Georgia Department of Natural Resources
Environmental Protection Division-Land Protection Branch
2 Martin Luther King Jr., Dr., Suite 1054 East, Atlanta, Georgia 30334
(404) 657-8600; Fax (404) 657-0807
Judson H. Turner, Director

April 3, 2014

VIA E-MAIL AND REGULAR MAIL

COPY

VOPAK Terminal Savannah, Inc.
c/o Mr. Branden L. Jones
P.O. Box 7390
Savannah, Georgia 31418

Re: Third VIRP Semi-Annual Progress Report (dated February 25, 2013)
Fourth VIRP Semi-Annual Progress Report (dated August 30, 2013)
Fifth VIRP Semi-Annual Progress Report (dated February 28, 2014)
VOPAK Terminal Savannah, HSI Site No. 10464
Turner and Hart Street, Savannah, Chatham County, Georgia
Tax Parcel: 1-0618-01-003L

Dear Mr. Jones:

The Georgia Environmental Protection Division (EPD) has reviewed the Third, Fourth, and Fifth Voluntary Investigation Remediation Plan (VIRP) Semi-Annual Progress Reports (Reports) submitted pursuant to the Georgia Voluntary Remediation Program Act (the Act). EPD offers the following comments, which must be addressed in accordance with the Act:

1. EPD concurs with the conclusion of the Tidal Evaluation Report that groundwater in the area of the contaminant of concern (COC) plumes is minimally impacted in its elevation, flow direction, and temperature by tidal fluctuations within the Savannah River.

2. EPD agrees that Monitored Natural Attenuation (MNA) indicator parameters collected using data loggers during a one week period of 2012 (during the Tidal Evaluation study) indicated favorable conditions for reductive dechlorination. However, the observed concentrations of PCE and related compounds during the January 2014 sampling event suggest that the time required to lower concentrations to Type 1 through 4 risk reduction standards (RRS) will be greater than the time frame allotted in the VIRP. In the next semi-annual progress report, include trend diagrams that show the change in concentration of COCs over time for key source area and downgradient wells.

3. With the completion of the Down-hole Indicator Parameter Report and ten quarterly groundwater monitoring events, sufficient information has been collected to assess MNA. Therefore, beginning immediately, VOPAK Terminal Savannah, Inc. (VOPAK) may elect to shift from quarterly to semi-annual monitoring.

4. The approved VIRP checklist required that the Conceptual Site Model (CSM) and Remediation Plan be finalized by February 28, 2014. However, the Fifth VIRP Semi-Annual Progress Report does not provide a clear remedial plan or address all potential exposure pathways. Given that the VIRP schedule calls for submission of the Compliance Status Report by August 31, 2016, and the rate of contaminant attenuation is not likely to reduce COC concentrations to RRS by that date, VOPAK must consider active corrective action or certifying to Type 5 RRS. Type 5 RRS would include Uniform Environmental Covenants (UECs) to restrict groundwater use on affected properties and presenting evidence that contaminated groundwater discharging to the Savannah River will not cause a violation of Georgia In Stream Water Quality Standards. The CSM and remedial plan

should also address the potential for vapor intrusion in buildings in the vicinity of the plume (current and future).

5. EPD concurs with the conclusion that horizontal delineation is now complete on the downgradient (northern) side of the plume. If subsequent sampling of MW-37 on the GAF Material Property (southern side of plume) continues to show concentrations of contaminants of concern above the delineation standard, further delineation may be required in that area.

6. EPD concurs with the conclusion that vertical delineation is complete for the site.

7. EPD acknowledges attempts to locate and rehabilitate or abandon wells noted in our comment letter of November 20, 2012. Please complete abandonment of monitoring wells IW-1 and IW-2. Although it is preferable to remove the well screen and casing, the USEPA SESD guide, Design and Installation of Monitoring Wells (SESDGUID-101-R1), permits backfilling the well with bentonite or neat cement with the casing in place if it can not be removed. Please refer to that document and follow the method of abandonment with the casing in place for wells where it is not practicable to remove the casing because of danger to existing infrastructure.

8. When the low-flow purge method is used, the USEPA SESD standard operating procedure, Groundwater Sampling (SESDPROC-301-R3), requires that the water level in the well be monitored so that it can be confirmed that drawdown is "slight and stable" to insure that the water being produced from the well is from the formation. During the October 2013 and January 2014 sampling events, the water level during purging was not reported at regular intervals for wells LAW-PZ-8R, MW-16, MW-17R, IW-18, MW-18R, MW-19, MW-23, MW-24R, MW-25, MW-26R, MW-27, and MW-29. From the final water level reported for wells PAN-MW-9, MW-14, MW-17R, IW-18, MW-24R, MW-27, and MW-29, it is clear that greater drawdown occurred than is acceptable for the low-flow method. The final water level was not reported for MW-16. Further, the water level during purging was not recorded for many of the wells sampled during the October/November 2012, January 2013, April 2013, and July 2013 sampling events. In future sampling events, monitor and record the water level during purging and reduce pump speed so as to limit drawdown to less than 0.33 feet.

9. The well purging and sampling data form used in the October/November 2012, January 2013, and April 2013 sampling events did not include information on the location or length of the well screen. The low-flow purging method requires that the pump intake be placed at or just above the mid-point of the well screen. Always enter the depth to the top of the well screen and its length on the sampling form and place the pump intake accordingly.

10. During the January 2013 sampling event, well MW-18R was sampled before stabilization of pH was achieved. During the April 2013 sampling event, wells LAW-PZ-8R, MW-18R, MW-30, and MW-33 were sampled before stabilization of pH was achieved. During the July 2013 sampling event, well MW-17R, MW-26R, and MW-30 were sampled before stabilization of pH was achieved. SESDPOC-301-R3 requires continued purging until stabilization is achieved. In some of these cases, a lower pump rate might make stabilization easier to achieve.

VOPAK must address these comments 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 VOPAK. However, failure of EPD to respond to a submittal within any timeframe does not relieve VOPAK from complying with the provisions, purposes, standards and policies of the Act.

Please address the above comments in subsequent semi-annual progress reports. EPD anticipates receipt of the next report, which must include the final remediation plan and a cost estimate for the remedy and continuing actions, by August 31, 2014. If you have any questions, please contact Terry Allison at (404) 463-7513.

Sincerely,

Charles D. Williams

Charles D. Williams
Program Manager
Response and Remediation Program

c: Raj Mahadevaiah, P.E., EIC Environmental Services
H. Wilson Tillotson, P.E., Georgia Ports Authority

File: HSI 10464

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