UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

May 30, 2017

Ms. Sharon Fisher
Harley-Davidson Motor Company
1425 Eden Road
York, PA 17402

Re: EPA review of Groundwater Human Health Risk Assessment for the former York Naval Ordnance Plant

Dear Ms. Fisher:

This letter is in response to the Groundwater Human Health Risk Assessment for the former York Naval Ordnance Plant, prepared by NewFields and dated November 2016. The report was prepared and submitted in accordance with the One Cleanup Program established by EPA Region 3 and the Pennsylvania Department of Environmental Protection (PADEP). This letter replaces the draft letter previously sent via email on April 25th ahead of the April 27th meeting.

EPA has reviewed the Groundwater Human Health Risk Assessment and provides the following comments to be addressed:

1. Section 4.1, Current and potential future human receptor scenarios, on-site commercial workers (East Campus): EPA disagrees with elimination of evaluation of VI risk for on-site commercial workers from the East Campus from the risk assessment. OSHA authority extends only to contamination originating within the workspace, and not to migration of contaminants from groundwater. OSHA standards are not intended to address the VI pathway. Current and potential future workers from the East Campus should be evaluated for potential VI exposure. While groundwater on site is not currently used for potable purposes, usable groundwater is considered a resource and is evaluated as a potential source of potable water (ingestion, inhalation, and dermal exposures) in a baseline risk assessment. For current exposure considerations, confirm that groundwater is not used as process water or for any other use such as employee showers, sinks, washing apparatus, etc.

2. Section 4.1, Off-site residents: As noted above, contaminated groundwater off the site should also be evaluated as a potential potable source. Monitoring wells at the eastern and southern boundaries of the site reveal VOC contamination exceeding VISL screening concentrations, and in accordance with EPA VI guidance, residences within 100 ft of these wells should be evaluated for potential VI exposures.

3. Page 12, reinstated receptors: As noted above hypothetical future potable use of groundwater is generally evaluated in a baseline risk assessment, and remedial goals typically align with drinking water standards (MCLs or RSLs). An exception may be

made for areas of a site defined as an area where it is technically impracticable to remediate groundwater.

4. Section 4.4, Frequency of Detection: Eliminating contaminants with a Frequency of Detection (FOD) or less than 5% of analytical samples should be done with certain conditions. For example, chemicals that are associated with site operations, that are reported in more than one medium, and/or are present at high concentration should not be eliminated using a FOD rationale. Moreover, a minimum of 20 samples per medium are necessary to determine an FOD of 5%. Xylene should therefore be included as a COPC for appropriate receptors for this site, because it is site-related, and is present at high concentrations in the TPH plume. Hexavalent chromium is site related and is reported above groundwater screening concentrations and should also be included as a COPC for appropriate receptors.

5. Section 4.4, Residential VI exposure risks in LUA # 4 should not be eliminated from evaluation because residential properties are located within 100 ft of groundwater contamination exceeding VISL screening concentrations.

6. Section 4.4.1, Groundwater (current and reasonably anticipated future conditions): The VISL model does not differentiate between residential and industrial/commercial attenuation factors. Absent site-specific measurement or information about specific air exchange rates, preferential pathways (building penetrations), etc., EPA VISL groundwater-to-indoor air attenuation factors should be used to evaluate data. Use of the VISL attenuation factor of 0.001 will reduce groundwater screening concentrations for the industrial/commercial VI pathway by a significant amount, and may result in identification of additional COPCs.

7. Concentrations of groundwater contaminants should be conservatively compared to the lower of MCLs or tapwater RSLs. As an example, in Appendix D1, 1,1,1-trichloroethane (1,1,1-TCEA) concentrations in groundwater are compared to the RSL for tapwater of 800 ug/l. However, the remedial goal likely to be applied to 1,1,1-TCEA is the MCL of 200 ug/l, raising the possibility that wells with 1,1,1-TCEA concentrations exceeding the MCL may be eliminated from consideration in the risk assessment as well as remedial decisions. Xylene should be screened using the lower RSL value, because xylene presents a potential inhalation risk that is not captured in the MCL which considers only ingestion exposure. Cyanide should be chosen as a COPC because free cyanide was reported in several groundwater samples, and exceeds the MCL of 200 ug/l in one sample.

8. Section 4.4.2.2 and Appendix D3, COPCs for on-site residents via vapor intrusion: Contaminants for this exposure route should be screened against the lower of MCLs or VISL groundwater screening concentrations. For some contaminants such as chloroform the MCL of 80 ug/l (which applies to total trihalomethanes, not to chloroform alone) is significantly higher than the VISL screening concentration of 1.5 ug/l. The maximum concentration of chloroform identified in this table is 52 ug/l, which means that chloroform is a contaminant of concern for the VI intrusion pathway for residential receptors.

9. Section 4.5.1.1, Commercial/Industrial workers: As noted above, the VISL nonresidential vapor attenuation factor of 0.001 should be used.

10. Section 4.5.1.2.2, Groundwater depth > 15 to 75 feet: It is stated that EPCs for groundwater are calculated for each groundwater well to account for water table and terrain variation. Reconcile these statements with Tables 13 and 14 and Appendix F which appear to list upper confidence limit calculation results for data for several wells for each LUA. In addition, volatilization factors calculated for deep groundwater should be detailed for each contaminant and target population (construction and utility workers) to allow for verification of calculated indoor air concentrations.

11. Section 5.3, COPCs lacking toxicity criteria: A discussion of the lack of inhalation toxicity criteria for 1,2-dichloroethene should be included in this section, and acknowledged elsewhere in the report when VI risk results are discussed. 1,2-Dichloroethene is a notable risk driver for this site, and the lack of inhalation toxicity criteria should not imply that no risk is associated with inhalation of this chemical.

12. Section 5.4.2.2, Development of a multiple endpoint safety range for noncarcinogenic effects of TCE: The proposed ten-fold range in the hazard quotient for TCE cannot be applied in the risk assessment. EPA utilizes a hierarchy of toxicity criteria for baseline risk assessments as outlined in OSWER 9285.7-53, Human Health Toxicity Values in Superfund Risk Assessments. This hierarchy selects IRIS toxicity values as a first priority, followed by EPA provisional toxicity criteria, and other toxicity criteria. TCE has an IRIS published reference dose, which should be used in baseline risk assessments without modification.

13. Table 9, Summary of wells used to calculate EPCs by LUA and GW VOC plume: It is unclear why wells MW-124 and particularly MW-119, which reported the highest concentrations of BTEX, trimethylbenzenes, and naphthalene, were not included in the well grouping for the petroleum plume.

14. Appendix D2, LUA #3 Groundwater: Elevated concentrations of 1,1,1-trichloroethane (1,1,1-TCEA) along with other solvents are reported in groundwater in this land use area. 1,4-Dioxane is a frequent co-contaminant found when notable concentrations of 1,1,1-TCEA are present, and numerous wells in this LUA demonstrated significant 1,4-dioxane concentrations (up to 390 ug/l). An examination of quantitation limits obtained for 1,4-dioxane revealed a range of 200 ug/l to 30,000 ug/l. These quantitation limits exceed the tapwater RSL for 1,4-dioxane by two to four orders of magnitude, which may suggest uncertainty with the identification of all wells in this LUA with significant 1,4-dioxane concentrations.

15. Appendix D2, LUA #4 Groundwater: No wells are listed as the location of the maximum reported groundwater concentration for several contaminants listed on this table. Please explain.

16. Table 10 and Appendix F, Summary of CTE and RME indoor air EPCs for on-and off-site commercial industrial workers: As previously noted, the volatilization factor (VF) used should be the VISL VF of 0.001, unless site specific information is used to support

the use of a VF of 0.0036. Indoor air EPCs should be recalculated. As previously noted, LUA #1 should also be evaluated for VI risks.

17. Appendix F, On-Site Indoor Air EPCs for Commercial/Industrial Workers, West Campus combined GW plumes: Because a building could be placed anywhere on LUA 3 (or on any other area of the site), it is non-conservative to combine groundwater data from the majority of the site area to calculate an EPC. For example, the only measured concentrations of benzene are present in the TPH plume. Combining benzene results from the TPH plume with non-detect results from approximately 27 other wells located above the VOC plume results in a benzene EPC that is lower than an EPC calculated using wells in the center of the petroleum plume only. Other well groupings in LUA 3 should be modified to take the highest contaminant concentrations into consideration in calculating an exposure point concentration. The center (highest concentrations) of the VOC plume in LUA 3 appears to include wells MW-81S, MW-81-D, MW-114, MW-131, MW-132, etc., and not all of the 33 well results used to calculate EPCs.

18. Appendix H: For verification purposes, DA_{event} values for carcinogens should be listed in the Dermal RBSLs for Construction and Utility Workers spreadsheet.

Thank you for your cooperation in working with EPA and PADEP in the remediation of this site. If you have any questions, please don't hesitate to call me at (215) 814-3407.

Sincerely,

Griff Miller
LCDR, U.S. Public Health Service
Office of Pennsylvania Remediation
EPA Region 3

cc: Pamela Trowbridge, PADEP (via email)
Chris O'Neil, GSC (via email)