



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY  
GRAND RAPIDS DISTRICT OFFICE



LIESL EICHLER CLARK  
DIRECTOR

October 7, 2021

VIA E-MAIL AND U.S. MAIL

Mr. Dave Latchana  
Associate General Counsel  
Wolverine World Wide, Inc.  
9341 Courtland Drive, NE  
Rockford, Michigan 49351

Dear Mr. Latchana:

**SUBJECT:** Notice of Approval with Conditions of the Groundwater-Surface Water Interface Investigation Summary and Work Plan as Required by the Wolverine World Wide, Inc. Consent Decree Court Case No. 1:18-cv-00039

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Remediation and Redevelopment Division, has reviewed the Groundwater-Surface Water Interface (GSI) Investigation Summary and Work Plan for the North Kent Study Area (workplan) submitted on April 26, 2021, by Rose & Westra, a Division of GZA GeoEnvironmental, Inc. (GZA) on the behalf of Wolverine World Wide, Inc. (Wolverine). This Work Plan is a requirement of the Consent Decree (effective February 19, 2020) as described in Section 7.10(b), and Appendix S of the Consent Decree.

Section 7.10(b) of the Consent Decree states that the Defendant shall submit a work plan for the installation of needed permanent GSI wells to MDEQ (EGLE) for its review and approval. The Work Plan is approved with the following conditions:

**1. Section 2.1 Groundwater Flow:**

- a. Please reevaluate the stratigraphy, well construction and shallow screened interval for borehole/MW-14 to confirm the groundwater elevation, and whether this monitoring well and groundwater elevation is appropriately categorized in relation to other "shallow zone" monitoring wells.
  - i. **JUSTIFICATION:** The shallow groundwater flow interpretation in the Wolven-Jewell area is strongly skewed due to data originating from MW-14 and may not accurately depict localized downgradient flow within the area at monitoring stations Area 19-GSI-2 and Area 19-GSI-3. MW-14 is isolated with the nearest monitoring wells, MW-10, MW-12, and MW-13, located approximately 3,500 feet away. Figure 1 depicts groundwater elevation contours from the shallow zone using data acquired in November 2019. A distinct groundwater high (861.25' amsl), centered proximal to monitoring

well MW-14 also corresponds to a topographically high zone in the area. The digital elevation model (DEM) available for the area shows a distinct NE-SW trending linear feature, possibly corresponding to a moraine.

**2. Section 6.0 Pore-Water Sampling:**

- a. Please revise the work plan to include as an appendix any available field logs or supporting documentation related to the collection of the pore water samples.
  - i. **JUSTIFICATION:** Use of pore-water sampling devices such as the Mark Henry push-point probes (discussed in Section 6.0) are considered as Alternative Monitoring Points, Section 7.5 of Groundwater-Surface Water Interface Pathway Compliance Options (April 2018), by EGLE, and accepted under various conditions, including that:

*“Documentation that the alternative samples are representative of venting groundwater in the transition zone through an evaluation of hydraulic head conditions and of the water sample geochemistry (e.g., static water levels, temperature, dissolved oxygen, conductivity, etc.) are appropriate. Static water levels higher than the elevation of the surface water body are indicators of conditions where groundwater vents to the surface water. Typical geochemical ranges or thresholds are not readily available. A site-specific lines-of-evidence proposal would be appropriate to support the determination that the sampling location is representative of the venting groundwater.”*

As such, it is important that GZA demonstrate that pore-water samples “are representative of venting groundwater in the transition zone” rather than being surface water samples (i.e., potentially diluted, and non-representative). Additional lines of evidence supporting venting groundwater being groundwater and not surface water include geochemical signatures and general characteristics (e.g., major cations and anions, along with conductivity, temperature, etc.).

**3. Section 7.1 Sampling Locations – Figure 6C - Pore Water Sampling Worksheets:**

- a. Please revise the workplan to accurately document the screen interval for the pore water - Henry sampler screen intervals for each boring location in report text, tables, and/or worksheets (purge logs).
  - i. **EXAMPLE:** The worksheet for HS-PW-3.5A lists water depth at 1.5 ft and the sample screen interval at 10-14 (didn't identify feet or inches) below the water surface. Figure 6C and Table 7.1.2 in the text list the sample collected at 0.83- 0.96 ft.

- ii. **EXAMPLE:** The WV/CH-PW-1(A) worksheet lists the water depth at 3 inches and the sample screen interval below water surface at 9 inches. This means the sample would be 6 inches into the sediment but the text table lists 0.75 -0.88 feet. Also, the water depth identified at HS-PW-9 was 7 inches and the sample screen interval below water surface was 12 inches. This seems to indicate the sample was at 5 inches into the sediment which is too close to the surface water for an accurate result. The table and figure show the sample screened interval at 1.0-1.13 feet.

4. **Section 9.0 Site Sampling Results:**

- a. Please revise the work plan to provide a table of the results identified on the field sheets/pore water sampling worksheets (purge logs) along with the results collected from the river. The worksheets themselves should be included as an appendix of the report.

5. **Section 11.2 Proposed Monitoring Locations:**

- a. Please revise the work plan to relocate WVNW-MW-202 to the edge of the bluff at a latitude between Bay Harbor Court and Nantucket Court to determine the potential for contaminants to discharge to the wetland that hydraulically precedes the Rogue River. Proposed location WVNW-MW-202 appears to be located either in a wetland, or between two wetlands. EGLE understands this area to be an oxbow of the Rogue River where flooding regularly occurs. Note that wetlands are defined as “Waters of the State” and should be considered as GSI receptors.
- b. Please revise the work plan to add a proposed GSI monitoring well to straddle the water table near well cluster MW-7S/M. This well cluster could and should be part of the future GSI groundwater monitoring program as discussed on page 9 of the text. This would limit the profiling necessary at this location since MW-7S and MW-7M already provide the vertical definition.
- c. Please revise the work plan to add a proposed GSI monitoring well near the northeast end of the fishponds located upgradient of the proposed HS-MW-261.

6. **Section 16.0 Anticipated Schedule:**

- a. The table provided in this section outlines a 6- to 7-month timeframe for the tasks in the work plan, however the following text notes that the tasks “*will require 17 months to complete drilling, VAP, and installation of proposed monitoring wells.*” Please clarify this discrepancy. EGLE views the 6- to 7-month timeframe as reasonable and achievable and would not support a 17-month timeframe for work plan implementation.

**7. Figures:**

- a. Please revise the work plan to include plan view and cross-section figures depicting per- and poly-fluoroalkyl substances (PFAS) plumes in groundwater in relation to the GSI monitoring devices and the surface water receptor.
  - i. JUSTIFICATION: The overall purpose of the GSI Investigation Study and Work Plan is to evaluate the PFAS footprint in relation to the GSI pathway (Section 3.0). However, the document does not include depictions of the localized PFAS plumes in groundwater in relation to the GSI monitoring devices, including pore-water samplers, GSI wells and/or other dedicated piezometers.

EGLE's approval is conditioned on Wolverine making the above changes to the work plan. If the above changes are not made, EGLE's approval of the work plan is withdrawn.

This approval with conditions of the work plan is based upon the representations and information contained in the submittal. EGLE expresses no opinion as to whether other conditions that may exist will be adequately addressed by the response activities that are proposed.

If you should have further questions or concerns, please contact David Wierzbicki, Remediation and Redevelopment Division, Grand Rapids District Office, at 517-420-2605.

Sincerely,



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Remediation and Redevelopment Division  
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cc: Ms. Polly Synk, Department of Attorney General  
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Ms. Karen Vorce, EGLE  
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