UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

Mr. Michael Zack
MAHLE Industries, Incorporated
23030 MAHLE Drive
Farmington Hills, Michigan 48335 USA
Letter sent electronically to: michael.zack@us.mahle.com

RE: Review of 2021 Groundwater and Ambient Air Monitoring Report
MAHLE Engine Components
Atlantic, Iowa
EPA RCRA I.D. No. IAD096526108

Dear Mr. Zack:

The U.S. Environmental Protection Agency, Region 7 (EPA) has completed our review of the document titled "2021 Groundwater and Ambient Air Monitoring Report" dated June 22, 2021. Based on a review of the report, the following comments are provided which must be addressed prior to EPA acceptance of the document. In particular, the EPA does not approve of terminating the operation of the groundwater extraction and treatment system as proposed in the report at this time for the following reasons:

1) It is stated within Section 2.1, *Site History*, that per the September 2020 Statement of Basis, operation of the groundwater extraction and treatment system must continue until tetrachloroethylene (PCE) and 1,1-dichorotheylene (1,1-DCE) results from two consecutive influent sampling events are less than the criteria identified in the Statement of Basis. The EPA would like to reiterate that the Statement of Basis does not state that influent sampling results will be the basis for terminating operation of the groundwater extraction and treatment system. In fact, the Statement of Basis only states that *"MAHLE will continue to operate the existing on-site groundwater extraction and treatment system until the concentrations of PCE and 1,1-DCE are below 35 micrograms per liter (µg/L) and 55 µg/L respectively, for two consecutive sampling events"* and that *"annual groundwater sampling will continue until the remediation goals are met and then for two years afterwards to ensure contaminant concentrations do not rebound."*

   During our phone conversation on June 10, 2022, the EPA sought clarification as to where the decision to use influent sampling results as the sole criteria for ceasing operation of the system was documented. It was confirmed that only a verbal discussion had taken place between the previous EPA project manager, Mr. Mark Doolan, and the facility regarding this issue.

   By this letter, EPA is providing clarification as to the appropriate criteria for terminating the operation of the groundwater extraction and treatment system, as well as when annual groundwater monitoring will be allowed to cease. Based on a review of the 2006 RCRA Corrective Action Summary Report, it appears that the criteria included within the Statement of Basis, as approved by the EPA Land, Chemical & Redevelopment Division Director, was

derived from the recommendations for remediation goals provided within that report, which stated the following at Section 4.2:

> *GDA selected [Maximum Contaminant Levels] as the remediation goals for [volatile organic compounds (VOCs)] in groundwater. However, the USEPA has not issued an MCL for 1,1-dichloroethane or 1,4-dioxane. Therefore, GDA again selected the Region 9 [Preliminary Remediation Goals] for these compounds. Table 5 shows that samples from wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-9, MW-10, and MW-11A, along with the recovery wells, have exceeded the remediation goal for one or more VOCs during recent sampling. These results show that additional remediation or the continued operation of the groundwater treatment system is needed. GDA will continue operating the groundwater remediation system to maintain hydraulic containment of the groundwater with concentrations exceeding the remediation goals.*
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> *To set criteria that the groundwater must meet in order for GDA to consider discontinuing operation of the groundwater treatment system, RMT used the USEPA BIOCHLOR model to evaluate what concentrations would need to be present in the source area in order to see concentrations meeting the remediation goals at the downgradient property boundary. Appendix C presents the BIOCHLOR model analysis and shows that source area groundwater concentrations will need to drop to 35 µg/L for PCE and 55 µg/L for 1,1-DCE to meet remediation goals at the property boundary. Currently, the source area concentration for these compounds (as measured at MW-2) is 400 to 800 µg/L for PCE and 100 to 200 µg/L for 1,1-DCE.*

For clarification, Region 9's Preliminary Remedial Goals (PRGs) have since been replaced with EPA's Regional Screening Levels (RSLs). For those constituents that do not have an associated Maximum Contaminant Level (MCL), tapwater RSLs should be used at this time.

The Statement of Basis set specific concentration thresholds for PCE and 1,1-DCE in groundwater at the source areas (including monitoring well MW-2) to ensure that contaminant concentrations are sufficiently lowered in the source areas and throughout the plume, thereby eliminating the risk of groundwater contamination above drinking water standards migrating towards and ultimately beyond the downgradient property boundary. The Statement of Basis confirms this intent, stating that *"[t]he groundwater extraction and treatment system . . . will continue [to operate] until it is demonstrated that no off-site migration risk remains."* Multi-point influent sampling results are not appropriate for evaluating this objective. The criteria set forth in the Statement of Basis should instead be applied only to representative groundwater sampling results from single-point monitoring/recovery well locations. Of course, influent sampling results should continue to be collected, analyzed, and compared against effluent sampling results to evaluate the effectiveness of the groundwater treatment system in removing these constituents of concern prior to discharge.

In 2021, sampling results at MW-2 indicated that PCE was detected in groundwater at this location considerably greater than the set criterion at a concentration of 294 µg/L. Additionally, sampling results at MW-1 indicated that PCE was detected in groundwater at a concentration of 280 µg/L. Accordingly, two years of sampling at these source area wells does not achieve the set criterion that would allow for terminating operation of the system.

Lastly, remediation goals as outlined in the 2006 Report including applicable MCLs where one exists, or tapwater RSLs where MCLs have not been derived for a particular constituent, should be used when evaluating the appropriate end to long-term groundwater monitoring at the facility. EPA notes that an environmental covenant restricting land use to non-residential purposes only and prohibiting the use of groundwater at the facility for drinking water purposes has yet to be executed and recorded with the County Recorder's office. Until this is accomplished, long-term groundwater monitoring will be required indefinitely.

2) Based on a review of groundwater sampling results since 2018, PCE was detected in groundwater at the downgradient property boundary monitoring well MW-4 and has recently shown an increasing trend to above MCLs. This monitoring well is screened near the base of the sandstone aquifer, below monitoring well MW-4A screened within the shallower, less conductive unconsolidated material where sampling results indicate concentrations below laboratory detection levels. The chlorinated VOC plume appears to be migrating within the deeper, more conductive portions of the aquifer which is of notable concern.

3) PCE groundwater concentrations detected at recovery well RW-3, which is nearer to the source areas than recovery well RW-1, were greater than the set criterion and appeared to be exhibiting a steady increasing trend in concentration since at least 2015 to 2020. In 2020, PCE was not detected above laboratory detection limits at RW-3 which is questionable since PCE was detected above 200 µg/L just the year before. Groundwater sampling was not conducted at RW-3 in 2021 due to an obstruction in the well. Two years of sampling at this source area well does not meet the set criterion allowing for terminating operation of the system.

Other Comments:

4) **Section 3.1, Well Gauging and Groundwater Sampling.** It is stated within this section that a portion of the well casing has collapsed at monitoring wells MW-5 and MW-12, and that there is an obstruction in recovery well RW-3. It is recommended later in the report that a new monitoring well be installed near the southern property boundary to replace MW-5 and MW-12, at which time MW-5 and MW-12 would be abandoned. Please provide for EPA approval a brief work plan with a figure depicted the proposed monitoring well locations, and a schedule for well installation and well abandonment activities. Additionally, it is vital to the remedy that a fully functional recovery well system remain established. Please provide recommendations, and a brief work plan, on how the obstruction at recovery well RW-3 will be addressed to allow for proper groundwater extraction near the source areas.

5) **Section 4.1, Groundwater Sampling Results.**

    a. Please identify within this section all monitoring/recovery well locations at which sampling indicated exceedances of each constituent of concern above either the MCLs or, if no MCL exists for a particular constituent, tapwater RSLs.
    b. It is stated within the second bullet of this section that 1,4-dioxane was detected above the tapwater RSL, but less than the MCL. This statement should be revised to clarify that no MCL exists for 1,4-dioxane, thus the tapwater RSL is applicable.

6) **Section 5.2, Ambient Air.** Please provide the EPA a copy of the Due Care Plan referenced within this section.

7) **Figure 5, Groundwater Analytical Results.**

   a. The figure indicates that PCE was not detected in a groundwater sample collected at MW-4 on December 11, 2019. This is incorrect in that PCE was detected at a concentration of 0.539 µg/L. Please revise the table/figure accordingly.
   b. The figure indicates that dissolved arsenic was not detected in a groundwater sample collected at MW-4A on November 9, 2021 above the laboratory detection limit of 10 µg/L. This is incorrect in that dissolved arsenic was not detected above the laboratory detection limit of 7.8 µg/L for this sample.
   c. The figure indicates that total lead was not detected in a groundwater sample collected at MW-10 on November 10, 2021. This is incorrect in that total lead was detected at a concentration of 27.5 µg/L. Please revise the table/figure accordingly.

8) **Operation and Monitoring Work Plan and Quality Assurance Project Plan.** Please provide a reference within the report citing the EPA-approved Corrective Measures Implementation Work Plan, Operation and Monitoring Work Plan and/or Quality Assurance Project Plan with which groundwater extraction and treatment system activities, and long-term groundwater and long-term indoor air monitoring activities are being conducted in accordance with. If the current QAPP is greater than five years old or does not include all activities or laboratory analysis methods currently being conducted, an updated QAPP must be submitted to EPA for review, approval and signature in accordance with Section 7.2.3 of EPA's Region 7 Quality Management Plan dated January 2020 (https://www.epa.gov/sites/production/files/2019-10/documents/complete_final_2017_region_7_qmp_with_signatures.pdf). If the EPA-approved QAPP is greater than five years old and no revisions are needed, please submit a newly signed signature page for full execution.

Please submit a response to comments and a revised report within 30 days from receipt of this letter. If you have any questions concerning this matter, please don't hesitate to contact me. I may be reached at (913) 551-7403, by email at messinger.lisa@epa.gov or the letterhead address.

Sincerely,

LISA MESSINGER

Digitally signed by LISA MESSINGER
Date: 2022.10.20 07:16:09 -05'00'

Lisa Messinger, PG
Project Manager
RCRA Oversight, Authorization, Grants
& PCB Branch
Land, Chemical & Redevelopment Division

cc: Brandon Kinter, Tetra Tech