

Appendix P



Rose & Westra
A Division of GZA

- GEOTECHNICAL
- ENVIRONMENTAL
- ECOLOGICAL
- WATER
- CONSTRUCTION MANAGEMENT

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AREA 5 STATEMENT OF WORK

North Kent Study Area

January 31, 2020
 File No. 16.0062335.60

PREPARED FOR:
 Wolverine World Wide, Inc.
 Rockford, Michigan

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January 31, 2020
Area 5 Statement of Work
Kent County, Michigan
File No. 16.0062335.60
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FIGURE 1 PROPOSED MONITORING WELLS - AREA 5



1.0 INTRODUCTION

On behalf of Wolverine World Wide, Inc. (Wolverine), Rose & Westra, a Division of GZA GeoEnvironmental, Inc. (R&W/GZA), prepared this Statement of Work (SOW) summarizing the approach and rationale for proposed remedial investigation monitoring wells set forth in the Consent Decree (CD) for Area 5 in Plainfield Township, Kent County, Michigan. The purpose of this SOW is to determine the location of groundwater monitoring wells and provide an outline for a Response Activity Plan to define the vertical and horizontal extent of per- and polyfluoroalkyl substances (PFAS) at Area 5 in compliance with Part 201 of the Michigan Natural Resources and Environmental Protection Act. Following completion of the tasks in this SOW, R&W/GZA will evaluate the data in consultation with EGLE and determine appropriate next steps.

2.0 GENERAL APPROACH

The monitoring wells were proposed after evaluating the extent of PFAS and evaluating their potential transport in groundwater. The following data was compiled and evaluated:

- The estimated extent of perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) exceeding 70 nanograms per liter (ng/L) and the extent of total PFAS, based on the test results for the residential drinking water wells, the vertical aquifer profiling samples, and the groundwater monitoring well samples.
- The estimated extent of PFOA+PFOS exceeding 10 ng/L and the estimated extent of seven PFAS compounds greater than the proposed maximum contaminant levels (MCLs) for those compounds, based on the test results for the residential drinking water wells, the vertical aquifer profiling samples, and the groundwater monitoring well samples.
- Soil boring logs for the vertical aquifer profiling locations and available residential water well logs.
- Groundwater contours and interpreted groundwater flow direction based on the November 2019 static water levels measured at groundwater monitoring wells and at the staff gauges installed in the Rogue River.
- Isoconcentration maps for total PFAS interpolated from the residential water well and the groundwater monitoring data.

3.0 BACKGROUND

Area 5 is located south and southwest of the primary PFOA+PFOS plume from the former House Street licensed disposal Site. Based on the groundwater contours and groundwater flow direction, Area 5 is located hydraulically down and side-gradient of the House Street Site. PFOA+PFOS were mostly absent from residential water samples in Area 5, excepting a few locations where PFOA+PFOS were at concentrations less than 10 ng/L and one location where PFOA+PFOS was detected at a concentration greater than 10 ng/L but less than 70 ng/L. In addition, PFOA+PFOS concentrations were greater than 10 ng/L but less than 70, ng/L in monitoring well HS-MW-26, which is in the southeast corner of Area 5.



4.0 PROPOSED MONITORING WELLS

The following provides a summary of proposed remedial investigation well locations, and the rationale. See Figure 1 for the proposed well locations. Existing monitoring wells HS-MW-21S, HS-MW-21M, and HS-MW-21D will be utilized as part of the well network for this area. Note that Figure 1 also shows Groundwater/Surface Water Interface (GSI) piezometer and pore water sample locations within/near the Rogue River as well as two investigation well locations to the northwest of the House Street Site. These are shown for reference in this SOW and discussed in detail in the GSI SOW and Perimeter Well SOW, respectively, both submitted under separate cover.

- Five vertical aquifer profiling (VAP)/monitoring well locations, AREA5-RI-1 through AREA5-RI-4 and AREA5-RI-12, are proposed to delineate the extent of plume in the central portion of the eastern boundary of Area 5. (Note, location AREA5-RI-12 is a contingency location and may not be drilled, pending information from other locations.) The proposed wells are located hydraulically upgradient, downgradient, and cross-gradient;
- Three VAP/monitoring well locations, AREA5-RI-5 through AREA5-RI-7, are proposed to delineate the extent of the plume near HS-MW-26. The proposed wells are located hydraulically upgradient, downgradient, and cross-gradient; and,
- Seven monitoring well locations (HS-PMW-RI-103, HS-PMW-RI-104, HS-PMW-RI-107, AREA5-RI-8, AREA5-RI-9, AREA5-RI-10, and AREA5-RI-11) are proposed to provide detection monitoring of PFAS possibly migrating toward Area 5 from the House Street Site. The locations are selected based on groundwater contours and groundwater flow lines backtracking to the House Street Site. With the expectation of reducing POET filter monitoring, these seven monitoring well clusters are proposed to provide groundwater analytical data to monitor potential migration of PFOA+PFOS from the primary House Street plume into Area 5. In addition, the proposed groundwater monitoring wells clusters will provide additional groundwater elevation data for the evaluation of groundwater flow west of the primary PFAS plume originated from the House Street Site.

5.0 METHODOLOGY

The tasks completed under this abbreviated work plan will be completed in accordance with the *Quality Assurance Project Plan, Former Wolverine Tannery, House Street Disposal Area, and Wolven/Jewell Area, Per- and Polyfluoroalkyl Substances Investigation Program, Revision 2 (QAPP)* prepared for Wolverine World Wide, Inc. by R&W/GZA and dated November 1, 2018. A Conceptual Site Model including additional background and methodology will be provided in a formal Response Activity Plan that will be prepared following the Effective Date of the CD (see Section 9.0 below).

6.0 WELL INSTALLATION PROCEDURES

The proposed well nest locations will be drilled using either hollow-stem auger or rotosonic methods in accordance with SOPs A03 through A06 of the QAPP. When possible, the initial boring at each location will be drilled to the top of bedrock or upon refusal. The borehole terminal depth will also be evaluated based on the depths of adjacent water wells and the presence of confining strata.

As the original borings are drilled at each location, vertical aquifer profiling samples will be collected from water-bearing and permeable formation(s) at an interval of 10 feet for PFAS analysis. Vertical Aquifer Profiling will be



completed in accordance with *SOP A25, Vertical Aquifer Profiling* included in the QAPP. The turn-around time for laboratory samples will be approximately 3 weeks.

Based on the profiling data and the encountered geology, R&W/GZA will determine the depth(s) of wells installed at each nest location. The monitoring wells will be developed in accordance with *SOP A13, Well Development* in the QAPP and surveyed by a licensed surveyor.

7.0 SAMPLING

Wells will be sampled as follows:

- Initial sampling post installation/development;
- Annual sampling until substantial completion of the Area 5 well network;
- Once the Area 5 well network is substantially complete, all newly installed wells will be sampled quarterly for one year.

Substantial Completion will be agreed upon by R&W/GZA and EGLE.

The groundwater sampling will be conducted using methods established in SOPs A14, A15, A16, and B01 of the QAPP. The samples will be analyzed using method EPA Method 537.1, modified isotope dilution.

8.0 INVESTIGATION DERIVED WASTE

Soil cuttings and development/purge water from the well installations and sampling will be containerized and transported to the former Wolverine House Street property for staging/storage until off-site treatment/disposal or other approved handling can be arranged.

9.0 ANTICIPATED SCHEDULE

A formal Response Activity Plan will be prepared for this SOW and submitted to EGLE no later than 120 days following the Effective Date of the CD between EGLE and Wolverine.

The schedule for installation of the well nest locations will depend on R&W/GZA's ability to obtain access to the desired locations or proximate alternate locations. The following table outlines R&W/GZA's current estimates of the steps and approximate timeframes for the tasks in this SOW.

Task	Estimated Timeframe per Location
Access	1 to 3 months
Drilling	2 to 3 weeks
VAP analysis	3 weeks
Monitoring Well Installation	1 to 2 weeks
Development wait time	2 weeks
First Groundwater Sampling	1 week
First Laboratory Analysis	3 weeks

Assuming one month per location, R&W/GZA estimates this SOW will require 15 months to complete drilling, vertical aquifer profiling and monitoring well installation. This will be completed in conjunction with the other SOWs submitted under the CD. R&W/GZA will coordinate with EGLE to prioritize drilling locations if access is



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obtained for multiple locations throughout the SOWs simultaneously. Because access will likely be obtained piecemeal, the actual well installation schedule will likely exceed 15 months.

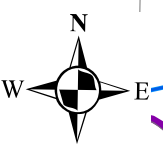
Following the full year of quarterly sampling of the well network, R&W/GZA will evaluate the data in consultation with EGLE and determine appropriate next steps.

J:\62000\623xx\62335.60-PR and Litigation\WWW-Budget_Related\Settlement Assistance\Areas-5-6-11-12 WP\Area 5\AREA_5_SOW-F 01312020.docx



FIGURE

© 2020 - GZA GeoEnvironmental, Inc. J:\16.xx Grand Rapids\16.0062335.60\16.0062335.60\GIS\GIS_CAD\KentCounty_AltAreas_Areas5_wip.mxd, 1/30/2020, 6:27:44 PM, Jim Cai



Legend

Proposed Monitoring Location

- Perimeter Monitoring
- ⊕ Investigation
- Investigation/Perimeter Monitoring
- GSI Piezometer
- Pore Water Sampling

HOUSE ST MONITORING WELLS

- APPROXIMATE HOUSE ST SITE BOUNDARY
- ⬮ Existing
- ▲ In Progress/Perimeter
- Extent of PFOS and PFOA Concentrations > 70 ng/L
- Extent of PFOS and PFOA Concentrations > 10 ng/L
- SURFACE WATER
- Areas Selected for Municipal Water

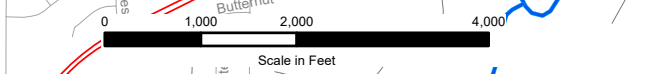
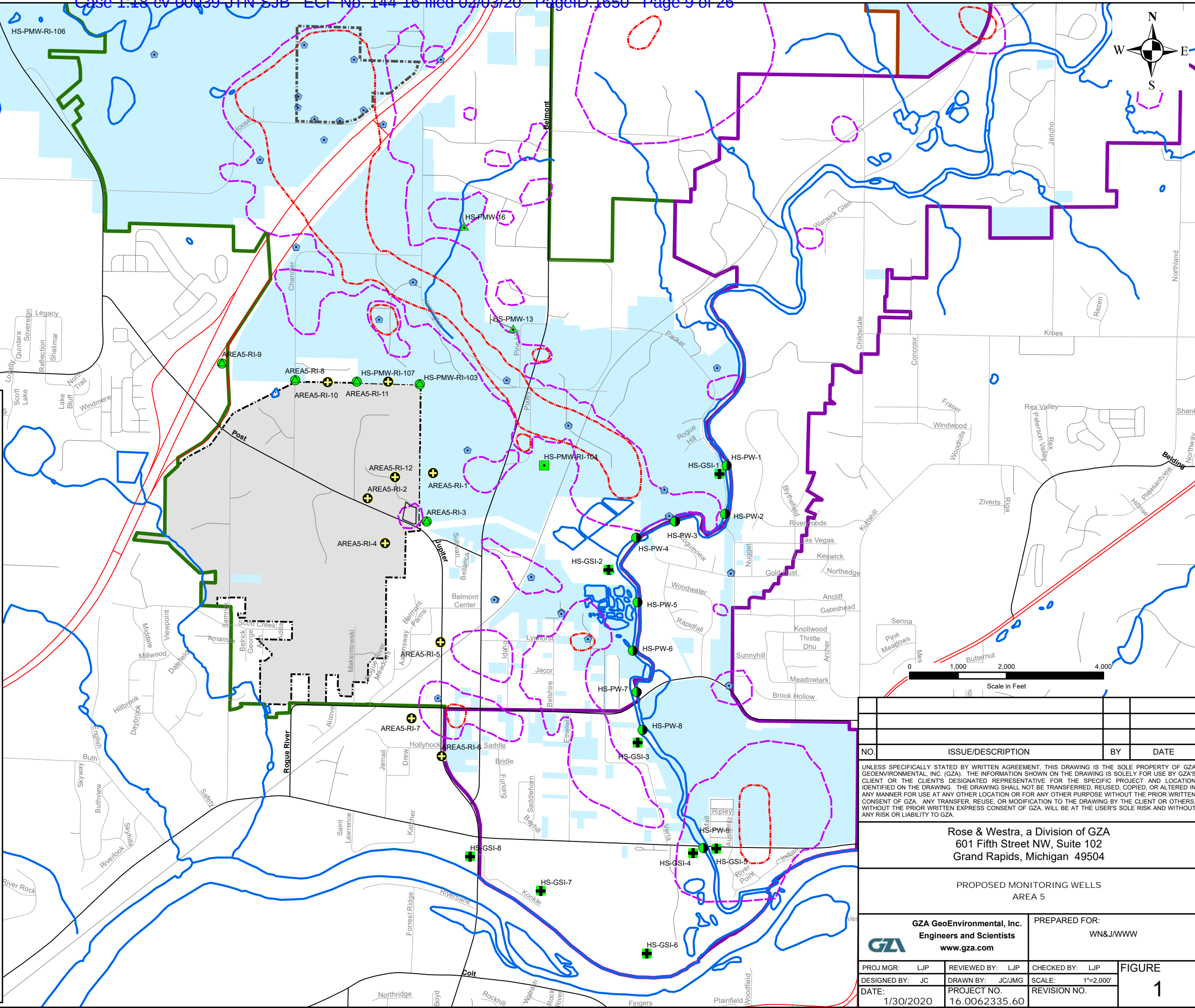
Filter Area

- Area 5

North Kent Study Area

Name

- House Street
- North Childsdale/10 Mile
- Rogue River



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PROPOSED MONITORING WELLS AREA 5			
GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: WN&J/WWW	
PROJ MGR: LJP DESIGNED BY: JC DATE: 1/30/2020	REVIEWED BY: LJP DRAWN BY: JC/JMG PROJECT NO. 16.0062335.60	CHECKED BY: LJP SCALE: 1"=2,000' REVISION NO.	FIGURE 1



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AREA 6 STATEMENT OF WORK

North Kent Study Area

January 31, 2020
 File No. 16.0062335.60

PREPARED FOR:
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APPENDED FIGURE

FIGURE 1 PROPOSED MONITORING WELLS - AREA 6



1.0 INTRODUCTION

On behalf of Wolverine World Wide, Inc. (Wolverine), Rose & Westra, a Division of GZA GeoEnvironmental, Inc. (R&W/GZA), prepared this Statement of Work (SOW) summarizing the approach and rationale for proposed remedial investigation monitoring wells set forth in the Consent Decree (CD) for Area 6 in Plainfield Township, Kent County, Michigan.

The purpose of this SOW is to determine the location of groundwater monitoring wells and provide an outline for a Response Activity Plan to define the vertical and horizontal extent of per- and polyfluoroalkyl substances (PFAS) at Area 6 in compliance with Part 201 of the Michigan Natural Resources and Environmental Protection Act. Following completion of the tasks in this SOW, R&W/GZA will evaluate the data in consultation with EGLE and determine appropriate next steps.

2.0 GENERAL APPROACH

The monitoring wells were proposed after evaluating the extent of PFAS and evaluating their potential transport in groundwater. The following data was compiled and evaluated:

- The estimated extent of perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) exceeding 70 nanograms per liter (ng/L) and the extent of total PFAS, based on the test results for the residential drinking water wells, the vertical aquifer profiling samples, and the groundwater monitoring well samples.
- The estimated extent of PFOA+PFOS exceeding 10 ng/L and the estimated extent of seven PFAS compounds greater than the proposed maximum contaminant levels (MCLs) for those compounds, based on the test results for the residential drinking water wells, the vertical aquifer profiling samples, and the groundwater monitoring well samples.
- Soil boring logs for the vertical aquifer profiling locations and available residential water well logs.
- Groundwater contours and interpreted groundwater flow direction based on the November 2019 static water levels measured at groundwater monitoring wells and at the staff gauges installed in the Rogue River.
- Isoconcentration maps for total PFAS interpolated from the residential water well and the groundwater monitoring data.

3.0 BACKGROUND

Area 6 is located northeast of the primary House Street plume, west and south of the North Kent Landfill. Most of the Area 6 residential water wells located west of Belmont Avenue had PFOA+PFOS concentrations less than 10 ng/L. Some Area 6 residential water wells located west of Belmont Avenue had PFOA+PFOS concentrations greater than 10 ng/L, but less than 70 ng/L. In the area east of Belmont Avenue, most of the residential wells did not have detectable PFOS+PFOA. Groundwater contours suggest some PFAS migrating toward Area 6 may originate at the North Kent Landfill Area.



4.0 PROPOSED MONITORING WELLS

The following provides a summary of proposed remedial investigation well locations, and the rationale. See Figure 1 for the proposed well locations. For Area 6, the two previously proposed remedial investigation VAP/monitoring wells HS-PMW-13 and HS-PMW-16 located between the House Street primary plume and Area 6 should be completed to delineate the boundary of the House Street primary plume. In addition, the following three VAP/monitoring well locations are proposed:

- Three VAP/monitoring well locations, HS-PMW-RI-108, HS-PMW-RI-109 and HS-PMW-RI-113, are proposed to evaluate groundwater flow direction and monitor potential PFOA+PFOS migration in this area. These three locations will provide data to further evaluate whether the detected PFOA+PFOS concentrations in Area 6 was migrated from the House Street Site and/or from the North Kent Landfill Area.
- Two additional VAP/monitoring well location, AREA6-RI-1 and AREA6-RI-2, located southeast of HS-PMW-RI-113, are proposed to evaluate groundwater flow direction and monitor potential PFOA+PFOS migration in the eastern portion of Area 6. These two locations will provide data to further monitor potential PFOA+PFOS migration into the eastern portion of Area 6.
- One VAP/monitoring well location, AREA6-RI-3, is proposed to delineate the extent of the primary House Street PFOA+PFOS plume near Area 6. In addition, drilling and sampling of the previously proposed VAP/monitoring well location HS-PMW-16 will be continued and incorporated as part of the evaluation in Area 6. These two locations will provide data to evaluate groundwater flow in this area and delineate the extent of the primary House Street PFOA+PFOS plume.

5.0 METHODOLOGY

The tasks completed under this abbreviated work plan will be completed in accordance with the *Quality Assurance Project Plan, Former Wolverine Tannery, House Street Disposal Area, and Wolven/Jewell Area, Per- and Polyfluoroalkyl Substances Investigation Program, Revision 2* (QAPP) prepared for Wolverine World Wide, Inc. by R&W/GZA and dated November 1, 2018. A Conceptual Site Model including additional background and methodology will be provided in a Response Activity Plan that will be prepared following the Effective Date of the CD (see Section 9.0 below).

6.0 WELL INSTALLATION PROCEDURES

The proposed well nest locations will be drilled using either hollow-stem auger or roto sonic methods in accordance with SOPs A03 through A06 of the QAPP. When possible, the initial boring at each location will be drilled to the top of bedrock or refusal. The borehole terminal depth will also be evaluated based on the depths of adjacent water wells and the presence of confining strata.

As the original borings are drilled at each location, vertical aquifer profiling samples will be collected from water-bearing and permeable formation(s) at an interval of 10 feet for PFAS analysis. Vertical Aquifer Profiling will be completed in accordance with *SOP A25, Vertical Aquifer Profiling* included in the QAPP. The turn-around time for laboratory samples will be approximately 3 weeks.

Based on the profiling data and the encountered geology, R&W/GZA will determine the depth(s) of wells installed at each nest location. The monitoring wells will be developed in accordance with *SOP A13, Well Development* in the QAPP and surveyed by a licensed surveyor.



7.0 SAMPLING

Wells will be sampled as follows:

- Initial sampling post installation/development;
- Annual sampling until substantial completion of the Area 6 well network;
- Once the Area 6 well network is substantially complete, all newly installed wells will be sampled quarterly for one year.

Substantial Completion will be agreed upon by R&W/GZA and EGLE.

The groundwater sampling will be conducted using methods established in SOPs A14, A15, A16, and B01 of the QAPP. The samples will be analyzed using method EPA Method 537.1, modified isotope dilution.

8.0 INVESTIGATION DERIVED WASTE

Soil cuttings and development/purge water from the well installations and sampling will be containerized and transported to the former Wolverine House Street property for staging/storage until off-site treatment/disposal or other approved handling can be arranged.

9.0 ANTICIPATED SCHEDULE

A formal Work Plan will be prepared for this work and submitted to EGLE no later than 120 days following the Effective Date of the CD between EGLE and Wolverine.

The schedule for installation of the well nest locations will depend on R&W/GZA's ability to obtain access to the desired locations or proximate alternate locations. The following table outlines R&W/GZA's current estimates of the steps and approximate timeframes for the work in this SOW.

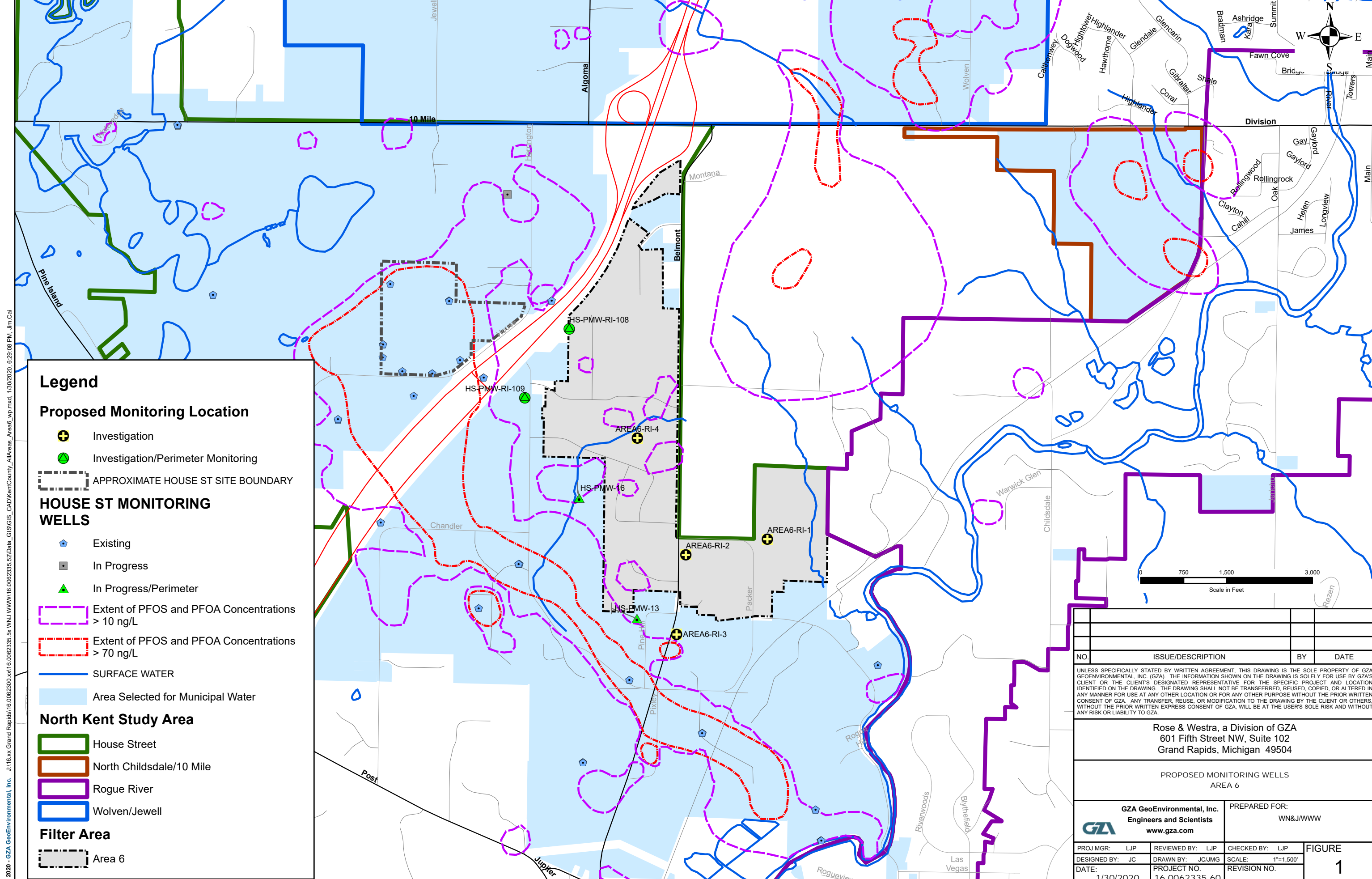
Task	Timeframe per Location
Access	1 to 3 months
Drilling	2 to 3 weeks
VAP analysis	3 weeks
Monitoring Well Installation	1 to 2 weeks
Development wait time	2 weeks
First Groundwater Sampling	1 week
First Laboratory Analysis	3 weeks

Assuming one month per location, R&W/GZA estimates this SOW will require 6 months to complete drilling, vertical aquifer profiling and monitoring well installation. This work will be completed in conjunction with the other SOWs submitted under the CD. R&W/GZA will coordinate with EGLE to prioritize drilling locations if access is obtained for multiple locations throughout the SOWs simultaneously. Because access will likely be obtained piecemeal, the actual well installation schedule will likely exceed 6 months.

Following the full year of quarterly sampling of the well network, R&W/GZA in consultation with EGLE will evaluate the data and determine appropriate next steps.

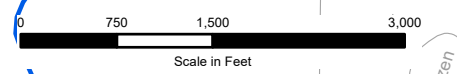


FIGURE



Legend

- Proposed Monitoring Location**
- Investigation
 - Investigation/Perimeter Monitoring
 - APPROXIMATE HOUSE ST SITE BOUNDARY
- HOUSE ST MONITORING WELLS**
- Existing
 - In Progress
 - In Progress/Perimeter
- Extent of PFOS and PFOA Concentrations**
- Extent of PFOS and PFOA Concentrations > 10 ng/L
 - Extent of PFOS and PFOA Concentrations > 70 ng/L
- SURFACE WATER**
- SURFACE WATER
- Area Selected for Municipal Water**
- Area Selected for Municipal Water
- North Kent Study Area**
- House Street
 - North Childsdale/10 Mile
 - Rogue River
 - Wolven/Jewell
- Filter Area**
- Area 6



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<p>PROPOSED MONITORING WELLS AREA 6</p>			
<p>GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com</p>		<p>PREPARED FOR: WN&J/WWW</p>	
PROJ MGR: LJP	REVIEWED BY: LJP	CHECKED BY: LJP	<p>FIGURE 1</p>
DESIGNED BY: JC	DRAWN BY: JC/JMG	SCALE: 1"=1,500'	
DATE: 1/30/2020	PROJECT NO. 16.0062335.60	REVISION NO.	

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AREAS 11 and 12 STATEMENT OF WORK North Kent Study Area

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APPENDED FIGURE

FIGURE 1 PROPOSED MONITORING WELLS - AREAS 11 and 12



1.0 INTRODUCTION

On behalf of Wolverine World Wide, Inc. (Wolverine), Rose & Westra, a Division of GZA GeoEnvironmental, Inc. (R&W/GZA), prepared this Statement of Work (SOW) summarizing the approach and rationale for proposed remedial investigation monitoring wells set forth in the Consent Decree (CD) for Areas 11 and 12 in Plainfield Township, Kent County, Michigan. The purpose of this SOW is to determine the location of groundwater monitoring wells and provide an outline for a Response Activity Plan to define the vertical and horizontal extent of per- and polyfluoroalkyl substances (PFAS) at Area 11/12 in compliance with Part 201 of the Michigan Natural Resources and Environmental Protection Act. Following completion of the tasks in this SOW, R&W/GZA will evaluate the data in consultation with EGLE and determine appropriate next steps.

2.0 GENERAL APPROACH

The monitoring wells were proposed after evaluating the extent of PFAS and evaluating their potential transport in groundwater. The following data was compiled and evaluated:

- The estimated extent of perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) exceeding 70 nanograms per liter (ng/L) and the extent of total PFAS, based on the test results for the residential drinking water wells, the vertical aquifer profiling samples, and the groundwater monitoring well samples.
- The estimated extent of PFOA+PFOS exceeding 10 ng/L and the estimated extent of seven PFAS compounds greater than the proposed maximum contaminant levels (MCLs) for those compounds, based on the test results for the residential drinking water wells, the vertical aquifer profiling samples, and the groundwater monitoring well samples.
- Soil boring logs for the vertical aquifer profiling locations and available residential water well logs.
- Groundwater contours and interpreted groundwater flow direction based on the November 2019 static water levels measured at groundwater monitoring wells and at the staff gauges installed in the Rogue River.
- Isoconcentration maps for total PFAS interpolated from the residential water well and the groundwater monitoring data.

3.0 BACKGROUND

Areas 11 and 12 are located east of the Rogue River, just north of the Grand River. PFOA+PFOS concentrations greater than 10 ng/L were detected in a few locations, and a PFOA+PFOS concentration slightly greater than 70 ng/L was detected in one location east of the Rogue River area. The groundwater contours suggest the Rogue River is a discharge point for groundwater on both the east and west sides of the river.

4.0 PROPOSED MONITORING WELLS

The following provides a summary of proposed remedial investigation wells, and the rationale. See Figure 1 for the proposed well locations. Note that Figure 1 also shows proposed Groundwater/Surface Water Interface (GSI) piezometers and pore water sample locations within/near the Rogue River and Grand River. These are shown for reference in this SOW and discussed in detail in the GSI SOW submitted under separate cover.



- One VAP/monitoring well location (AREA11-RI-1) is proposed hydraulically upgradient of the area where PFOA+PFOS were detected at a concentration greater 70 ng/L east of the Rogue River, to evaluate potential upgradient source of PFOA+PFOS.
- One VAP/monitoring well location (HS-PMW-RI-110) is proposed to evaluate and monitor potential migration of PFAS from the hydraulically upgradient area to the filter area between HS-PMW-RI-110 and the Rogue River, where the parcels are not planned to receive municipal water.
- Two VAP/monitoring well locations (HS-PMW-RI-111 and HS-PMW-RI-112) are proposed near the area east of the river where PFOA+PFOS were detected at a concentration greater 70 ng/L, to evaluate potential migration of PFAS from this area to the filter area south and southwest, where the parcels are not planned to receive municipal water.
- Three VAP/monitoring well locations (AREA12-RI-1, AREA12-RI-2, and AREA12-RI-3) are proposed to evaluate groundwater flow in this area and monitor potential PFAS migration to the filter area south of these proposed locations.

5.0 METHODOLOGY

The tasks completed under this abbreviated work plan will be completed in accordance with the *Quality Assurance Project Plan, Former Wolverine Tannery, House Street Disposal Area, and Wolven/Jewell Area, Per- and Polyfluoroalkyl Substances Investigation Program, Revision 2* (QAPP) prepared for Wolverine World Wide, Inc. by R&W/GZA and dated November 1, 2018. A Conceptual Site Model including additional background and methodology will be provided in a formal Work Plan that will be prepared following the Effective Date of the CD (see Section 9.0 below).

6.0 WELL INSTALLATION PROCEDURES

The proposed well nest locations will be drilled using either hollow-stem auger or roto sonic methods in accordance with SOPs A03 through A06 of the QAPP. When possible, the initial boring at each location will be drilled to the top of bedrock or refusal. The borehole terminal depth will also be evaluated based on the depths of adjacent water wells and the presence of confining strata.

As the original borings are drilled at each location, vertical aquifer profiling samples will be collected from water-bearing and permeable formation(s) at an interval of 10 feet for PFAS analysis. Vertical Aquifer Profiling will be completed in accordance with *SOP A25, Vertical Aquifer Profiling* included in the QAPP. The turn-around time for laboratory samples will be approximately 3 weeks.

Based on the profiling data and the encountered geology, R&W/GZA will determine the depth(s) of wells installed at each nest location. The monitoring wells will be developed in accordance with *SOP A13, Well Development* in the QAPP and surveyed by a licensed surveyor.

7.0 SAMPLING

Wells will be sampled as follows:

- Initial sampling post installation/development;
- Annual sampling until substantial completion of the Area 11/12 well network;
- Once the Area 11/12 well network is substantially complete, all newly installed wells will be sampled quarterly for one year.



Substantial Completion will be agreed upon by R&W/GZA and EGLE.

The groundwater sampling will be conducted using methods established in SOPs A14, A15, A16, and B01 of the QAPP. The samples will be analyzed using method EPA Method 537.1, modified isotope dilution.

8.0 INVESTIGATION DERIVED WASTE

Soil cuttings and development/purge water from the well installations and sampling will be containerized and transported to the former Wolverine House Street property for staging/storage until off-site treatment/disposal or other approved handling can be arranged.

9.0 ANTICIPATED SCHEDULE

A formal Work Plan will be prepared for this work and submitted to EGLE no later than 120 days following the Effective Date of the CD between EGLE and Wolverine.

The schedule for installation of the well nest locations will depend on R&W/GZA's ability to obtain access to the desired locations or proximate alternate locations. The following table outlines R&W/GZA's current estimates of the steps and approximate timeframes for the tasks in this SOW.

Task	Estimated Timeframe per Location
Access	1 to 3 months
Drilling	2 to 3 weeks
VAP analysis	3 weeks
Monitoring Well Installation	1 to 2 weeks
Development wait time	2 weeks
First Groundwater Sampling	1 week
First Laboratory Analysis	3 weeks

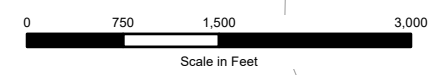
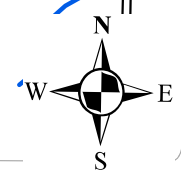
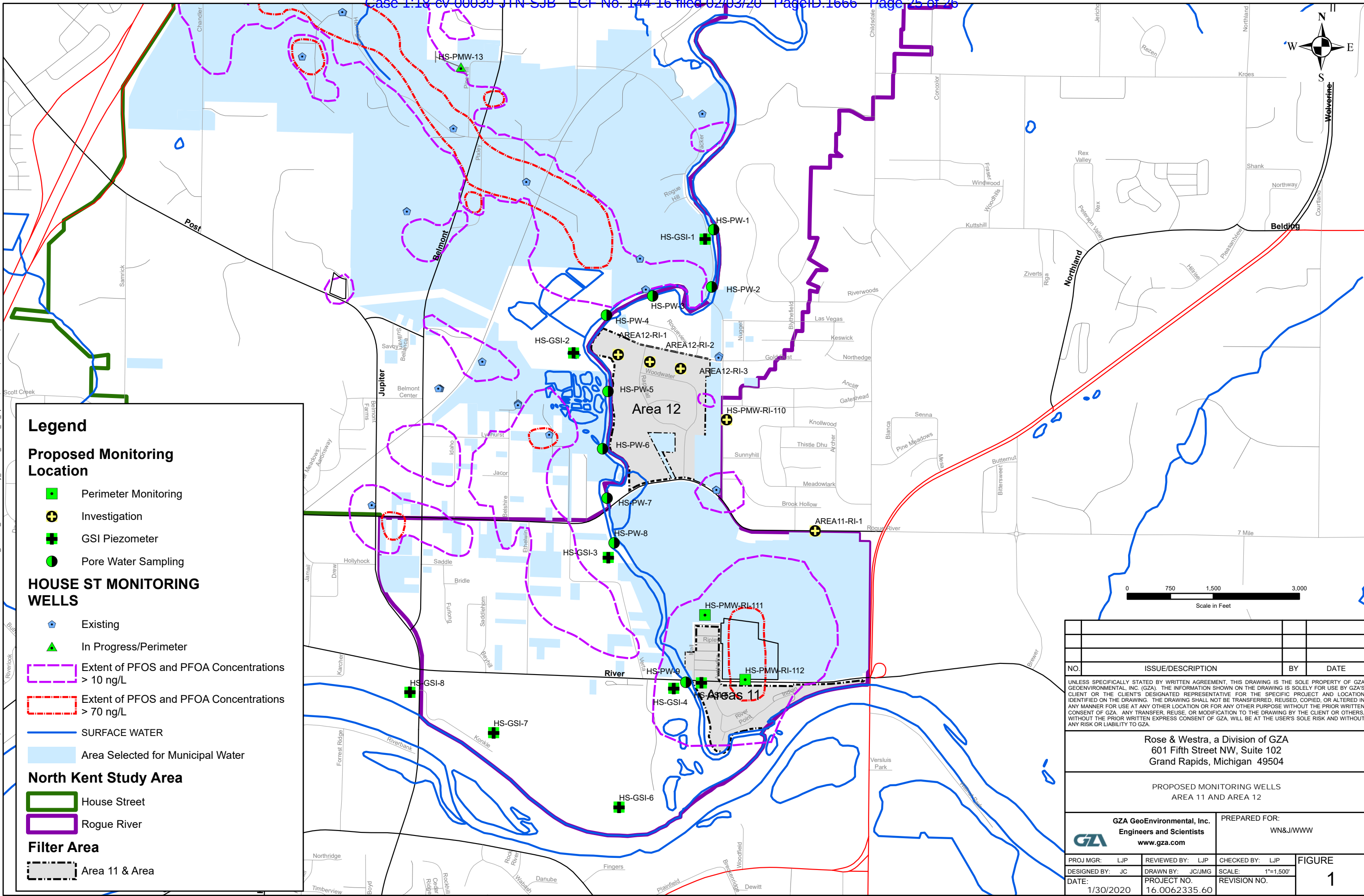
Assuming one month per location, R&W/GZA estimates this SOW will require 7 months to complete drilling, vertical aquifer profiling and monitoring well installation. This work will be completed in conjunction with the other SOWs submitted under the CD. R&W/GZA will coordinate with EGLE to prioritize drilling locations if access is gained for multiple locations throughout the SOWs simultaneously. Because access will likely be obtained piecemeal, the actual well installation schedule will likely exceed 7 months.

Following the full year of quarterly sampling of the well network, R&W/GZA will evaluate the data in consultation with EGLE and determine appropriate next steps.



FIGURE

© 2020 - GZA GeoEnvironmental, Inc. J:\16.xx Grand Rapids\16.0062335.60\16.0062335.60\GIS\GIS_CAD\KentCounty_AltAreas_Area11_12_wip.mxd, 1/30/2020, 6:30:28 PM, Jim Cai



Legend

Proposed Monitoring Location

- Perimeter Monitoring
- ⊕ Investigation
- ⊕ GSI Piezometer
- Pore Water Sampling

HOUSE ST MONITORING WELLS

- ⬠ Existing
- ▲ In Progress/Perimeter

 Extent of PFOS and PFOA Concentrations > 10 ng/L

 Extent of PFOS and PFOA Concentrations > 70 ng/L

— SURFACE WATER

 Area Selected for Municipal Water

North Kent Study Area

 House Street

 Rogue River

Filter Area

 Area 11 & Area 12

NO.	ISSUE/DESCRIPTION	BY	DATE

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PROPOSED MONITORING WELLS
AREA 11 AND AREA 12

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
WN&J/WWW

PROJ MGR: LJP	REVIEWED BY: LJP	CHECKED BY: LJP	FIGURE 1
DESIGNED BY: JC	DRAWN BY: JC/JMG	SCALE: 1"=1,500'	
DATE: 1/30/2020	PROJECT NO. 16.0062335.60	REVISION NO.	



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