



Rose & Westra
A Division of GZA

GEOTECHNICAL
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June 29, 2018
File No. 16.0062335.02

Ms. Abigail Hendershott
District Supervisor – Remediation and Redevelopment Division
Michigan Department of Environmental Quality
350 Ottawa Avenue NW #10
Grand Rapids, MI 49503

Re: Off-Site Groundwater Investigation Scope of Work
Former Tannery Site
123 Main Street, Rockford, Kent County, Michigan

Dear Ms. Hendershott:

On behalf of Wolverine World Wide, Inc. (Wolverine), Rose & Westra, a Division of GZA GeoEnvironmental, Inc. (R&W/GZA), prepared this Off-Site Groundwater Investigation Scope of Work (SOW) related to perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) at the Former Tannery Site (Site). The SOW was prepared in response to certain requests included in MDEQ's May 31, 2018 letter¹ to Wolverine and discussions during technical meetings regarding the ongoing investigation.

This SOW is focused on evaluating the potential for PFOA/PFOS in off-Site groundwater, including evaluation of potential vertical and lateral extent, if any. The proposed investigation is based on our experience at the Site and experience at other PFAS-related sites.

At least 8 additional on-Site monitoring wells are being installed as part of the Extent of Contamination Study Removal Work Plan (RWP). The following presents the SOW for the off-Site investigation.

TASK 1: OFF-SITE MONITORING WELL INSTALLATION

Soil borings will be advanced using standard hollow stem auger (HSA) methods. Soil samples will be collected at 5-foot intervals using Standard Penetration Test methods. R&W/GZA field personnel will screen soil samples for total volatile organic compounds (VOCs) using a photoionization detector (PID). Based on PID screening and visual and olfactory observations, select soil samples may be analyzed for PFAS via DOD QSM v 1.1. Excess soil will be containerized in 55-gallon open-top steel drums and temporarily stored in a designated area. Containerized soil will be disposed of at an appropriate off-site, licensed disposal facility.

¹ Letter by MDEQ titled "Tannery-Wolverine World Wide, Inc. (Wolverine) Per- and Polyfluoroalkyl Substances (PFAS) Response to "Draft Removal Work Plan for the Tannery, Rockford, Kent County, Michigan: Approval with Modifications dated April 24, 2018," hereafter renamed "Extent of Contamination Study Removal Work Plan, Former Wolverine Tannery, Rockford, Michigan."



During advancement of the soil borings, vertical aquifer sampling (VAS) will be conducted for PFAS. VAS samples would be collected every 10 feet within the aquifer.

Soil borings will be completed with monitoring well installations. Monitoring wells will consist of 2-inch-diameter PVC solid riser pipe attached to slotted well screen and will be completed with flush-mounted road boxes or a locked protective standpipe. Monitoring wells will be developed following installation using an inertia pump and surge block methods. Water generated during the well development activities will be placed in containers for off-site disposal. Monitoring well locations and reference point elevations (ground surface and top of casing) will be established by a licensed surveyor.

Groundwater monitoring wells will be constructed within the upper sandy deposits. R&W/GZA anticipates installing monitoring wells at four off-Site locations described below and shown on Figure 1. Monitoring wells will include:

- One groundwater monitoring well will be installed east of the retail store, across main street, north of Rum Creek and will be screened straddling the water table;
- One groundwater monitoring well will be installed on the east side of Main Street across from the former Waste Water Treatment Plant (WWTP) and tannery building, south of Rum Creek and will be screened straddling the water table;
- Three groundwater monitoring wells at different depths will be installed on the south end of the parking lot near the boat launch. One well will be screened straddling the water table, the second well will be screened at a similar elevation as MW309C (approximately 30 feet below ground surface) and the third will be screened at a similar elevation to MW-309D (approximately 45 feet below ground surface); and,
- Two groundwater monitoring wells will be installed west of the river, at a location to be agreed upon by the City of Rockford, DEQ, and R&W/GZA. One of these wells will be screened straddling the water table. The second well will be screened at a similar elevation as MW309D (depth to be determined based on selected location elevation).

Monitoring well locations and screen elevations may be modified based on actual subsurface conditions encountered.

TASK 2: GROUNDWATER QUALITY SAMPLING

Two rounds of groundwater sampling events will be performed to evaluate the potential presence of PFAS in groundwater. A groundwater sample will be collected at each monitoring well for PFAS analysis in accordance with the methods described in the PFAS QAPP. Samples will be collected for analysis of PFAS via DOD QSM v 1.1EPA Method PFC/537M and other analytes that have been previously detected in the groundwater at the Tannery at concentrations greater than the MDEQ Groundwater Residential Criteria (GRCC).

TASK 3: PATHWAY ANALYSIS AND REPORTING

Following completion of the off-Site investigation, the data will be evaluated along with the data collected on-Site and a pathway analysis will be conducted for PFAS. The data from the PFAS investigation both on and off-Site will be combined and evaluated in a single report. The pathway analysis and groundwater/surface water interaction evaluation will be included in this report.



SCHEDULE

If permission can be obtained for off-Site access, this SOW will be implemented in conjunction with the EPA RWP. The RWP work began on June 18, 2018 and is scheduled to continue through the end of August 2018.

R&W/GZA trusts this letter and attachments are responsive to MDEQ requests referenced herein. Should you have any questions, please do not hesitate to contact the undersigned.

Very truly yours,

Rose & Westra, a Division of GZA GeoEnvironmental, Inc.



Mark A. Westra
Associate Principal

Leslie M. Nelson
Senior Project Manager

Enclosures: Figure 1

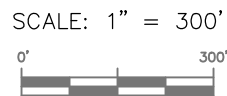


LEGEND

-  = PROPOSED MONITOR WELL LOCATION
-  = APPROX. LOCATION OF SITE BOUNDARY

NOTES:

- 1) BASE MAP DERIVED FROM NEDERVELD SITE SURVEY DATED NOVEMBER 22, 2013
- 2) DIGITAL AERIAL ORTHOPHOTOGRAPHY WAS COLLECTED BY GOOGLE EARTH IN APRIL 2016



SITE PLAN W/ PROPOSED MONITOR WELL LOCATIONS

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 GEOTECHNICAL-ENVIRONMENTAL-ECOLOGICAL
 WATER-CONSTRUCTION MANAGEMENT

W&J/W&W
 FORMER TANNERY SITE, 123 MAIN ST, ROCKFORD, MICHIGAN
 OFF-SITE INVESTIGATION

PROJECT NO.
16.0062335.02

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FIGURE NO.

CREATED BY: KJB APPROVED BY: LMN DATE: 6/29/18 FILE NAME: 62335_02_OFFSITE