

Letter of Transmittal

Attention:	Mr. Tauren Beggs Hydrogeologist, WDNR 2984 Shawano Ave Green Bay, WI 54313	Date:	10/28/21
Project reference:	Former Newton Pit BRRTS No. 02-36-000268	Project number:	60135471

We are sending you the following:

Number of originals:	Number of copies:	Description:
One	Zero	Emerging Contaminant Work Plan Update #5 – Up-gradient Potable Well Investigation

Mr. Beggs,

Attached is the Emerging Contaminant Work Plan Update #5 – Up-gradient Potable Well Investigation associated with the Former Town of Newton Gravel Pit, Manitowoc Wisconsin.

Please let me know if you have any questions.

Thank you.



David Henderson, P.E.
Senior Project Manager
D 414.944.6190 C 414.429.8304
dave.henderson@aecom.com

Cc: Kathleen M. McDaniel, City Attorney, City of Manitowoc
Dan Koski, Director of Public Infrastructure, City of Manitowoc

October 28, 2021

AECOM Project No.
60135471(52518)**BRRTS No.**
02-36-000268

Mr. Tauren Beggs
Hydrogeologist
Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727

**Emerging Contaminant Work Plan Update #5 – Up-gradient Potable Well Investigation
Former Town of Newton Gravel Pit**

Dear Mr. Beggs,

AECOM Technical Services, Inc. (AECOM), on the behalf of the City of Manitowoc (City), is pleased to submit this emerging contaminant work plan update for an up-gradient potable well sampling event as a continuation of the investigation of per- and polyfluoroalkyl substances (PFAS) related to the Former Town of Newton Gravel Pit site, 3130 Hecker Road, Manitowoc Wisconsin.

Presented below is an emerging contaminant project update along with the proposed scope of work for additional PFAS potable well sampling.

Emerging Contaminant Project Update

The Former Newton Gravel Pit property is owned by the City of Manitowoc, is approximately 58 acres in size, and is located at 3130 Hecker Road in the Town of Newton, Manitowoc County Wisconsin. The property is situated in the southeast quarter of the northwest quarter of Section 02, Township 18N, Range 23E. A property location map is included as Figure 1.

The land use near the property is rural. Bordering the property to the west is an active gravel pit, to the north is farmland and forest, to the east is farmland and rural residences, and to the south is farmland and an active gravel pit. A small creek, Silver Creek, flows through the property from the north/northwest to the south/southeast.

During the 1960's and early 1970's liquid industrial waste was disposed of within two source areas. The Western Source Area is located on an elevated area of the property along the western property line. The Northern Source Area is located on the north central portion of the property. In addition, historical aerial photos indicate former drying ponds were present in the northwest corner of the property.

In July 2018, at the request of the Wisconsin Department of Natural Resources (WDNR), AECOM conducted a limited groundwater assessment for PFAS¹. The limited investigation focused on the property boundaries, the Western Source Area, the Northern Source Area, and based on anecdotal information along with historic aerial photography, an area in the northwestern portion of the property that historically contained former drying ponds. The limited investigation sampled groundwater from seven monitoring wells. Groundwater samples were analyzed for PFAS compounds using the Modified EPA Method 537, isotope dilution method, for the Michigan 24 compound list. Laboratory analytical results indicated that PFAS are present in the groundwater beneath the site. and that concentrations of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) compounds exceed the EPA advisory level lifetime HAL at one location (WT-01).

On September 24, 2018, AECOM notified² the WDNR that emerging contaminants (i.e. PFAS) were present in the groundwater at the Former Newton Pit site. In response to the notification, the WDNR issued an updated responsible

¹ *Limited Groundwater Assessment for Emerging Contaminants*, Former Town of Newton Gravel Pit, 3130 Hecker Road, Manitowoc, Wisconsin, BRRTS no. 02-3-000268, AECOM Project No. 60581251, October 22, 2018

² *Notification for Hazardous Substance Discharge*, WDNR Form 4400-225, submitted to WDNR on September 24, 2018

party (RP) letter³ to the City informing them of their legal responsibilities and the next steps to be taken associated with the PFAS release.

In compliance with the updated RP letter, an *Emerging Contaminant Monitoring Work Plan*⁴ was developed and submitted to the WDNR for initiating an emerging contaminant site investigation. The work plan included both potable well and groundwater monitoring well sampling activities. The emerging contaminant potable well sampling was conducted during the October 2018 event and the results have been reported under a separate cover⁵.

The emerging contaminant groundwater investigation was conducted in association with the fall 2018 on-site groundwater sampling event⁶. In total, between the two 2018 PFAS sampling events, 16 on-site wells and the groundwater treatment pond were sampled and analyzed using EPA Method 537 modified, isotope dilution, for the State of Michigan list of 24 PFAS. Analytical results indicated that PFAS were present in the on-site groundwater and in the waters of the treatment pond. At the time, no source area was defined for the PFAS.

In March of 2020 the City provided a *Revised Emerging Contaminant Work Plan Update #1*⁷ to the WDNR for continued groundwater, potable well, and surface water sampling. The workplan was approved by the WDNR, with additions to the potable well and surface water monitoring scope of work.

The Work Plan Update #1 groundwater monitoring⁸ was conducted in June of 2020 and it included PFAS sampling for the remaining 38 monitoring wells associated with the site. Groundwater samples were analyzed using EPA Method 537 modified, isotope dilution, for the Wisconsin list of 36 PFAS. Analytical results indicated that PFAS were present in the wells sampled.

The Work Plan Update #1 potable well sampling⁹ was conducted in conjunction with the June 2020 groundwater event. In total, 15 addresses were scheduled for sampling and 15 addresses were sampled. Water samples were analyzed using EPA Method 537 modified, isotope dilution, for the Wisconsin list of 36 PFAS. The laboratory analytical data indicated that PFAS are present in the potable wells sampled.

The Work Plan Update #1 - Silver Creek surface water sampling¹⁰ was conducted during August and November 2020. Samples were obtained both upstream and downstream of the gravel pit site. Water samples were analyzed using EPA Method 537 modified, isotope dilution, for the Wisconsin list of 36 PFAS. In total, 15 surface water samples were obtained from 11 locations during the two events. Analytical results indicate that PFAS were present in the surface water at all sample locations.

On November 6, 2020, the Wisconsin Department of Health Services reported-out the *11th Cycle of Groundwater Standards Proposals*. The recommendation included individual standards for 12 PFAS and combined standards for 6 PFAS.

Effective March 1, 2021 the WDNR modified the Wisconsin 36 PFAS laboratory analytical list. Three PFAS were removed from the original list, making the updated Wisconsin PFAS laboratory analytical list of 33 compounds.

³ Roxanne N. Chronert, WDNR, to City of Manitowoc, September 24, 2018. *Reported Contamination at Manitowoc City/Former Newton Tn Gravel Pit*, 3130 Hecker Road, Manitowoc.

⁴ *Emerging Contaminant Monitoring Work Plan and Project Status Update*, Former Town of Newton Gravel Pit, BRRTS no. 02-3-000268, AECOM Project No. 60135471(82518), October 24, 2018

⁵ *October 2018 VOC Semi-Annual Potable Well Monitoring Letter Report and Initiation of Per- and Polyfluoroalkyl Substances (PFAS) Monitoring*, Former Town of Newton Gravel Pit, BRRTS No. 02-36-000268, AECOM Project No: 60135471(82518), February 18, 2019

⁶ *Northern Source Area Sampling, 2018 VOC Annual Groundwater Monitoring, and Initial Emerging Contaminant Groundwater Investigation Report*, Former Town of Newton Gravel Pit, BRRTS No. 02-36-000268, WDNR FID No. 436104020, AECOM Project No: 60135471(82518), June 5, 2020

⁷ *Revised Emerging Contaminant Work Plan Update #1*, Former Town of Newton Gravel Pit, BRRTS No. 02-36-000268, AECOM Project No: 60135471(82518), March 18, 2020

⁸ *Emerging Contaminant Groundwater Investigation Update Report, June 2020*, Former Town of Newton Gravel Pit, BRRTS No. 02-36-000268, WDNR FID No. 436104020, AECOM Project No: 60135471(82518), February 26, 2021

⁹ *June 2020 VOC Semi-Annual and PFAS Potable Well Monitoring Letter Report*, BRRTS No. 02-36-000268, AECOM Project No: 60135471(82518), December 30, 2020

¹⁰ *2020 Silver Creek Emerging Contaminants Sampling Letter Report*, Former Town of Newton Gravel Pit, BRRTS No. 02-36-000268, AECOM Project No: 60135471(82518), March 15, 2021

On April 19, 2021 the City provided an *Emerging Contaminant Work Plan Update #2 – Continued On-Site Investigation*¹¹ to the WDNR for work focused on the former drying ponds present in the northwest corner of the property. The investigation was also designed to aid in the hydrological understanding of the northwest corner of the property, especially how groundwater flow relates to the surface water of Silver Creek.

The work included soil and groundwater sampling for six water table or piezometer wells installed at three locations during August 2021. Samples were analyzed using the Modified EPA Method 537, isotope dilution method, State of Wisconsin list of 33 PFAS. The results of the former drying ponds investigation have not been published yet.

On April 20, 2021 the City provided an *Emerging Contaminant Work Plan Update #3 – Area Wide Potable Well Investigation*¹² to the WDNR for a May/June 2021 potable well sampling event. A total of 96 potable wells were scheduled for sampling. Sampling was proposed along Hecker Road, Viebahn Street, CTH CR, Thunder Ridge Road, Blackhawk Court, Silver Creek Road, South 26th Street, Elm Road, Orchard Lane, South 19th Street, and South 15th Street. The work was scheduled to be conducted in conjunction with the *Area Wide VOC Five Year Potable Well Monitoring Work Plan*¹³. The results of the May/June 2021 potable well sampling event have not been published yet.

Emerging Contaminant Work Plan Update #4 – 2021 Groundwater and Surface Water Sampling was submitted to the WDNR on October 27, 2021. The work plan proposes a November 2021 sampling of all existing on-site and off-site monitoring wells, a total of 60 wells, surface water sampling at five locations along Silver Creek, and obtaining a water sample from the on-site groundwater treatment pond.

Emerging Contaminant Work Plan Update #5

This work plan update is provided in general accordance with the requirements of the Wisconsin Administrative Code Chapter NR 700 rule series with the understanding that multiple work plans for the project are currently in place and approved by the WDNR. Therefore, this work plan update is intended to be reviewed in conjunction with the existing plans.

The proposed potable well sampling locations, schedule, and sampling methods are presented as one-time only work plan. Future sampling will be based on the results and WDNR discussions.

Potable Well Sampling Schedule and Locations

A total of 19 potable wells are scheduled for sampling during this event. Sampling is proposed at upgradient locations along Fricke Drive, Gass Lake Road, Viebahn Street, and Silver Creek Road. The work is tentatively scheduled to be conducted in conjunction with the *Area Wide VOC Five Year Potable Well Monitoring Work Plan* sampling event tentatively scheduled for November 2021.

The potable well sampling locations are categorized as follows:

- Confirmation sampling wells: wells previously sampled that are to be re-sampled.
- Proposed new sampling location wells: wells not previously sampled.

A description of each sampling location and the proposed location specific sampling schedule are presented below. This information is also detailed on Table 1 and presented on Figure 2.

Confirmation Sampling:



Confirmation sampling wells are locations with detectable PFAS as follows:

- Proposed PFAS NR 140 Enforcement Standard (ES) exceedances, map color code symbol: ●

¹¹ *Emerging Contaminant Work Plan Update #2 – Continued On-Site Investigation*, Former Town of Newton Gravel Pit, BRRTS No. 02-36-000268, AECOM Project No: 60135471(82518), April 19, 2021

¹² *Emerging Contaminant Work Plan Update #3 – Area Wide Potable Well Investigation*, Former Town of Newton Gravel Pit, BRRTS No. 02-36-000268, AECOM Project No: 60135471(82518), April 20, 2021

¹³ *Area Wide VOC Five Year Potable Well Sampling Work Plan*, Former Town of Newton Gravel Pit, 3130 Hecker Road, Manitowoc, Wisconsin, BRRTS No. 02-36-000268, AECOM Project No: 60135471(82518), April 16, 2021

- Proposed PFAS NR 140 Preventative Action Limit (PAL) exceedances, map color code symbol: 
- PFAS detects below proposed PAL levels, map color code symbol: 

Confirmation sampling includes a total of 4 address locations as follows.

- 5107 Viebahn Street
- 5202 Silver Creek Road
- 3609 M & M Lane
- 2925 Fricke Drive

Proposed New Sampling Locations:

The proposed new sampling locations have been selected to geographically extend the original area of sampling up-gradient (i.e. northwest/west/southwest) of the Gravel Pit site.

The proposed new sampling locations are identified on Figure 2 with the color code symbol: 

Proposed new sampling locations includes a total of 15 wells as follows.

- | | | |
|---------------------|-----------------------|-----------------------|
| • 2741 Fricke Drive | • 2815 Fricke Drive | • 3111 Gass Lake Road |
| • 2747 Fricke Drive | • 3003 Gass Lake Road | • 3117 Gass Lake Road |
| • 2748 Fricke Drive | • 3011 Gass Lake Road | • 3223 Gass Lake Road |
| • 2751 Fricke Drive | • 3105 Gass Lake Road | • 3231 Gass Lake Road |
| • 2761 Fricke Drive | • 3107 Fricke Dr | • 3521 Gass Lake Road |

Methods

There are potential cross contamination issues associated with PFAS sampling due to the presence of these compounds in many commercial products. Therefore, AECOM PFAS-certified sampling teams will conduct the PFAS sampling events. AECOM certification requires attending an internal PFAS sampling training course and reviewing the AECOM PFAS Sampling Guidance document designed to make AECOM samplers aware of the products known to have tested positive for PFAS compounds, as well as identifying PFAS-free products that are appropriate to use in the sampling environment.

Potable well sampling for PFAS will include the following protocols:

- *Testing Laboratory:* WDNR PFAS certified laboratory, or a laboratory that has applied for Wisconsin certification, for analyses.
- *Laboratory Analysis:* Modified EPA Method 537.1 (isotope dilution method), State of Wisconsin list of 33 PFAS.
- *Sampling:* Where applicable, PFAS sampling will be conducted first, before VOC sampling. This is to provide a separation of time and distance between the PFAS sampling and the VOC sampling, which is collected in 40-ml glass vials with a Teflon septum (the Teflon septa is a possible source for PFAS).

Samples will be obtained from a sample port/valve prior to treatment equipment and at a location as close to the well as possible. This is typically a sample port/valve located next to the system pressure tank, or it may be the nearest cold-water hose bib. The system will be purged for at least 10 minutes immediately prior to sampling.

The water samples will be collected in laboratory-supplied 500ml HDPE bottles without preservative. The sample bottles, once filled, will be stored on ice in insulated coolers. The coolers will be shipped via FEDEX to the analytical laboratory for chemical analysis within the holding times specified by the analytical method (14 days). The samples will be transferred to the laboratory under standard chain of custody control.

- *Field Duplicate:* Duplicate Sample: One field dup will be obtained for every 10 samples.

- *Field Blanks:* The original Method 537 sampling protocol, which require field blanks at each sampling location, will be modified as follows:

Since sampling will occur within individual homeowner residences, no field blanks will be collected during the sampling event.

- *Equipment Blanks:* There will be no field sampling equipment used. Therefore, no equipment blanks will be obtained.
- *Laboratory Quality Control:* The test lab will provide a Level 4 data package. Due to the use of the isotope dilution method, Matrix Spike/Spike Duplication (MS/MSD) analysis will not be requested.
- *Data Validation:* AECOM will provide a data validation review using procedures described in the National Functional Guidelines for High Resolution Superfund Method Data Review (EPA, April 2016), as appropriate.
- *Reporting:* AECOM will present the PFAS sampling results in a potable well monitoring letter report. The report will also include historical PFAS potable well sampling results.

Results will be compared to the Wisconsin Department of Health Services (WDHS) Cycle 11 proposed PFAS ES and PAL limits. Additionally, a cumulative Hazard Index (HI) will be calculated using WDHS' recommended method for assessing the cumulative risk of PFAS using the individual compound Hazard Quotients (HQs).

Response Actions (alternative water management plan)

On June 14, 2021, the City requested concurrence¹⁴ from the WDNR for a proposed potable well sampling notification schedule as required under NR 716.14(1) *Samples from water supply wells*. The request was in accordance with NR 716.14(3).

The request was made to facilitate communication with the interested parties (i.e. homeowner/well users, the WDNR, and the second responsible party (RP)). The proposed notification schedule was based on the differences in laboratory turn-around-times (TATs) for VOC and PFAS results. There is typically a large time gap (i.e. weeks) between when VOC results are received and when the PFAS results are received.

The DNR concurred¹⁵ with the proposed sampling notification schedule as long as immediate notifications are followed when new health risks are found during sampling of VOCs and PFAS in the private wells.

Therefore, based on the sampling results, the following response actions will be implemented upon the City's receipt of the PFAS potable well monitoring laboratory results.

For potable wells sampled for only VOCs or only PFAS:

- When sample results indicate an immediate health or welfare concern (i.e. a new VOC ES exceedance or a new PFAS proposed ES/HI exceedance) the City will immediately notify the homeowner/well user, provide them with bottled water, and follow-up with written notification to the interested parties within 10 days, as per NR 716.14(1).
- If the VOC/PFAS results do not indicate an immediate health or welfare concern (i.e. results similar to historical results and/or no new VOC ES or proposed PFAS ES exceedances) the City will provide written notification of the results to the interested parties within 10 days, as per NR 716.14(1).
- Confirmation samples will be scheduled, as needed.
- Where appropriate, planning will begin for providing a new drinking water source. This may entail continuing to provide bottled and a longer-term solution such as a replacement potable well or the provision of City water.

¹⁴ Former Town of Newton Gravel Pit – NR 716.14 concurrence request, email correspondence from David Henderson, AECOM, and the City of Manitowoc project team, to Tauren Beggs, WDNR, Monday June 14, 2021, 11:23 AM

¹⁵ RE: Former Town of Newton Gravel Pit – NR 716.14 concurrence request, email correspondence from Tauren Beggs, WDNR, to David Henderson, AECOM, and the City of Manitowoc project team, Thursday June 17, 2021, 3:49 PM

For potable wells sampled for both VOCs and PFAS:

- When sample results indicate an immediate health or welfare concern (i.e. a new VOC ES exceedance or a new PFAS proposed ES/HI exceedance) the City will immediately notify the homeowner/well user and provide them with bottled water. The City will then provide the sample results to the interested parties within 10 days of being in receipt of both of the VOC and PFAS lab results, as per NR 716.14(1).
- If the VOC and/or PFAS results do not indicate an immediate health or welfare concern (i.e. results similar to historical results and/or no new VOC ES exceedances or no new PFAS proposed ES/HI exceedances) the City will provide written notification of the results to the interested parties within 10 days of being in receipt of both of the VOC and PFAS lab results, as per NR 716.14(1).
- Confirmation sampling will not be scheduled. Additional sampling may be conducted as outlined in a future PFAS potable well monitoring plan.

Step-out Plan

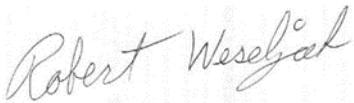
The need for additional phases of PFAS potable well sampling beyond what is proposed in this work plan will be evaluated pending the results from the proposed sampling and future discussions with the WDNR.

Closing

Unless otherwise notified by the WDNR, the City intends to proceed with the activities proposed in this Work Plan Update. If you have any questions, please contact Dave Henderson at 414.944.6190 or dave.henderson@aecom.com.

Sincerely,

AECOM Technical Services Inc.



Robert Weseljak, P.G.
AECOM
robert.weseljak@aecom.com



David Henderson, P.E.
AECOM
dave.henderson@aecom.com

enclosures: Table 1 Summary of Proposed Area Wide PFAS Potable Well Sampling Plan
Figure 1 Site Location Map
Figure 2 Up-gradient PFAS Potable Well Sampling Locations

cc: Kathleen M. McDaniel, City Attorney, City of Manitowoc
Dan Koski, Director of Public Infrastructure, City of Manitowoc



TABLE 1
 PROPOSED UP-GRADIENT PFAS POTABLE WELL SAMPLING PLAN
 FORMER TOWN OF NEWTON GRAVEL PIT
 MANITOWOC, WISCONSIN

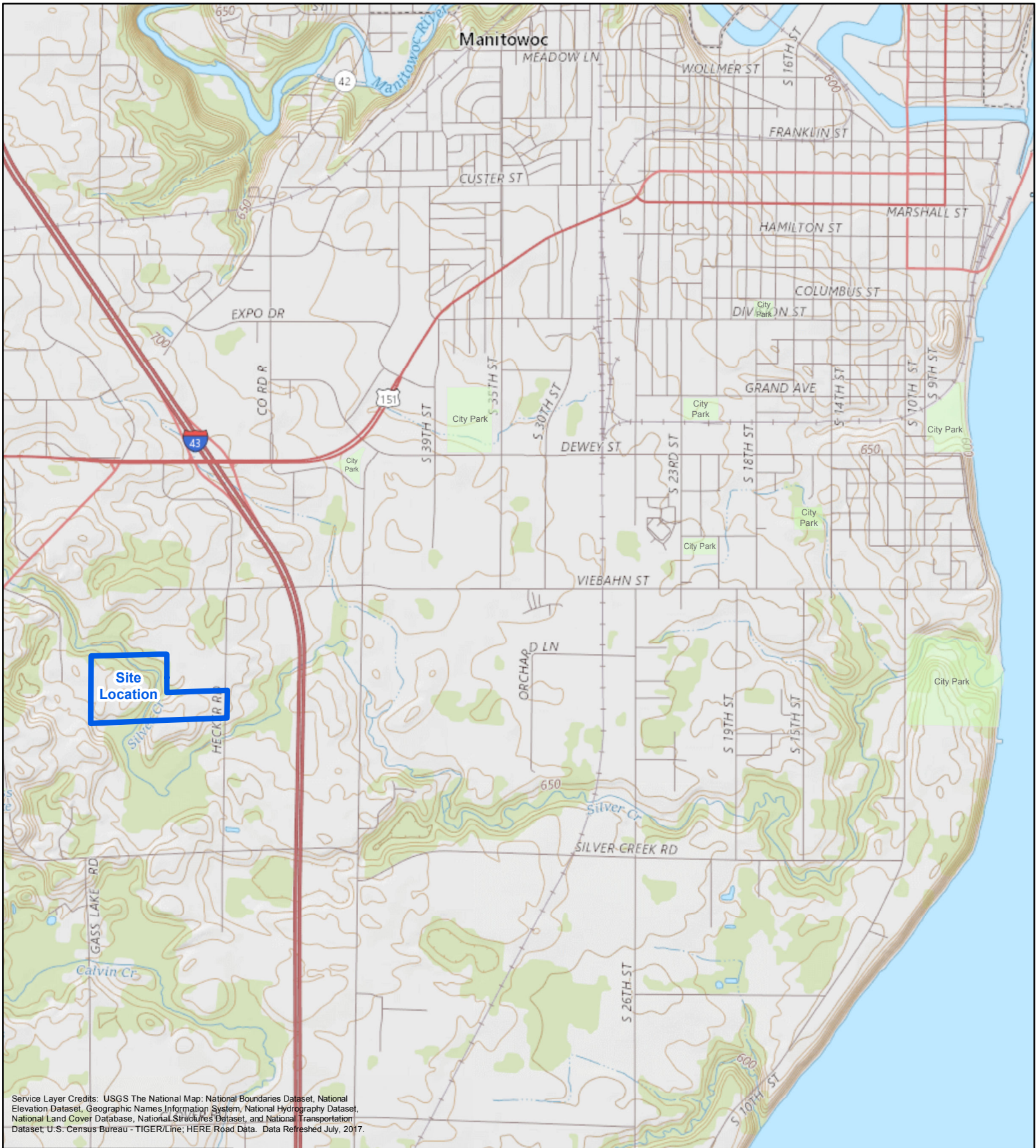
Well Address	Map Color Code	Date of Initial PFAS Sampling Event	2021
			November
Confirmation Sampling - Proposed PFAS NR 140 ES Exceedances			
2925 Fricke Dr.	●	June 2021	1
3720 Hecker Rd	●	June 2020	
3461(3417) Hecker Rd	●	November 2018	
3533 CTH CR	●	June 2020	
2706 CTH CR	●	June 2021	
2716 CTH CR	●	June 2021	
2911 CTH CR	●	May 2021	
3523 CTH CR	●	June 2021	
3611 CTH CR	●	May 2021	
4101 CTH CR	●	June 2021	
4125 CTH CR	●	June 2021	
3817 Viebahn St	●	June 2020	
4141 Viebahn St. / 2717 CTH CR (non-potable monitoring location)	●	June 2020	
4219 Viebahn St	●	June 2020	
4005 Thunder Ridge Rd, replacement well	●	June 2021	
4101 Thunder Ridge Rd	●	May 2021	
4111 Thunder Ridge Rd	●	June 2021	
4127 Thunder Ridge Rd	●	June 2020	
3921 Black Hawk Ct	●	May 2021	
4314 Silver Creek Rd	●	May 2021	
4747 Silver Creek Rd	●	June 2021	
4752 Silver Creek Rd	●	June 2021	
4904 Silver Creek Rd	●	June 2021	
2824 S 19TH ST, 2828 S 19TH ST and 2904 S 19TH ST (Shared Well)	●	June 2021	
2917 S 19TH ST	●	May 2021	
2918 S 19TH ST	●	June 2021	
3006 and 3008 19th ST (Duplex)	●	June 2021	
3011 S 19TH ST	●	May 2021	
2732 S 15TH ST	●	- - -	
2820 S 15TH ST	●	May 2021	
2827 S 15TH ST	●	May 2021	
3209 S 15TH ST and 3217 S 15TH ST (Shared Well)	●	June 2021	
Confirmation Sampling - Proposed PFAS NR 140 PAL Exceedances			
3609 M and M Ln	●	June 2021	1
3114 Hecker Rd	●	June 2020	
3121 Hecker Rd	●	June 2020	
3303 Hecker Rd, replacement well	●	June 2020	
3320 Hecker Rd	●	November 2018	
3327 Hecker Rd	●	November 2018	
3515 Hecker Rd, replacement well	●	June 2020	
3518 Hecker Rd, replacement well	●	June 2020	
3609 Hecker Rd, replacement well	●	June 2020	
3625 Hecker Rd	●	June 2020	
3702 Hecker Rd	●	November 2018	
3224 CTH CR	●	June 2021	
3312 CTH CR	●	June 2021	
3322 CTH CR	●	May 2021	
3403 CTH CR, replacement well	●	May 2021	
3412 CTH CR	●	May 2021	
3422 CTH CR	●	May 2021	
3504 CTH CR, replacement well	●	May 2021	
3626 CTH CR/3626 CTH CR #B	●	May 2021	
5107 Viebahn St	●	June 2021	1
3825 Viebahn St	●	May 2021	
4002 Thunder Ridge Rd, replacement well	●	June 2021	
4010 Thunder Ridge Rd, replacement well	●	May 2021	
4027 Thunder Ridge Rd	●	May 2021	
3911 Black Hawk Ct	●	June 2020	
4159 Silver Creek Rd	●	June 2020	
3902 Silver Creek Rd	●	June 2021	
4004 Silver Creek Rd	●	May 2021	
4156 Silver Creek Rd	●	June 2021	
4212 Silver Creek Rd, 4220 Silver Creek Rd and 4236 Silver Creek Rd (Shared Well)	●	June 2021	

TABLE 1
PROPOSED UP-GRADIENT PFAS POTABLE WELL SAMPLING PLAN
FORMER TOWN OF NEWTON GRAVEL PIT
MANITOWOC, WISCONSIN

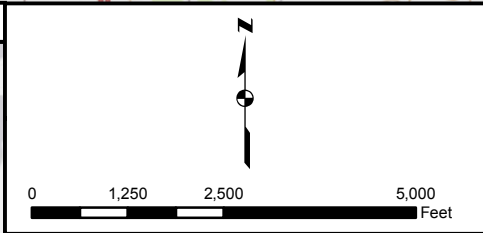
Well Address	Map Color Code	Date of Initial PFAS Sampling Event	2021
			November
4315 Silver Creek Rd	●	May 2021	
4751 Silver Creek Rd	●	May 2021	
3027 Orchard Ln	●	May 2021	
2201 Elm Road	●	June 2021	
3019 S 19TH ST	●	May 2021	
2823 S 15TH ST	●	May 2021	
2834 S 15TH ST	●	May 2021	
2908 S 15TH ST	●	May 2021	
2912 S 15TH ST	●	May 2021	
3027 S 15TH ST	●	May 2021	
3028 S 15TH ST	●	May 2021	
3126 S 15TH ST	●	May 2021	
3131 S 15TH ST (Shared well with 3201 S 15TH ST)	●	May 2021	
Confirmation Sampling - PFAS Detected Below Proposed PAL			
3120 CTH CR, replacement well	●	May 2021	
5202 Silver Creek Rd	●	May 2021	1
Confirmation Sampling - No Previous Detects			
3627 CTH CR	●	May 2021	
Proposed Sampling Locations			
Expanding west/upgradient of Gravel Pit site			
2741 FRICKE DR	◆	---	1
2747 FRICKE DR	◆	---	1
2748 FRICKE DR	◆	---	1
2751 FRICKE DR	◆	---	1
2761 FRICKE DR	◆	---	1
2815 FRICKE DR	◆	---	1
3003 GASS LAKE RD	◆	---	1
3011 GASS LAKE RD	◆	---	1
3105 GASS LAKE RD	◆	---	1
3107 Fricke Dr	◆	---	1
3111 GASS LAKE RD	◆	---	1
3117 GASS LAKE RD	◆	---	1
3223 GASS LAKE RD	◆	---	1
3231 GASS LAKE RD	◆	---	1
3521 GASS LAKE RD	◆	---	1
Former Potable Wells Now Connected to City Water			
2734(2804) CTH CR	○	City Water Provided - No Potable Well Sampling Required	
2916 CTH CR	○		
2917 CTH CR	○		
3617(3621) Viebahn St	○		
3701 Viebahn St	○		
3815 Viebahn St	○		
4025 Viebahn St	○		
4101 Viebahn St	○		
4141 Viebahn St. / 2717 CTH CR (non-potable monitoring location)	○		
Wells Per Event			19

Notes:

Map Color Code ● indicates locations with potable wells not scheduled for sampling



Service Layer Credits: USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGER/Line; HERE Road Data. Data Refreshed July, 2017.



FORMER NEWTON GRAVEL PIT

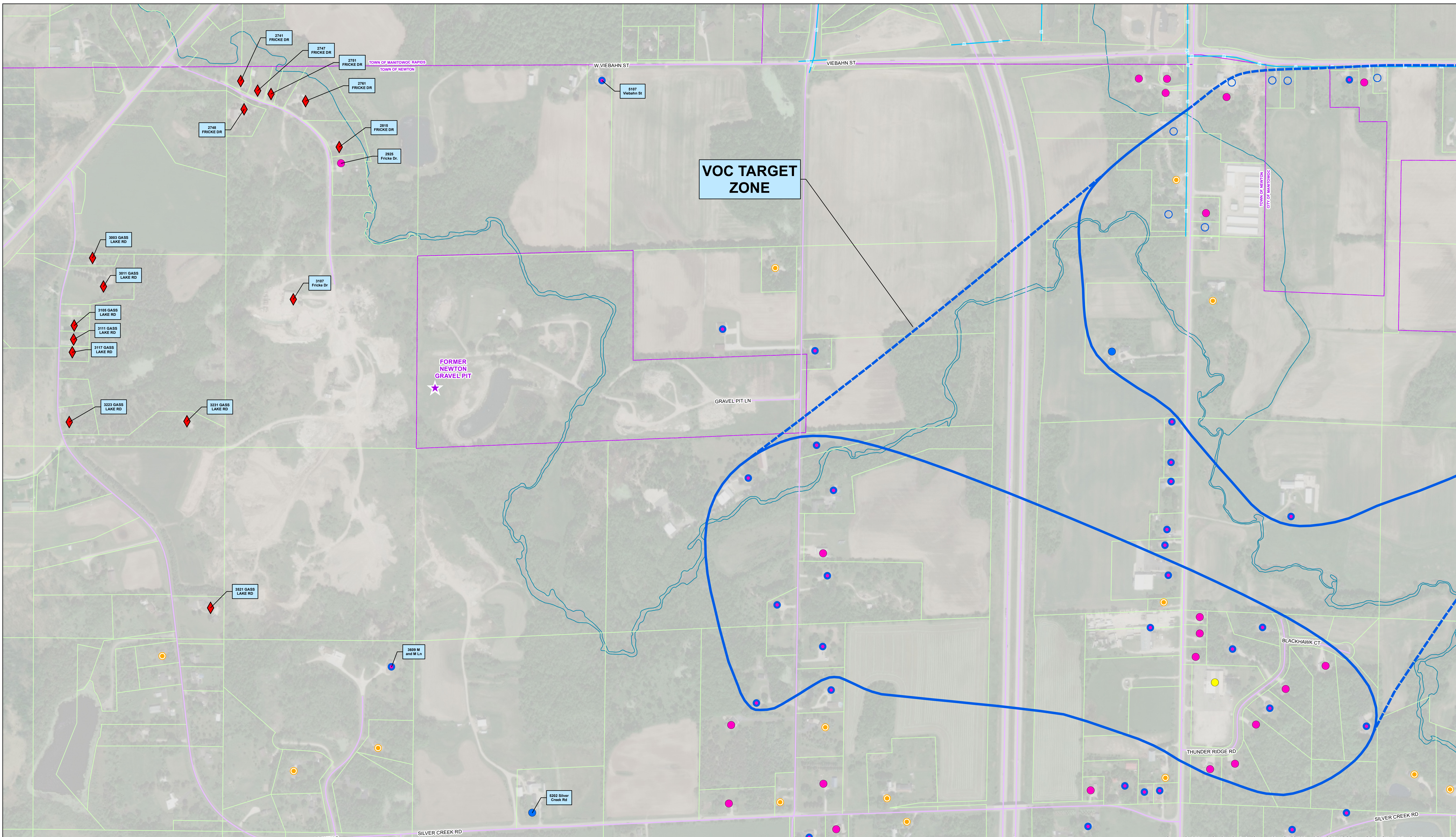
SITE LOCATION MAP

AECOM - Milwaukee Office
1555 River Center Dr
Milwaukee WI



Project No. 60581251 Drawn By: RW Date: July 2018

Figure 1



- Legend**
- Potable Well with Proposed PFAS ES Exceedance
 - Potable Well with Proposed PFAS PAL Exceedance
 - Potable Well with PFAS Detection
 - Potable Well with PFAS Non-Detection
 - ◆ Proposed Potable Well Location For PFAS Sample (Has Not Been Sampled)
 - Well On City Water
 - Potential Potable Well
 - ★ Site Location
 - Target Zone
 - - - Inferred Target Zone
 - Utility Water Line
 - Road Centerlines
 - Municipality Boundaries
 - Parcels
 - Streams

AECOM
 Milwaukee Office
 1555 River Center Dr
 Milwaukee WI

FORMER NEWTON GRAVEL PIT	
UP-GRADIENT PFAS POTABLE WELL SAMPLING LOCATIONS	
Project No. 60135471	Date: October 2021
FIGURE 2	

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community