REGION 1
BOSTON, MA 02109

VIA ELECTRONIC MAIL

Date: See Signature Stamp Below

John Scaramuzzo, P.E.
Program Manager, Tetra Tech, Inc.
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RE: EPA Response to the Re-Solve Site Group's February 2025 Twenty-Sixth Year Operations Report
Management of Migration Remedial Action
Re-Solve, Inc. Superfund Site, North Dartmouth, Massachusetts

Dear Mr. Scaramuzzo:

The United States Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have reviewed the Re-Solve Site Group's (RSG's) February 6, 2025 *Twenty-Sixth Year Operations Report* (Annual Report) for the Re-Solve, Inc. Superfund Site in North Dartmouth, Massachusetts (the Site). The Annual Report was prepared by Weston Solutions, Inc. and submitted to EPA by Tetra Tech, Inc., on behalf of the RSG. EPA's and MassDEP's comments on the Annual Report are included as Attachment 1.

Successful Mixing and Continued Monitoring of Second Bioreactor Bed

The mixing of the treatment medium in the second abiotic bioreactor bed (ABR-2) was successfully completed in late June 2023, and the ABR-22 treatment bed was returned to operation at that time. According to the Annual Report, the monitoring of the performance of the fully mixed ABR-2 treatment bed will continue to be conducted as specified in the ABR-2 Mixing Work Plan, and the performance monitoring data will be provided in the Monthly Operations Reports for the Site.

Compliance with CERCLA Off-Site Rule

On Oct. 24, 2024 EPA confirmed that the following facilities were acceptable to receive Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) wastes from the Site:

- *Clean Harbors Lone Mountain, Waynoka, OK (EPA ID #OKD065438376)*
- *Clean Harbors El Dorado, El Dorado, AR (ARD069748192)*

- *Clean Harbors Deer Park, La Porte, TX (EPA ID #TXD055141378)*

Prior to future shipments of waste off-site, the RSG should resubmit facility information so that EPA can confirm that the proposed disposal/treatment facilities are in compliance with CERCLA's Off-Site Rule.

Statements about Polychlorinated Biphenyl (PCB) Contamination and further PCB Sampling

The Annual Report makes certain statements about PCB levels in the Copicut River that are not supported by the existing data. In order to make such statements about PCB levels not being associated with the Site, or not being contributed to by the Site, further evidence would be needed. These statements should be removed from the report.

The 1987 Record of Decision (ROD) for the Site provides estimates of the extent of migration of PCBs in groundwater, based on the solubility of PCBs as affected by volatile organic compound (VOC) concentrations and assumptions about the extent of VOC remediation. Following many decades of remediation and in light of the elevated levels of VOCs remaining in certain wells and at certain depths, additional PCB sampling should be incorporated into the site-wide monitoring program to determine the current extent of PCB contamination at the Site, and in particular, whether PCBs have migrated beyond the waste management area.

Investigating Well W-1B Contaminant Fluctuations

According to the Annual Report, in well W-1B, which is within the capture zone of the groundwater extraction system, there have been fluctuations in the concentrations of perchloroethylene (PCE), trichloroethylene (TCE), and 1,1,1-trichloroethane (1,1,1-TCA) since May 2016. Because those fluctuations were not consistent with previous data, supplemental monitoring of W-1B and nearby wells (W-1A, W-2, and the upgradient residential well PW-0) was performed in 2016 and 2017. The results of the regular and supplemental monitoring document that the fluctuations in the volatile organic compound (VOC) concentrations in W-1B have been isolated to W-1B. Nearby wells have not exhibited elevated VOC concentrations or exceedances of Maximum Contaminant Levels (MCLs). The Annual Report notes that the water from residential well PW-0 is treated using a point-of-entry treatment system prior to use by the residents at the PW-0 property. After five years (2018 through 2022) of very low VOC concentrations in W-1B, elevated concentrations of PCE, TCE, and 1,1,1-TCA were again detected in May 2024.

Well W-1B was sampled during the fall (November) 2024 sampling event, once again indicating elevated concentrations. Going forward, the RSG plans to include that well in the November groundwater quality sampling events until the situation is resolved. To attempt to diagnose the cause of the intermittent elevated PCE and TCE concentrations in monitoring well W-1B, the RSG proposes to install recording water level transducers in W-1B and the adjacent overburden monitoring well W-1A. The water level trends will be evaluated to assess whether any unexpected hydraulic stresses (pumping impacts) are observed in either the overburden or bedrock at this location. The water level

trends will be compared to VOC concentration trends in W-1B to assess if there are correlations between water levels and VOC concentrations.

EPA concurs with this proposal for wells W-1B and W-1A.

Proposed Modification to the Environmental Monitoring Program

Section 6 of the Annual Report proposes to remove six wells from the annual monitoring program that have been consistently non-detect for VOCs over the past 24 years. The six wells proposed for removal from annual sampling requirements are monitoring well pairs NN/NS, ON/OS, and PN/PS which are all located south of Carol's Brook. The Annual Report recommends that the frequency of sampling of these wells be reduced to once every five years – to occur in the year preceding EPA's Five-Year Review (FYR) in order to support the FYR. This would mean that the next sampling of these three well pairs would occur in May 2027. EPA and MassDEP concur with this proposed modification.

Higher Resolution Method for PCB Analysis and Electronic Data Deliverables

Higher resolution EPA Method 8270-SIM should be used going forward for all polychlorinated bi-phenyl (PCB) sampling, so that reporting limits for the NPDES permit equivalency limits (0.0115 micrograms per Liter or "ug/L") are met. In 10 of the 12 monthly effluent samples presented in the Annual Report, the detection limit did not meet the National Pollutant Discharge Elimination System (NPDES) permit equivalency limit (0.25 ug/L vs. 0.0115 ug/L).

Additionally, moving forward, reports for the Site should be submitted with the laboratory reports (EDDs) for the data presented.

Newly Installed Signage at Cornell Pond

The RSG has replaced the fish advisory signage at Cornell Pond. Add a standing section to the quarterly reports to document the condition of the signage (total number, placement, condition, etc.) and include photographic evidence.

The RSG shall respond to the comments presented in Attachment 1 and submit a *response-to-comments letter*, as well as *a revised Twenty-Sixth Year Operations Report* and *Operations and Maintenance Plan* (O&M Plan) for EPA's review and approval, within 45 days of receipt of this notice, or by Friday, May 16, 2025.

Should you have any questions regarding the comments, statements, or technical direction outlined within this letter, please contact the undersigned at 617-918-1292 or morash.melanie@epa.gov.

Sincerely,

MELANIE MORASH

Digitally signed by MELANIE MORASH
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Melanie Morash
Remedial Project Manager
Massachusetts Superfund Section
Superfund and Emergency Management Division, Remediation Branch I
U.S. Environmental Protection Agency – Region 1

cc (via e-mail): Matthew Audet, U.S. EPA
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Encl. Attachment 1

Attachment 1
EPA's and MassDEP's Comments on the RSG's Twenty-Sixth Year Operations Report
Management of Migration Remedial Action
Re-Solve, Inc. Superfund Site

1. **Section 1.2. Summary of Activities During the Year 26 MOM Operations and Maintenance Period.** Revise to include a bullet for the fish tissue sampling that occurred on Sept. 24, 2023.

2. **Section 2. Summary of Environmental Monitoring Results.** Revise to include a bullet for the fish tissue sampling that occurred on Sept. 24, 2023.

3. **Section 2.3. Surface Water Quality.** Revise the text to specify which tables in Appendix C present the surface water quality monitoring results.

4. **Section 2.4. Fish Tissue Monitoring**. Revise the text to provide a reference to Table 3-6, which summarizes the fish tissue monitoring results.

5. **Section 3.4.5. Surface Water Quality Data Evaluation**. Page 3-15.

    a. The second sentence states, "There were three locations sampled in August 2023 during the Year 26 O&M Period: SW-1, SW-3 and SW-7, with the sampling results being included in Appendix C." Revise the sentence to specify the table numbers in Appendix C.

    b. The fourth sentence states, "There were no detections of any VOCs at location SW-1 (in the Copicut River at the upstream of end of the Site) by the 2023 and 2024 sampling events." Revise to state that there were no detections…at the upstream [delete *of*] end of the Site) [delete *by*] during the 2023 and 2024 sampling events.

    c. The fifth sentence states, "For SW-3, which is in the Copicut River downstream of Site, the only VOC detections were estimated levels of VC…below the laboratory reporting limits." Revise to state as follows: *At* SW-3, which is in the Copicut River downstream of *the* Site, the [delete *only*] VOC detections were… Also, revise the text to reference the appropriate table numbers with the sampling results.

    d. The second-to-last sentence of the first paragraph states, "At SW-7 in the unnamed tributary, there were fewer VOCs (only cis-1,2-dichroloethene [cDCE] and VC) detected in August 2023." Revise the sentence to specify fewer VOCs than _____.

    e. The last sentence of the first paragraph states, "In August 2024…the VC concentration at SW-7 was somewhat higher (4.3 ug/L)…" Revise the sentence to specify somewhat higher than _____.

    f. Revise this section to include a discussion of the concentrations of volatile organic compounds (VOCs) in surface water in relation to water quality criteria or screening values. It appears that the vinyl chloride (VC) concentration of 4.3 micrograms per Liter

(ug/L) is higher than the National Recommended Water Quality Criteria (NRWQC) for human health+organism.

6. **Section 3.4.5.1. Sampling of Surface Water for PCBs.**

    a. Revise this section to reference the table(s) with PCB data. In addition, provide a table with the individual congener results. The table provided that presents PCB data provides only homologue results.

    b. This section states that the only PCB congener detected in the samples from the Copicut River at SW-3 was PCB-209, decachlorobiphenyl. Specifically, the report states, "This congener has a "non-Aroclor" source, meaning that it isn't present in the commercial Aroclor mixtures disposed of at the ReSolve Site." Why does the RSG feel that PCB-209 was not found in any of the Aroclor mixtures at the Site? Each Aroclor mixture contains a range of PCB congeners with different chlorine substitution patterns, meaning the exact composition varies based on the Aroclor number. PCB-209 is found in Aroclor mixtures and there is no reason to believe that it was not part of Aroclor mixtures found at the Site. EPA does not agree that this statement is adequately supported so as to be included in the report, and it should be removed.

    c. The report states, "However, PCB-209 is one of 18 congeners being emitted from New Bedford Harbor, as quantified in measurements made by EPA and reported in the Martinez study. Atmospheric deposition has been documented as the primary source of PCBs to many rivers, including the Delaware River, and congeners can be transferred to the watershed efficiently through this deposition process. Therefore, it may be concluded that the single PCB congener detected in the Copicut River at the downstream end of the ReSolve Site is not related to the presence of PCBs in the subsurface at the Site."

    EPA does not agree with the last sentence which states that it may be concluded that the PCB contamination is not related to the Re-Solve Site, and it should be removed from the report. Without further evidence, the statement about PCB-209 not being associated with the Re-Solve Site is not supported.

7. **Section 3.6 (Fish Sampling Results) and Table 3-6 (Summary of Fish Monitoring Data).** Revise the table and accompanying discussion in the Annual Report to provide screening values for which to compare the fish tissue PCB levels. The discussion and presentation of concentrations of PCBs in fish tissue need some context in terms of comparison to appropriate screening levels.

8. **Section 3.8. Findings and Conclusions.** The last paragraph of this section states, "As further evidence of the effective design and operation of the MOM groundwater extraction and treatment system, it should be noted that implementation of the system appears not to have mobilized DNAPL beneath the Site, since the predicted DNAPL zone has not increased in size, contaminant concentrations have not consistently increased in any of the bedrock wells at the Site, and no Site-related contamination has been detected in area residential wells.

Additionally, operation of the MOM groundwater extraction and treatment system has not adversely impacted the associated wetlands."

EPA notes here that the RSG, in response to a request from the Agencies, is separately preparing an analysis of the DNAPL at the Site that may further support these conclusions. EPA expects this analysis to include a discussion of the current understanding of the Conceptual Site Model (CSM) for the Site and a detailed discussion that assesses the effectiveness of the current remedy, explores interactions between the upper and lower layers of the aquifer, and includes figures and a discussion drawing from the screened interval depths of the monitoring and extraction wells. EPA expects an outcome of this analysis will be a discussion of opportunities for optimizing the monitoring network. Perhaps there are wells that do not need to be monitored anymore or monitored as frequently, or possibly there are areas where additional monitoring would be beneficial to fill gaps.

9. **Section 4.7.2.1. ABR System Treatment Performance / Volatile Organic Compounds.** Revise this section to expand the discussion to note the 0-5 gallons per minute (gpm) of ABR-1 effluent recycling efforts to promote populating dechlorinating bacteria in ABR-2 following the Phase 2 Mixing Program.

10. **Section 4.7.3.1. Monitoring of Water Levels in the Vicinity of the ABR Beds.** This section references Figure 4-8, which appears to be a typo. Revise this section to correct the figure references to Figures 4-6 and 4-7.

11. **Section 6. Modifications to the Environmental Monitoring Program.**

    a. Revise this section, Table 6-1 (Environmental Monitoring), as well as the O&M Plan for the Site, to specify that moving forward, all PCB analysis is to be completed via EPA Method 8270-SIM, so that reporting limits for the NPDES permit equivalency limits (0.0115 ug/L) are met. In 10 of the 12 monthly effluent samples analyzed (see Table 4-3 – Comparison of Treatment Plant Effluent Concentrations to NPDES Equivalency Limits), the detection limit (0.25 ug/L) was not below the NPDES permit equivalency limit (0.0115 ug/L).

    b. Comment from previous EPA correspondence to the RSG – Revise this section, Table 6-1 (Environmental Monitoring), as well as the O&M Plan for the Site, to incorporate the following modification:

       Groundwater Quality Monitoring for PCBs. Incorporate broader PCB sampling into the Site-wide groundwater monitoring program, to better understand the nature and extent of PCB contamination at the Site. Review existing Site data and sampling protocols and prepare and submit for EPA approval a draft O&M Plan update for the Site to integrate PCB sample collection and analyses into the groundwater analytical suite at the Site.

       RSG's previous response: Please explain EPA's objectives for this supplemental sampling so that we can evaluate potential appropriate options for PCB sample collection. Please note that there is a documented record that, consistent with the ROD, there was

extensive mass removal of the sources of PCB contamination from the overburden soils and sediments to well below the cleanup standards during the implementation of the Source Control Remedy.

EPA's response – EPA needs to assess to what degree the ongoing operation of the remedy has resulted in reductions in groundwater PCB contaminant concentrations. The annual reports for the Site include side-by-side figures that show current-day overburden and bedrock volatile organic compound (VOC) groundwater plumes compared to baseline (1997). However, we do not have groundwater plume data for PCBs to understand the levels and extent of the PCB plume and the responsiveness of the aquifer to pumping over time.

There are no additional PCB groundwater data discussed or presented in tabular form in the Annual Report. The only EPA Method 8270-SIM PCB results (higher resolution, to meet the NPDES discharge criteria) are shown in Tables 4-3 and 4-4 (Comparison of Treatment Plant Effluent Concentrations to NPDES Equivalency Limits), which are a fraction of the total PCB results presented. Table A-1 (Groundwater Quality Monitoring Data) in Appendix A displays the groundwater monitoring data, however, no PCB data is presented.

The 1987 Record of Decision (ROD) states:

> Both PCBs and VOCs are found in high concentrations in the saturated zone at the site….VOCs are highly soluble in groundwater, whereas PCBs are inherently insoluble and have a tendence to adsorb onto soils. The solubility of PCBs, though, is enhanced in the presence of VOCs and appears to increase as the concentration of VOCs increase. High concentrations of VOCs at the site cause PCBs to desorb from saturated soils and dissolve in groundwater. This is supported by the fact that PCBs were detected in filtered groundwater samples at levels higher than the normal 15 ppb maximum solubility. As expected, VOCs were also detected at high concentrations in the same samples.
>
> Once in solution, PCBs migrate in groundwater, but at a slower rate than VOCs. The migration rate of PCBs is determined by the VOC concentrations in the soil matrix. High VOC concentrations, such as those presently found at the site, will cause PCBs to migrate an estimated 10 feet in 15 years. On the other hand, if VOC concentrations are reduced to the target remediation levels selected for groundwater, PCB migration will decrease to about 10 feet in 1200 years.[1]

The RSG can propose a sampling plan to assess the extent and migration of PCB contamination in groundwater within and beyond the waste management area based on best professional judgement and drawing upon data trends for other contaminants, which can, pending the results of sampling, be either scaled up or down in subsequent years.

[1] ROD at 60.

12. **Table 3-4. Depths and Screened Intervals for Monitoring and Extraction Wells**

    a. The second page of the table is incorrectly labeled “Table AD-1.” Correct the typo.

    b. Revise the well depths and screened interval values to be noted elevations referenced to datums used to generate the site topographic and groundwater contour figures.

13. **Appendix J. Laboratory Reports for High Resolution Analysis of Process Water and Treatment System Effluent for PCBs.** Revise Appendix J or add a new appendix to provide the laboratory reports (Electronic Data Deliverables or “EDDs”) for all of the data presented in the Annual Report. Moving forward, provide EDDs for all data in Site reports (monthly, quarterly, annual, etc.).