

Georgia Department of Natural Resources

Environmental Protection Division-Land Protection Branch

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Judson H. Turner, Director

December 14, 2015

VIA EMAIL & REGULAR MAIL

Rheem Manufacturing Company
c/o Gregory Henry
1100 Abernathy Road, NE, Suite 1400
Northpark Building 500
Atlanta, GA 30328

Re: Voluntary Remediation Program Semi-Annual Progress Report #4 – November 30, 2015
Voluntary Remediation Program Semi-Annual Progress Report #3 – June 1, 2015
Voluntary Remediation Program Semi-Annual Progress Report #2 – December 1, 2014
Voluntary Remediation Program Semi-Annual Progress Report #1 – June 2, 2014
Rheem Manufacturing Company
138 Roberson Mill Road, Milledgeville, Baldwin County, Georgia

Dear Mr. Henry:

The Georgia Environmental Protection Division (EPD) has completed its review of the Semi-Annual Progress Reports listed above for the Rheem Manufacturing Company Site located in Milledgeville, Georgia. EPD agrees with the recommendation to install a fan for the depressurization system on the sub-slab portion of the building and encourages this, along with the proposed depressurization system expansion in the building to the east of the TCE release area, be completed within the next reporting period. EPD also agrees with continuing the operation of the groundwater pump and treat system during the evaluation of source area groundwater remedial options, the Soil Vapor Extraction (SVE) system for remediation of VOCs in the vadose zone, the expansion and ongoing monitoring of the ART well network, and implementing the proposed bioremediation. EPD has the following comments which should be addressed in accordance with the Voluntary Remediation Program Act (the Act):

Conceptual Site Model

1. Section C1.5 of the Conceptual Site Model (CSM) in the June 2014 report discussed a hypothetical Point of Exposure (POE) to confirm that groundwater remains protective 1000 feet downgradient and proposed to designate a groundwater monitoring point as a Point of Demonstration (POD). Please establish the POE and designate the POD and include these details in the next report as part of the updated CSM and final remedial plan.
2. The most recent October 2015 groundwater samples report TCE at MW-34 (57 µg/L). The two (2) downgradient wells from MW-34, MW-47 and MW-36, are screened at lesser depths than the screened interval of MW-34 and did not report detections of TCE. Although double-inflatable packers were used in 2012 to obtain vertical specific groundwater samples at MW-36 to depths of up to 200 ft-bgs, the screened interval of MW-34 is deeper than the screened interval of MW-47 and MW-36 by approximately 63 and 97 feet, respectively; therefore, it is possible TCE has progressed downgradient at a greater depth. If TCE concentrations continue to be reported at the greater depths reported at MW-34, a downgradient well installed to a greater depth may be required in efforts to establish vertical and horizontal delineation. Please take into consideration that it may be possible to address both Comment #1 and Comment #2 jointly.

3. The cross-section depicted in Figure No. C-2 of the Conceptual Site Model in the June 2014 report incorrectly depicts the screened interval of MW-36 at approximately 140 feet above mean sea level (ft-amsl). Please correct this value to the correct depth of approximately 290 ft-amsl in future figures. Also, please include a column in Table 1 for screen intervals in feet above mean sea level (ft-amsl) in the next report in order to compare screen intervals of on-property and off-property wells.
4. Per Comment #3 of EPD's August 22, 2012 letter to Rheem and Consent Order EPD-VRP-007, note that within 6 months of discovery, impacted parcels should be added to the VRP application as qualifying properties or EPD must be notified of the properties non-qualifying status. Please include the strategies (e.g. establish covenants) for addressing the observed impacted properties in the finalized remediation plan in the next report.
5. Item #5 of the VRP Remediation Plan Form states that an up-to-date conceptual site model (CSM) must be included in each semi-annual status report. The November 2014, June 2015, and November 2015 reports did not include an updated CSM. EPD recognizes that not all items of the conceptual site model will need or will require updating, but the data collected during the recent well installations and sampling events should be included in an updated model. Please include all appropriate data and updates to the CSM during the next reporting period, and at a minimum, include new well boring log data in an updated cross-section figure.

Groundwater Monitoring

6. Passive Diffusion Bag (PDB) samplers were utilized during the October 2013, September 2014, and April 29, 2014 sampling events. Section 4.1.2 of the June 1, 2015 report also proposes the use of PDB samplers during upcoming groundwater sampling events. EPD recommends that the initial sample collected from a monitoring well be collected using the traditional low-flow sampling technique in order to obtain baseline analytical data. For wells that have not been sampled using the low-flow technique, please use the low-flow sampling method before initiating the use of PDB samplers. For wells where the low-flow technique has been utilized, the use of PDB sampling is approved, following the recommendations listed below:
 - In conjunction with PDB sampling, please collect samples from monitoring wells MW-49 - Zone B, MW-53 – Zone A, and MW-47 62S, 70D, and 36S using the low-flow sampling method in order to collect correlating data. The selected wells for correlation data report historically high concentrations, low concentrations, and non-detections of TCE during previous groundwater sampling events and should provide good comparative data. For supplementary correlation data, please collect groundwater samples from an additional three (3) wells utilizing both PDB and low-flow sampling.
 - No routine full-scale groundwater sampling events should be conducted using PDB sampling only, and at a minimum, a subset of wells should be selected for correlating both low-flow and PDB sampling methods. However, the use of PDBs only is approved for the proposed periodic groundwater sampling events along the property boundary.

- Please note PDB sampling should not be selected for wells used as delineation wells. Because periphery wells are used to define the boundary and any fluctuations in the plume, low-flow sampling will be required at these locations.
 - When applicable, PDB sampling cannot be used to show compliance and a series of low-flow sampling events will be required to demonstrate compliance requirements.
 - Please follow EPA Region 4 Groundwater Sampling Standard Operating Procedures (SESDPROC-301-R3) when conducting any type of groundwater sampling event.
7. MW-35, a western perimeter boundary well, was not sampled during the March 2014, March 2015, and October 2015 sampling events due to inaccessibility and/or puddled water. Because MW-35 is a downgradient boundary well, groundwater data from this well should be collected annually. EPD recommends using a pump to clear the water from the puddled location or making an alteration at the surface that would help make the well more accessible. If alterations at the surface or pumping to clear the puddled water are not possible, EPD recommends adjusting the schedule to sample the wells during a drier weather period so that groundwater sampling can occur at this location.
 8. In the June 2, 2014 Progress Report, an estimated groundwater elevation data was used at MW-45 for the potentiometric surface map, Figure No.3. The report explained that the elevation data at MW-45 was approximate and was based on topographic data. It is assumed that MW-45 was surveyed between the June and November 2014 reports due to more specific data included in the November 2014 and June 2015 reports. In the future, EPD recommends that unless a monitoring well has been accurately surveyed, elevation data be omitted from any potentiometric/groundwater flow analysis.
 9. In the June 2, 2014 Progress Report, the monitoring well sampling logs for MW-33 and MW-45 documented that the wells had pumped dry and that the pump had been set at the lowest setting; however, 26-gallons and 14.25-gallons were purged from the wells, respectively, and only one (1) series of groundwater parameters were recorded at each well location. In the November 2015 Progress Report, the same issue was noted for MW-33 but no groundwater parameters were recorded. EPD acknowledges wells can be pumped dry, but please include geochemical groundwater sampling parameters when purging and make all reasonable attempts to achieve geochemical stabilization following SESDPROC-301-R3, *Groundwater Sampling*. The parameters can be used to help identify any outliers observed in laboratory analysis along with helping to choose possible future remediation technologies. In addition, please include the total amount of gallons purged on the sampling log forms in future reports.
 10. Section 3.2.1.1 of the June 2015 report states that monitoring well clusters, MW-48 through MW-53, were installed in an array surrounding the suspected TCE release area and were developed until geochemical parameters stabilized, with the exception of turbidity. However, several of the development field forms in Appendix D did not include any geochemical parameter data and/or included minimal data relative to the total volume purged. In the future, please aim to continue well development until the column of water in the well is free of visible sediment, and the pH, temperature, turbidity, and specific conductivity have stabilized and log this data on appropriate field forms. Please make all reasonable attempts to achieve the aforementioned stabilization following SESDGUID-101-R0, *Design and Installation of Monitoring Wells*.

Figures

11. The figures included in the progress reports do not include the former ASTs and parts washer location where the assumed release(s) occurred. To help better pinpoint the suspected source area, please identify these items on appropriate future figures.
12. In the June 2015 and November 2015 Progress Report, Figure No.5 and Figure No.4, respectively, depict the groundwater sampling results for off-site wells and include a non-detect boundary line. The "Off-Property Non-detect Boundary" line includes monitoring well, MW-35, which was not sampled during the reporting periods. In addition, Figure No.8 in the June 2014 Progress Report also depicts a non-detect delineation boundary that includes MW-35; however, MW-35 had not been sampled since 2012 at the time of the report. Section 4.2 of the June 2014 Progress Report also states MW-35 was used to establish the west boundary of non-detection limits. EPD recognizes MW-35 has been non-detect during sampling events, but in the future please use the most current data in figures or note the date in which the well was sampled.

General

13. The November 2014 and June 2015 Progress Reports included indoor and outdoor vapor intrusion sampling data indicating a presence of TCE in the outdoor and indoor air on-site. EPD agrees that the vapor intrusion sampling concentrations reported warrant the installation and use of the sub-slab depressurization system, including the proposed portion of the building located to the east of the suspected TCE release area. EPD used the VISL calculator to determine that several concentrations exceeded the target indoor air concentration, target sub-slab and exterior soil gas concentration, and target groundwater concentrations. Due to the exceedences observed, the depressurization system should be activated as soon as possible. In addition, EPD recommends subsequent vapor intrusion sampling following the installation and operation of the fan system to ensure the TCE concentrations have decreased below the appropriate thresholds. Please include the details of the proposed expansion of the sub-slab depressurization system within the building to the east of the suspected TCE release in the upcoming report. In addition, vapor intrusion sampling and/or analysis may be required at the commercial buildings located in close proximity to the facility. Because free-phase TCE has been reported at the north end of the subject property, the vapor investigation may be required at locations down-gradient and up-gradient. The monitoring well proposed across the railroad tracks of the western edge of the subject property in Section 4.2.1 of the November 2015 Progress Report will likely provide data useful in the vapor intrusion investigation.
14. Section 3.5.2 of the May 2014 Progress Report discusses the removal of TCE residing in the vadose zone to less than 690 mg/kg, the value noted as the soil saturation limit (cSAT) and described as free product. Although that may provide for the removal of free product, the final remedial plan should also address the potential for direct soil exposure and the groundwater protection requirements for soil described in the Act.

The above comments must be addressed to EPD's satisfaction in order to demonstrate compliance with the provisions, purposes, standards and policies of the Act. EPD may, at its sole discretion, review and comment on documents submitted by Rheem Manufacturing Company. However, failure of EPD to respond to a submittal within any timeframe does not

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relieve Rheem Manufacturing Company from complying with the provisions, purposes, standards, and policies of the Act.

EPD anticipates receipt of the next semi-annual progress report no later than June 1, 2016. As specified in item 5.c. of the Voluntary Remediation Plan Application, please update the CSM to include vertical delineation, finalize the remediation plan, and provide a preliminary cost estimate for implementation of remediation and associated continuing actions. If you have any questions regarding this matter, please contact Mr. Peter Johnson, P.G. of the Response and Remediation Program at (404) 657-0490.

Sincerely,


Jason Metzger
Program Manager
Response and Remediation Program

cc: Justin Vickery, Environmental Planning Specialists, Inc. (via email)

File: VRP Rheem, File ID 213-0019