street NE  
Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Groundwater Cleanup Criteria - Drinking Water Uses	Part 201 Generic Groundwater Cleanup Criteria - Groundwater Surface Water Interface	MW-4S	MW-5D	MW-5S	MW-6D	MW-6S	MW-7S	MW-8	MW-9D	MW-9M	MW-9S	MW-9S	MW-10D	MW-10M	MW-10S	MW-11D	MW-11M	MW-11S
Sample Name			HS-GW-MW-4S	HS-GW-MW-5D	HS-GW-MW-5M	HS-GW-MW-6D	HS-GW-MW-6S	HS-GW-MW-7S	HS-GW-MW-8	HS-GW-MW-9D	HS-GW-MW-9M	HS-GW-MW-9S	HS-GW-MW-9S	HS-GW-MW-10D	HS-GW-MW-10M	HS-GW-MW-10S	HS-GW-MW-11D	HS-GW-MW-11M	HS-GW-MW-11S
Laboratory Sample ID			TJ24030-006	TJ24030-003	TJ24030-004	TJ24030-002	TJ24030-001	TJ24030-007	TJ24030-015	TJ24030-022	TJ24030-017	TJ24030-016	TK12032-001	TJ24030-021	TJ24030-018	TJ27021-002	TJ27021-001	TJ27021-003	TJ27021-005
Sample Date			10/23/2018	10/22/2018	10/23/2018	10/22/2018	10/22/2018	10/23/2018	10/24/2018	10/25/2018	10/25/2018	10/24/2018	11/07/2018	10/25/2018	10/25/2018	10/26/2018	10/26/2018	10/26/2018	10/26/2018
Parameter (µg/L)																			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<0.0035	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<0.0035	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<0.0035	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<0.007	<0.0071	<0.14	<0.0069	<0.0069	<0.007	<0.0074	<0.0073	<0.0069	<0.0069	<0.0073	<0.0069	<0.007	<0.007	<0.007	<0.0072	<0.007
Perfluorobutane sulfonic acid (PFBS)	NA	NA	0.097	<0.0035	1.1	<0.0035	0.039	0.0058	0.041	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	0.01	0.0036	<0.0035	0.0061	<0.0035
Perfluorobutanoic acid (PFBA)	NA	NA	0.16	<0.0035	0.28	<0.0035	<0.0035	<0.0035	0.011	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<0.0035	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluorodecanoic acid (PFDA)	NA	NA	<0.0035	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluorododecanoic acid (PFDoDA)	NA	NA	<0.0035	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	0.61	<0.0035	1.4	<0.0035	<0.0035	<0.0035	0.16	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	0.0051	<0.0035	<0.0036	<0.0035
Perfluoroheptanoic acid (PFHpA)	NA	NA	0.3	<0.0035	0.84	<0.0035	0.013	<0.0035	0.046	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	3.5	0.004	4.7	<0.0035	0.08	0.0093	0.22	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	0.0054	0.0075	<0.0035	<0.0036	<0.0035
Perfluorohexanoic acid (PFHxA)	NA	NA	0.42	<0.0035	0.74	<0.0035	0.029	<0.0035	0.023	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluorononanoic acid (PFNA)	NA	NA	0.0042	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluorooctane sulfonamide (FOSA)	NA	NA	<0.0035	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
<b>Perfluorooctane sulfonic acid (PFOS)</b>	0.07	0.012	<b>4.8</b>	0.0056	<b>47</b>	<0.0035	0.0049	0.004	<b>0.18</b>	<0.0036	<0.0034	0.0055	<0.0037	<0.0035	<b>0.014</b>	<b>0.041</b>	<0.0035	<0.0036	<0.0035
<b>Perfluorooctanoic acid (PFOA)</b>	0.07	12	<b>1.6</b>	0.002	<b>5.6</b>	<0.0017	0.045	0.0024	<b>0.59</b>	<0.0018	<0.0017	<0.0017	<0.0018	<0.0017	0.0092	0.015	<0.0018	<0.0018	0.0018
Perfluoropentanoic acid (PFPeA)	NA	NA	0.16	<0.0035	0.37	<0.0035	0.0061	<0.0035	0.0091	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<0.0035	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluorotridecanoic acid (PFTrDA)	NA	NA	<0.0035	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<0.0035	<0.0035	<0.07	<0.0035	<0.0035	<0.0035	<0.0037	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035
Perfluorononane sulfonic acid (PFNS)	NA	NA	<0.007	<0.0071	<0.14	<0.0069	<0.0069	<0.007	<0.0074	<0.0073	<0.0069	<0.0069	<0.0073	<0.0069	<0.007	<0.007	<0.007	<0.0072	<0.007
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	0.31	<0.0035	1.7	<0.0035	0.058	<0.0035	0.053	<0.0036	<0.0034	<0.0034	<0.0037	<0.0035	<0.0035	<0.0035	<0.0035	<0.0036	<0.0035

**TABLE 2 - NOTES**  
**SUMMARY OF GROUNDWATER ANALYSIS - PFAS**  
House Street Site - 1855 House Street NE  
Plainfield Township, Kent County, MI

16.0062335.52

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1/3/2019

NOTES:

1. Concentration and criteria units are micrograms per liter ( $\mu\text{g/L}$ ) or parts per billion (ppb); "< RL" indicates the compound was analyzed for but not detected above the method detection limit; RL = Reporting Limit
2. ***BOLD, Italic*** number with a thick border indicates that the compound was detected greater than one of the generic cleanup criteria listed.
3. Michigan Part 201 groundwater cleanup criteria protective of drinking water uses and Michigan Part 201 groundwater surface water interface criteria were based on MDEQ 's Table 1, Groundwater: Residential and Nonresidential, Part 201 Generic Cleanup Criteria and Screening Levels, June 2018.
4. The Michigan Part 201 groundwater cleanup criteria protective of drinking water uses of 0.07 ppb was established for the combined concentrations of PFOA and PFOS.



**TABLE 3**  
**SUMMARY OF SURFACE WATER SAMPLE ANALYSIS - PFAS**  
House Street Site - 1855 House Street NE  
Plainfield Township, Kent County, MI

Location		HS-SW-01	HS-SW-01
Sample Name	Part 57 Human Noncancer Value (HNV) Drinking Water	HS-SW-01	HS-SW-01 DUP
Laboratory Sample ID		TK07034-001	TK07034-002
Sample Date		11/06/2018	11/06/2018
Parameter (µg/L)			
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NCL	<0.0035	<0.0034
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NCL	<0.0035	<0.0034
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NCL	<0.0035	<0.0034
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NCL	<0.007	<0.0069
Perfluorobutane sulfonic acid (PFBS)	NCL	<0.0035	<0.0034
Perfluorodecane sulfonic acid (PFDS)	NCL	<0.0035	<0.0034
Perfluoroheptane sulfonic acid (PFHpS)	NCL	<0.0035	<0.0034
Perfluorononane sulfonic acid (PFNS)	NCL	<0.007	<0.0069
Perfluorooctane sulfonamide (FOSA)	NCL	<0.0035	<0.0034
Perfluoropentane sulfonic acid (PFPeS)	NCL	<0.0035	<0.0034
Perfluorohexane sulfonic acid (PFHxS)	NCL	<0.0035	<0.0034
Perfluorobutanoic acid (PFBA)	NCL	0.0064	0.0078
Perfluorodecanoic acid (PFDA)	NCL	<0.0035	<0.0034
Perfluorododecanoic acid (PFDoDA)	NCL	<0.0035	<0.0034
Perfluoroheptanoic acid (PFHpA)	NCL	<0.0035	<0.0034
Perfluorohexanoic acid (PFHxA)	NCL	0.007	0.0079
Perfluorononanoic acid (PFNA)	NCL	<0.0035	<0.0034
Perfluorooctanoic acid (PFOA)	0.42	0.0051	0.0089
Perfluoropentanoic acid (PFPeA)	NCL	<0.0035	0.0034
Perfluorotetradecanoic acid (PFTeDA)	NCL	<0.0035	<0.0034
Perfluorotridecanoic acid (PFTrDA)	NCL	<0.0035	<0.0034
<b>Perfluorooctane sulfonic acid (PFOS)</b>	0.011	<b>0.029</b>	<b>0.044</b>
Perfluoroundecanoic acid (PFUnDA)	NCL	<0.0035	<0.0034

NOTES:

1. Concentration and criteria units are micrograms per liter (µg/L) or parts per billion (ppb); "< RL" indicates the compound was analyzed for but not detected above the method detection limit; RL = Reporting Limit
2. ***BOLD, Italic*** number with a thick border indicates that the compound was detected greater than one of the generic cleanup criteria listed.
3. Michigan Part 57 Human Noncancer Value (HNV) Drinking Water criteria were based on MDEQ's "Rule 57 Water Quality Values, Surface Water Assessment Section," which were developed using procedures for calculating water quality values in Michigan Administrative Code, Part 4, Water Quality Standards, Rule 323.1057.

**TABLE 4**  
**SUMMARY OF VAP GROUNDWATER ANALYSIS - PFAS**  
House Street Site - 1855 House Street NE  
Plainfield Township, Kent County, MI

Location	Part 201 Generic Residential Groundwater Cleanup Criteria - Drinking Water Uses	Part 201 Generic Groundwater Cleanup Criteria - Groundwater Surface Water Interface	PMW-26	PMW-26	PMW-26	PMW-26	PMW-26
Sample Name			SB-26 (25-30)	SB-26 (50-55)	SB-26 (60-65)	SB-26 (70-75)	SB-26 (79-84)
Laboratory Sample ID			TK16018-001	TK16018-003	TK16018-004	TK16018-005	TK16018-006
Sample Date			11/12/2018	11/14/2018	11/14/2018	11/14/2018	11/14/2018
Parameter (µg/L)							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
N-Methyl perfluorooctane sulfonamide (MeFOSA)	NA	NA	<0.0072	<0.0071	<0.007	<0.0071	<0.0072
Perfluorobutane sulfonic acid (PFBS)	NA	NA	<0.0036	0.0059	0.0072	0.0094	<0.0036
Perfluorobutanoic acid (PFBA)	NA	NA	<0.0036	<0.0035	<0.0035	0.0036	<0.0036
Perfluorodecane sulfonic acid (PFDS)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluorodecanoic acid (PFDA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluorododecanoic acid (PFDoDA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluoroheptane sulfonic acid (PFHpS)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluoroheptanoic acid (PFHpA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluorohexane sulfonic acid (PFHxS)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluorohexanoic acid (PFHxA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluorononanoic acid (PFNA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluorooctane sulfonamide (FOSA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
<b>Perfluorooctane sulfonic acid (PFOS)</b>	0.07	0.012	<0.0036	<0.0035	<b>0.028</b>	<b>0.014</b>	<0.0036
Perfluorooctanoic acid (PFOA)	0.07	12	<0.0018	<0.0018	0.0071	0.0051	<0.0018
Perfluoropentanoic acid (PFPeA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluorotetradecanoic acid (PFTeDA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluorotridecanoic acid (PFTriDA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluoroundecanoic acid (PFUnDA)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036
Perfluorononane sulfonic acid (PFNS)	NA	NA	<0.0072	<0.0071	<0.007	<0.0071	<0.0072
Perfluoropentane sulfonic acid (PFPeS)	NA	NA	<0.0036	<0.0035	<0.0035	<0.0035	<0.0036

**TABLE 4 - NOTES**  
**SUMMARY OF VAP GROUNDWATER ANALYSIS - PFAS**  
House Street Site - 1855 House Street NE  
Plainfield Township, Kent County, MI

16.0062335.52  
Page 1 of 1  
1/3/2019

NOTES:

1. Concentration and criteria units are micrograms per liter ( $\mu\text{g/L}$ ) or parts per billion (ppb); "< RL" indicates the compound was analyzed for but not detected above the method detection limit; RL = Reporting Limit
2. ***BOLD, Italic*** number with a thick border indicates that the compound was detected greater than one of the generic cleanup criteria listed.
3. Michigan Part 201 groundwater cleanup criteria protective of drinking water uses and Michigan Part 201 groundwater surface water interface criteria were based on MDEQ 's Table 1, Groundwater: Residential and Nonresidential, Part 201 Generic Cleanup Criteria and Screening Levels, June 2018.
4. The Michigan Part 201 groundwater cleanup criteria protective of drinking water uses of 0.07 ppb was established for the combined concentrations of PFOA and PFOS.





**GZA**  
**GeoEnvironmental, Inc.**  
 Engineers and Scientists

Wolverine World Wide, Inc.

House Street

Belmont, Michigan

Boring No.: MW-26S

Page: 1 of 1

File No.: 16.0062335.52

Check: John Morehouse

Contractor: Stearns Drilling Company

Foreman: Jerry Huntoon

Logged by: John Morehouse

Date Start/Finish: 11-12-18 / 11-12-18

Boring Location: NW Corner of Intersection

GS Elev.: Datum:

Auger/  
Casing

Sampler

Type: Hollow Stem Auger

Split Spoon

O.D. / I.D.: 8.0" / 4.25"

2.0" / 1 3/8"

Hammer Wt.: 140lbs

NA

Hammer Fall: 30"

NA

TOC Elev.: NA

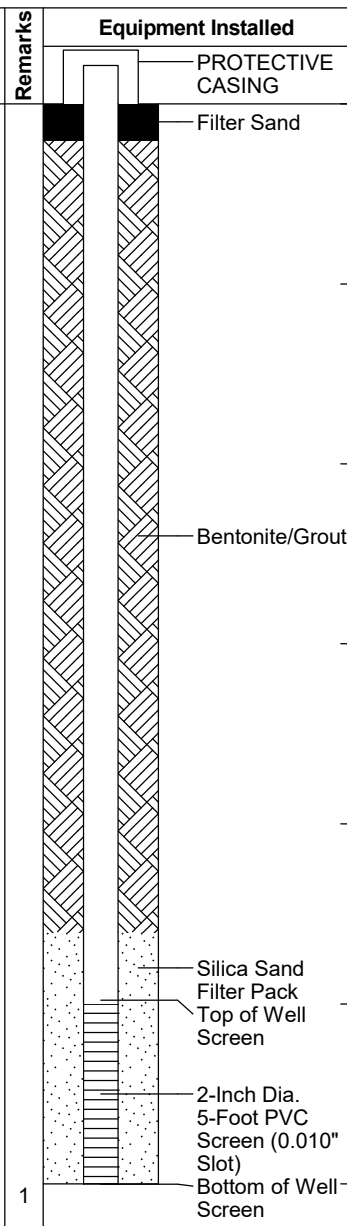
NA

**GROUNDWATER READINGS**

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				PROTECTIVE CASING	Filter Sand
1						See SB-26/MW-26D boring log for sample description and classification.				
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31						Bottom of Borehole at 30.0 Feet				



**REMARKS**

1. Monitoring well was installed in borehole upon completion. Well screen set from 25.0 to 30.0 feet below ground surface.

BORING WELL 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 12/31/18



**GZA**  
**GeoEnvironmental, Inc.**  
 Engineers and Scientists

Wolverine World Wide, Inc.

House Street

Belmont, Michigan

Boring No.: SB-26/MW-26D

Page: 1 of 8

File No.: 16.0062335.52

Check: John Morehouse

Contractor: Stearns Drilling Company

Foreman: Jerry Huntoon

Logged by: John Morehouse

Date Start/Finish: 11-8-18 / 11-15-18

Boring Location: NW Corner of Rogue River & Jupiter Intersection

GS Elev.: Datum:

Auger/  
Casing

Sampler

GROUNDWATER READINGS

Type: Hollow Stem Auger Split Spoon

O.D. / I.D.: 8.0" / 4.25" 2.0" / 1 3/8"

Hammer Wt.: 140lbs NA

Hammer Fall: 30" NA

TOC Elev.: NA NA

Date	Time	Depth	Casing	Stab

Surveyed By: NA Survey Date:

Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				PROTECTIVE CASING	Filter Sand
1	1	24/16	0-2	2-1 2-1	0.0 ppm	Very dark brown, moderately sorted, fine-grained SAND, some Silt, non to slightly cohesive, moist. Changing at 0.7 feet to: Dark yellowish-brown, moderately sorted, fine to medium-grained SAND, some Silt, moist. Changing at 1.3 feet to: NO RECOVERY.	SAND 1.3' NO RECOVERY			
2	2	24/12	2-4	2-2 3-5	0.0 ppm	Dark yellowish-brown, moderately sorted, fine to medium-grained SAND, some Silt, moist. Changing at 2.7 feet to: Brown to pale brown, poorly sorted, GRAVEL, little to some coarse to medium-grained Sand, trace Silt, moist. Changing at 3.0 feet to: NO RECOVERY.	SAND 2.7' GRAVEL 3' NO RECOVERY			
4	3	24/11	4-6	4-3 2-2	0.0 ppm	Brown to pale brown, poorly sorted, GRAVEL, little to some coarse to medium-grained Sand, trace Silt, moist. Changing at 4.4 feet to: Brownish-yellow, poorly sorted, fine to medium-grained SAND, trace Silt, moist. Changing at 4.6 feet to: Dark yellowish-brown, poorly sorted, fine to medium-grained SAND, trace Silt, moist. Changing at 4.9 feet to: NO RECOVERY.	GRAVEL 4.4' SAND 4.9' NO RECOVERY			
6	4	24/12	6-8	2-4 10-13	0.0 ppm	Dark yellowish-brown, poorly sorted, fine to medium-grained SAND, trace Silt, moist. Changing at 7.0 feet to: NO RECOVERY.	SAND 6' 7' NO RECOVERY			
8	5	24/16	8-10	9-11 9-8	0.0 ppm	Dark yellowish-brown, poorly sorted, medium to coarse-grained SAND, little Gravel, trace Silt, moist. Changing at 9.3 feet to: NO RECOVERY.	SAND 8' 9.3' NO RECOVERY			
9							10'			

REMARKS

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Boring No.: SB-26/MW-26D

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ\_GZA\_CORP.GDT 12/31/18



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data					
11	6	24/14	10-12	5-7 5-6	0.0 ppm	Dark yellowish-brown, poorly sorted, medium to coarse-grained SAND, little Gravel, trace Silt, moist. Changing at 10.9 feet to: Brown to pale brown, moderately sorted, coarse-grained SAND, some Gravel, trace Silt, moist. Changing at 11.2 feet to: NO RECOVERY.	SAND 11.2' NO RECOVERY			
12	7	24/14	12-14	5-13 23-24	0.0 ppm	Dark yellowish-brown, poorly sorted, coarse to medium-grained SAND, little to some Gravel, trace Silt, moist. Changing at 13.2 feet to: NO RECOVERY.	12' SAND 13.2' NO RECOVERY			
14	8	24/18	14-16	12-19 10-8	0.0 ppm	Dark yellowish-brown, poorly sorted, coarse to medium-grained SAND, little to some Gravel, trace Silt, moist. Changing at 15.5 feet to: NO RECOVERY.	14' SAND 15.5' NO RECOVERY			
16	9	24/16	16-18	12-19 21-50/5.5"	0.0 ppm	Dark yellowish-brown, poorly sorted, coarse to medium-grained SAND, little to some Gravel, trace Silt, moist. Changing at 17.2 feet to: Dark yellowish-brown, poorly sorted, coarse to medium-grained SAND, little to some Gravel, trace Silt, wet. Changing at 17.3 feet to: NO RECOVERY.	16' SAND 17.3' NO RECOVERY			
18	10	24/17	18-20	12-18 17-15	0.0 ppm	Dark yellowish-brown, poorly sorted, coarse to medium-grained SAND, little to some Gravel, trace Silt, wet. Changing at 18.4 feet to: Strong, brown, poorly sorted, SILT & CLAY, some Sand, non to slightly plastic, cohesive, grading to reddish-brown, moderately well sorted, CLAY & SILT, little Sand, plastic, cohesive, moist. Changing at 19.4 feet to: NO RECOVERY.	18' SAND 18.4' SILT & CLAY grading to CLAY & SILT 19.4' NO RECOVERY			
20	11	24/18	20-22	12-20 20-26	0.0 ppm	Dark yellowish-brown, poorly sorted, coarse to medium-grained SAND, little to some Gravel, trace Silt, wet. Changing at 20.6 feet to: Reddish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 20.9 feet to: Dark gray, well sorted, Silty CLAY, laminated, plastic, cohesive, moist. Changing at 21.5 feet to:	20' SAND 20.9' Silty CLAY 21.5'			
<b>REMARKS</b>										

BORING WELL 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 12/31/18

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Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed				
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data								
22	12	24/20	22-24	11-13 17-20	0.0 ppm	NO RECOVERY.	NO 22' RECOVERY SAND	1					
23						Dark grayish-brown, poorly sorted, Clayey SAND, little Silt, trace Gravel, slightly plastic, cohesive, moist. Changing at 23.2 feet to: Brown, well sorted, fine to medium-grained SAND, trace Silt, moist to wet. Changing at 23.3 feet to: Dark grayish-brown, poorly sorted, Clayey SAND, little Silt, trace Gravel, slightly plastic, cohesive, moist. Changing at 23.6 feet to: NO RECOVERY.	23.6'						
24	13	24/17	24-26	4-13 20-25	0.0 ppm	Grayish-brown to dark grayish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 25.2 feet to: Dark grayish-brown to grayish-brown, very well sorted, SILT, some fine-grained Sand, slightly cohesive, wet. Changing at 25.4 feet to: NO RECOVERY.	24' NO RECOVERY SAND						
25						25.2'							
26	14	24/18	26-28	14-22 23-19	0.0 ppm	Dark grayish-brown to grayish-brown, very well sorted, SILT, some fine-grained Sand, slightly cohesive, wet with occurring thin, layers of Silty CLAY, plastic, cohesive, moist. Changing at 27.5 feet to: NO RECOVERY.	25.4' SILT NO RECOVERY						
27						26' Silty CLAY							
28	15	24/24	28-30	10-16 23-20	0.0 ppm	Grayish-brown to dark grayish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 28.3 feet to: Dark gray, well sorted, Silty CLAY, plastic, cohesive, moist. Changing at 28.9 feet to: Grayish-brown to dark grayish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 29.2 feet to: Dark gray, well sorted, Silty CLAY, plastic, cohesive, moist. Changing at 29.3 feet to: Grayish-brown to dark grayish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 29.6 feet to: Dark gray, well sorted, Silty CLAY, plastic, cohesive, moist. Changing at 29.8 feet to: Grayish-brown to dark grayish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 29.9 feet to: Dark gray, well sorted, Silty CLAY, plastic, cohesive, moist.	27.5' NO RECOVERY						
29						28' SAND							
30	16	24/22	30-32	8-20 20-27	0.0 ppm	Grayish-brown to dark grayish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 29.6 feet to: Dark gray, well sorted, Silty CLAY, plastic, cohesive, moist. Changing at 29.8 feet to: Grayish-brown to dark grayish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 29.9 feet to: Dark gray, well sorted, Silty CLAY, plastic, cohesive, moist.	28.3' Silty CLAY						
31						28.9' SAND							
32	17	24/23	32-34	9-16 24-34	0.0 ppm	Dark grayish-brown, poorly sorted, CLAY & SILT, little Sand, plastic, cohesive, moist. Changing at 31.8 feet to: NO RECOVERY. Dark gray, poorly sorted. SILT & CLAY, some Sand, plastic, cohesive, moist. changing at 32.4 feet to: Grayish-brown to	29.2' Silty CLAY						
33						29.6' SAND							
							30' Silty CLAY CLAY & SILT						
							31.8'						
							32' NO RECOVERY SILT & CLAY						
							32.4' SAND						
							32.5' SILT & CLAY						
							32.9' SAND						
							33.2'						

1. Groundwater was encountered at approximately 24.0 feet below ground surface.

REMARKS

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Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data					
34	18	24/18	34-36	12-14 27-42	0.0 ppm	dark grayish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 32.5 feet to: Dark gray, poorly sorted, SILT & CLAY, some Sand, plastic, cohesive, moist. Changing at 32.9 feet to: Grayish-brown to dark grayish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 33.2 feet to: Dark gray, poorly sorted, SILT & CLAY, some Sand, plastic, cohesive, moist. Changing at 33.9 feet to: NO RECOVERY.	SILT & CLAY 33.9' 34' NO RECOVERY SILT 34.8' Silty CLAY 35.5' SAND 35.9' 36' NO RECOVERY 36.4' Silty CLAY 36.6' Alternating Silty CLAY and SAND SAND 37.5' Silty CLAY 37.8' 38' NO RECOVERY Silty CLAY			
35										
36	19	24/22	36-38	2-13 23-19	0.0 ppm	Dark grayish-brown to brown, well sorted, cohesive, wet. Changing at 34.8 feet to: Dark brown, well sorted, Silty CLAY, plastic, cohesive, moist. Changing at 35.5 feet to: Dark grayish-brown to grayish-brown, well sorted, fine-grained SAND, some Silt, non-plastic, cohesive, wet. Changing at 35.9 feet to: NO RECOVERY.				
37										
38	20	24/24	38-40	8-14 19-23	0.0 ppm	Dark brown, well sorted, Silty CLAY, plastic, cohesive, moist. Changing at 36.4 feet to: Alternating seams of dark brown, well sorted, fine-grained SAND, moist. Changing at 36.6 feet to: Dark grayish-brown to grayish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 37.5 feet to: Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist. Changing at 37.8 feet to: NO RECOVERY.				Bentonite/Grout
39										
40	21	24/24	40-42	5-13 21-36	0.0 ppm	Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist. Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist.				
41										
42	22	24/24	42-44	9-19 27-45	0.0 ppm	Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist.				
43										
44	23	24/24	44-46	11-17 30-50/5.5"	0.0 ppm	Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist.				

REMARKS

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BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ\_GZA\_CORP.GDT 12/31/18



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data					
46	24	24/18	46-48	3-16 29-27	0.0 ppm	Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist. Changing at 47.3 feet to: Dark yellowish-brown, poorly sorted, SILT & CLAY, some Sand, moderately plastic, cohesive, moist. Changing at 47.4 feet to: Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist. Changing at 47.5 feet to: NO RECOVERY.	Silty CLAY			
47							47.3' 47.4' SILT & CLAY 47.5' Silty CLAY			
48	25	24/24	48-50	10-15 28-29	0.0 ppm	Alternating seams of dark yellowish-brown, well sorted, fine to medium-grained Sand, trace Silt, wet, and dark yellowish-brown, poorly sorted, SILT & CLAY, some Sand, moderately plastic, cohesive, moist. Changing at 49.8 feet to: Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist.	NO RECOVERY Alternating SAND and Silty CLAY			
49							49.8'			
50	26	24/23	50-52	11-25 37-48	0.0 ppm	Dark yellowish-brown, well sorted, fine to medium-grained SAND, trace Silt, wet. Changing at 50.4 feet to: Dark yellowish-brown, moderately well sorted, fine to medium-grained SAND, some Silt, wet. Changing at 50.5 feet to: Dark grayish-brown, well sorted, Silty CLAY, plastic, cohesive, moist. Changing at 50.7 feet to: Dark yellowish-brown, moderately well sorted, fine to medium-grained SAND, some Silt, wet. Changing at 50.7 feet to: NO RECOVERY.	Silty CLAY SAND			
51							50.5' 50.7' Silty CLAY SAND			
52	27	24/12	52-54	7-8 9-18	0.0 ppm	Grayish-brown to light grayish-brown, well sorted, fine-grained SAND, some Silt, wet. Changing at 51.3 feet to: Grayish-brown to light grayish-brown, well sorted, fine-grained SAND, some Silt, wet. Changing at 51.9 feet to: NO RECOVERY. Grayish-brown to light grayish-brown, well sorted, fine-grained SAND, some Silt, wet; very thin lenses of Silty Clay at 52.5 feet and 52.9 feet. Changing at 53.0 feet to: NO RECOVERY.	51.9' 52' NO RECOVERY SAND/lenses of Silty Clay			
53							53'	NO RECOVERY		
54	28	24/20	54-56	45-36-50/6"	0.0 ppm	Grayish-brown to light grayish-brown, well sorted, fine-grained SAND, some Silt, wet. Changing at 54.8 feet to: Dark grayish-brown to light grayish-brown, poorly sorted, SILT & CLAY, little Sand, trace Gravel, plastic, cohesive, moist. Changing at 55.7 feet to: NO RECOVERY.	SAND			
55							54.8'	SILT & CLAY		
56	29	24/20	56-58	3-11 20-21	0.0 ppm	Dark yellowish-brown to grayish-brown, poorly sorted, SILT & CLAY, little Sand, trace Gravel, plastic, cohesive, moist.	55.7' NO RECOVERY SILT & CLAY SAND			
REMARKS										

BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 12/31/18

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Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data					
57						Changing at 56.2 feet to: Yellowish-brown, poorly sorted, fine to coarse-grained SAND, some Gravel, trace Silt, wet. Changing at 57.6 feet to: NO RECOVERY.	SAND			
							57.6'			
							NO RECOVERY			
58	30	24/13	58-60	5-1 7-34	0.0 ppm	Yellowish-brown, poorly sorted, fine to coarse-grained SAND, some Gravel, trace Silt, wet. Changing at 58.8 feet to: Brown, poorly sorted, fine to coarse-grained SAND, little Gravel, trace Silt, wet. Changing at 59.1 feet to: NO RECOVERY.	SAND			
							59.1'			
							NO RECOVERY			
60	31	24/22	60-62	31-44 44-42	0.0 ppm	Brown to dark yellowish-brown to yellowish-brown, poorly sorted, fine to coarse-grained SAND, little Gravel, trace Silt, wet. Changing at 61.8 feet to: NO RECOVERY.	SAND			
							60'			
							61.8'			
							NO RECOVERY			
62	32	24/20	62-64	3-16 36-50	0.0 ppm	Brown to dark yellowish-brown to yellowish-brown, poorly sorted, fine to coarse-grained SAND, little Gravel, trace Silt, wet. Changing at 62.2 feet to: Dark yellowish-brown, well sorted, fine-grained SAND, some Silt, slightly cohesive, moist to wet. Changing at 62.8 feet to: Brown to dark yellowish-brown to yellowish-brown, poorly sorted, fine to coarse-grained SAND, little Gravel, trace Silt, wet. Changing at 63.7 feet to: NO RECOVERY.	SAND			
							62'			
							NO RECOVERY			
							63.7'			
							NO RECOVERY			
64	33	24/16	64-66	11-30 39-50/5.5"	0.0 ppm	Dark yellowish-brown, moderately well sorted, fine to medium-grained SAND, trace Silt, trace Gravel, wet. Changing at 65.3 feet to: NO RECOVERY.	SAND			
							64'			
							NO RECOVERY			
							65.3'			
							NO RECOVERY			
66	34	24/7	66-68	3-18-50/5"	0.0 ppm	Dark yellowish-brown, moderately well sorted, fine to medium-grained SAND, trace Silt, trace Gravel, wet. Changing at 66.6 feet to: NO RECOVERY.	SAND			
							66'			
							66.6'			
							NO RECOVERY			
68	35	24/12	68-70	26-50/5.5"	0.0 ppm	Yellowish-brown, moderately well sorted,	SAND			
							68'			

REMARKS

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BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ GZA CORP.GDT 12/31/18



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed	
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data					
69	36	24/10	70-72	18-38 45-50/5"	0.0 ppm	fine to medium-grained SAND, trace Silt, trace Gravel, wet. Changing at 68.4 feet to: Yellowish-brown, moderately well sorted, coarse-grained SAND, trace Silt, wet. Changing at 68.5 feet to: Dark yellowish-brown, moderately well sorted, fine to medium-grained SAND, trace Silt, trace Gravel, wet. Changing at 68.6 feet to: NO RECOVERY.	68.6' SAND	[Diagrammatic representation of soil layers]	Silica Sand Filter Pack	
70						Dark yellowish-brown, poorly sorted, fine to coarse-grained SAND, trace Gravel, trace Silt, wet. Changing at 70.8 feet to: NO RECOVERY.	70' NO RECOVERY			
71						70.8' SAND				
72	37	24/22	72-74	17-34 36-40	0.0 ppm	Dark yellowish-brown, poorly sorted, fine to coarse-grained SAND, trace Gravel, trace Silt, wet. Changing at 72.7 feet to: Yellowish-brown, poorly sorted, fine to coarse-grained SAND, some Silt, trace Gravel, moist. Changing at 72.8 feet to: Dark yellowish-brown, poorly sorted, fine to coarse-grained SAND, trace Gravel, trace Silt, grading coarser, wet. Changing 73.8 feet to: NO RECOVERY.	72' NO RECOVERY	[Diagrammatic representation of soil layers]	Top of Well Screen	
73						Dark grayish-brown, poorly sorted, coarse to medium-grained SAND, trace Gravel, trace Silt, wet. Changing at 75.7 feet to: Dark grayish-brown to dark brown, poorly sorted, fine-grained SAND, some Silt, trace Clay, non to slightly plastic, cohesive, moist. Changing at 75.8 feet to: Dark grayish-brown, poorly sorted, coarse to medium-grained SAND, trace Gravel, trace Silt, wet. Changing at 75.9 feet to: NO RECOVERY.	73.8' SAND			
74	38	24/23	74-76	13-20 28-33	0.0 ppm	Dark grayish-brown, poorly sorted, coarse to medium-grained SAND, trace Gravel, trace Silt, wet. Changing at 75.7 feet to: Dark grayish-brown to dark brown, poorly sorted, fine-grained SAND, some Silt, trace Clay, non to slightly plastic, cohesive, moist. Changing at 75.8 feet to: Dark grayish-brown, poorly sorted, coarse to medium-grained SAND, trace Gravel, trace Silt, wet. Changing at 75.9 feet to: NO RECOVERY.	74' NO RECOVERY SAND	[Diagrammatic representation of soil layers]	Top of Well Screen	
75						Dark grayish-brown, poorly sorted, coarse to medium-grained SAND, trace Gravel, trace Silt, wet. Changing at 77.4 feet to: NO RECOVERY.	75.9' NO RECOVERY SAND			
76	39	24/17	76-78	30-48-50/4"	0.0 ppm	Dark grayish-brown, poorly sorted, coarse to medium-grained SAND, trace Gravel, trace Silt, wet. Changing at 77.4 feet to: NO RECOVERY.	76' NO RECOVERY SAND	[Diagrammatic representation of soil layers]	Top of Well Screen	
77						Dark grayish-brown, poorly sorted, fine to medium-grained SAND, little Gravel, little Silt, trace Clay, slightly plastic, cohesive, moist. Changing at 79.2 feet to: Dark grayish-brown, poorly sorted, coarse to medium-grained SAND, trace Gravel, trace Silt, wet. Changing at 79.8 feet to: NO RECOVERY.	77.4' NO RECOVERY			
78	40	24/22	78-80	12-46-50/4"	0.0 ppm	Dark grayish-brown, poorly sorted, coarse to medium-grained SAND, trace Gravel, trace Silt, wet. Changing at 78.3 feet to: Dark grayish-brown, poorly sorted, fine to medium-grained SAND, little Gravel, little Silt, trace Clay, slightly plastic, cohesive, moist. Changing at 79.2 feet to: Dark grayish-brown, poorly sorted, coarse to medium-grained SAND, trace Gravel, trace Silt, wet. Changing at 79.8 feet to: NO RECOVERY.	78' SAND	[Diagrammatic representation of soil layers]	Top of Well Screen	
79						79.8' NO				

REMARKS

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BORING WELL: 62355.52 HOUSE STREET COMPLETE.GPJ\_GZA\_CORP.GDT 12/31/18



Depth	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Test Data				
81	41	24/17	80-82	10-32-50	0.0 ppm	RECOVERY. Dark grayish-brown, moderately well sorted, fine to medium-grained SAND, trace Silt, moist to wet. Changing at 81.4 feet to: NO RECOVERY.	RECOVERY SAND 81.4'	<p>2-Inch Dia. 5-Foot PVC Screen (0.010" Slot)</p> <p>Bottom of Well Screen</p>	
82	42	24/14	82-84	12-27 45-50/3"	0.0 ppm	Light yellowish-brown, poorly sorted, fine to medium-grained SAND, some Silt, little Gravel, little Clay, cohesive, moist. Changing at 83.2 feet to: NO RECOVERY.	NO RECOVERY 82' SAND		
83							83.2' NO RECOVERY		
84	43	24/10	84-86	26-50/3"	0.0 ppm	Dark yellowish-brown, poorly sorted, fine to medium-grained SAND, some Silt, little Gravel, little Clay, cohesive, moist. Changing at 84.8 feet to: NO RECOVERY.	84' SAND		
85							84.8' NO RECOVERY		
86	44	24/12	86-88	30-50/3"	0.0 ppm	Dark grayish-brown, poorly sorted, SILT & CLAY, some Sand, trace Gravel, moderately plastic, cohesive, moist. Changing at 87.0 feet to: NO RECOVERY.	86' SILT & CLAY		
87							87' NO RECOVERY		
88						Bottom of Borehole at 88.0 Feet	88'		

**REMARKS**  
2. Monitoring well was installed in borehole upon completion. Well screen set from approximately 78.0 to 83.0 feet below ground surface.

BORING WELL - 62355.52 HOUSE STREET COMPLETE.GPJ\_GZA\_CORP.GDT 12/31/18