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MEMORANDUM

To: Abby Hendershott, EGLE

From: Leslie Nelson, Rose & Westra, a Division of GZA GeoEnvironmental, Inc.

Date: May 31, 2019

File No.: 16.0062335.02 Task 002

Re: Wolverine World Wide, Inc. (Wolverine) – Former Tannery
Monthly Progress Report

This Monthly Progress Report (MPR) is being provided at the request of EGLE to support the June 18, 2018 Source Investigation Task Summary (SITS) in response EGLE's request for regular progress updates.

This MPR summarizes the progress for the period April 24, 2019 through May 24, 2019. This includes actions performed, problems encountered, analytical data received during the reporting period, and anticipated developments during the next reporting period.

ACTIONS PERFORMED

- 1) On-Going: Investigation Derived Waste (IDW). IDW soil is containerized, we received approval for off-site disposal, and off-Site disposal is in progress. IDW water is containerized and we recently received approval from the receiving facility.
- 2) May 1, 2019 – May 24, 2019 – Conducted vertical profiling and monitoring well installation at TA-MW-311 and TA-MW-316.
- 3) May 6, 2019 – May 22, 2019 – Conducted pump testing on the three extraction wells to help with the final design of the treatment system. This included collecting samples from PMW-1, PMW-2 and PMW-3 at the end of the pump tests.

ANALYTICAL DATA RECEIVED

Analytical data was received from a resample of TA-MW-312, along with the pre-pump test sampling of extraction wells TA-PMW-1, TA-PMW-2 and TA-PMW-3. Table 1 includes this data.

ANTICIPATED ACTIONS AND SCHEDULE FOR NEXT REPORTING PERIOD

During the next reporting period, May 28, 2019 through June 24, 2019, R&W/GZA anticipates completing and/or continuing to conduct the following tasks.

- 1) Plan for a groundwater sampling event starting in late May/early June.
- 2) Conduct vertical profiling and monitoring well installation at TA-MW-315.



- 3) Continue to work on access for off-Site locations.
- 4) Complete boring logs and monitoring well logs for TA-MW-311 and TA-MW-316
- 5) Continue to respond to the EPA's April 29, 2019, correspondence regarding CERCLA actions at the Wolverine Tannery and House Street sites.

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TABLE 1
SUMMARY OF GROUNDWATER SAMPLE ANALYSIS - PFAS
Former Tannery
Rockford, Kent County, Michigan

| Sample Location | Part 201 Generic Residential Groundwater Cleanup Criteria – Drinking Water | Part 201 Generic Groundwater Cleanup Criteria – Groundwater Surface Water Interface | U.S. EPA Residential Tap Water Regional Removal Management Levels | TA-MW-312 | TA-PMW-01 | TA-PMW-02 | TA-PMW-03 |
|---|--|---|---|-------------|-------------|-------------|-------------|
| Sample Name | | | | TA-MW-312 | TA-PMW-01 | TA-PMW-02 | TA-PMW-03 |
| Laboratory Sample ID(s) | | | | UD03042-001 | UD11027-001 | UD11027-002 | UD11027-003 |
| Sample Date | | | | 03/15/2019 | 04/10/2019 | 04/10/2019 | 04/10/2019 |
| Parameter (µg/L) | | | | | | | |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | NCL | NCL | NCL | <0.0036 | <0.0036 | 0.0094 | <0.0036 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | NCL | NCL | NCL | <0.0036 | 0.012 | <0.0037 | 0.06 |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | NCL | NCL | NCL | <0.0036 | <0.0036 | <0.0037 | <0.0036 |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | NCL | NCL | NCL | <0.0071 | <0.0072 | <0.0074 | <0.0073 |
| Perfluorobutane sulfonic acid (PFBS) | NCL | NCL | 1,200 | <0.0036 | 1.2 | 0.52 | 3.8 |
| Perfluorodecane sulfonic acid (PFDS) | NCL | NCL | NCL | <0.0036 | <0.0036 | <0.0037 | <0.0036 |
| Perfluoroheptane sulfonic acid (PFHpS) | NCL | NCL | NCL | <0.0036 | 0.088 | 0.084 | 0.25 |
| Perfluorononane sulfonic acid (PFNS) | NCL | NCL | NCL | <0.0071 | <0.0072 | 0.011 | 0.0073 |
| Perfluorooctane sulfonamide (FOSA) | NCL | NCL | NCL | <0.0036 | 0.023 | 2.4 | 0.12 |
| Perfluoropentane sulfonic acid (PFPeS) | NCL | NCL | NCL | <0.0036 | 0.092 | 0.14 | 0.52 |
| Perfluorohexane sulfonic acid (PFHxS) | NCL | NCL | NCL | <0.0036 | 0.47 | 0.44 | 1.5 |
| Perfluorobutanoic acid (PFBA) | NCL | NCL | NCL | <0.0036 | 0.22 | 0.068 | 1.5 |
| Perfluorodecanoic acid (PFDA) | NCL | NCL | NCL | <0.0036 | 0.0044 | 0.1 | 0.024 |
| Perfluorododecanoic acid (PFDoDA) | NCL | NCL | NCL | <0.0036 | <0.0036 | <0.0037 | <0.0036 |
| Perfluoroheptanoic acid (PFHpA) | NCL | NCL | NCL | <0.0036 | 0.19 | 0.15 | 2.3 |
| Perfluorohexanoic acid (PFHxA) | NCL | NCL | NCL | <0.0036 | 0.44 | 0.15 | 3.2 |
| Perfluorononanoic acid (PFNA) | NCL | NCL | NCL | <0.0036 | 0.008 | 0.033 | 0.13 |
| Perfluorooctanoic acid (PFOA) | 0.07 (JJ) | 0.42 (X) | NCL | 0.0037 | 1.1 | 1.7 | 12 |
| Perfluorooctane sulfonic acid (PFOS) | 0.07 (JJ) | 0.011 (X) | NCL | 0.0098 | 5.6 | 9.4 | 13 |
| PFOA + PFOS (Calculated) | 0.07 | NCL | ncl | 0.014 | 6.7 | 11 | 25 |
| Perfluoropentanoic acid (PFPeA) | NCL | NCL | NCL | <0.0036 | 0.12 | 0.068 | 1.2 |
| Perfluorotetradecanoic acid (PFTeDA) | NCL | NCL | NCL | <0.0036 | <0.0036 | <0.0037 | <0.0036 |
| Perfluorotridecanoic acid (PFTrDA) | NCL | NCL | NCL | <0.0036 | <0.0036 | <0.0037 | <0.0036 |
| Perfluoroundecanoic acid (PFUnDA) | NCL | NCL | NCL | <0.0036 | <0.0036 | <0.0037 | <0.0036 |
| Total PFAS (Calculated) | NCL | NCL | NCL | 0.014 | 9.6 | 15 | 40 |

TABLE 1
SUMMARY OF GROUNDWATER SAMPLE ANALYSIS - PFAS
Former Tannery
Rockford, Kent County, Michigan

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See After Table 1 For Notes

NOTES:

1. Concentration and criteria units are micrograms per Liter ($\mu\text{g/L}$) or parts per billion (ppb). Calculated criteria and concentrations are rounded to two significant digits.
2. Michigan Part 201 Groundwater Cleanup Criteria are based on "Table 1, Groundwater: Residential and Nonresidential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Tier I Risk Based Screening Levels," Michigan Administrative Code, Cleanup Criteria Requirements for Response Activity, Rules 299.44 and 299.49, effective December 30, 2013; updated June 25, 2018.

Abbreviations Include:

"NCL" indicates no criterion listed in Michigan Department of Environment, Great Lakes, and Energy (EGLE) Table 1.

"NLV" indicates the substance is not likely to volatilize under most conditions.

Footnotes Include:

(X) - For groundwater discharge to the Great Lakes and their connecting waters or discharge in close proximity to a water supply intake in inland surface waters, the generic GSI criterion shall be the surface water human drinking water value (HDV) listed in the table of this footnote except for those HDV indicated with an asterisk. For HDV with an asterisk, the generic GSI criterion shall be the lowest of the HDV, the wildlife value (WV), and the calculated final chronic value (FCV). Criterion listed have been updated to the HDV, WV, or FCV.

(JJ) - Compliance with the drinking water criteria shall require comparing the sum of the PFOA and PFOS groundwater concentrations to the drinking water criterion of $0.07 \mu\text{g/L}$.

3. U.S. EPA Residential Tap Water Regional Removal Management Levels (RMLs) were based on "Generic RML Tables," updated November 2018.
4. Bold, italic number with thick line border or italic parameter name indicates that parameter was detected above the Michigan Part 201 Groundwater Cleanup Criteria or Media-Specific Interim Action Screening Levels. U.S. EPA RMLs are provided for reference only and results detected above the EPA RMLs are not bolded or italicized.
5. Abbreviation includes:
"< RL" indicates the parameter was analyzed for but not detected above the method detection limit; RL = Reporting Limit.