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PLANTATION PIPE LINE
1000 WINDWARD CONCOURSE
SUITE 450
ALPHARETTA GA 30005

DEC 14 2017



Re: QAPP Revision, Monitoring Well Installation and Well Log Information, Receptor Survey, Plume Definition Plan, and Bedrock Plan Request
Plantation Pipe Line Lewis Drive Release, 112 Lewis Dr., Belton SC
Site #18693
Anderson County
Petroleum Pipe Line Release Reported December 8, 2014
Corrective Action Plan Addendum received October 13, 2017
Quality Assurance Project Plan: Revision 3 (5/24/17), received May 25, 2017
Second Quarter 2017 Monitoring Report received October 9, 2017
August 2017 Monthly Status Update received October 10, 2017
September 2017 Monthly Status Update received October 17, 2017
Groundwater Sampling Analytical Results received November 9, 2017
Telephone Conversation December 1, 2017 with Scott Powell (CH2M)

Dear Mr. Aycock,

The South Carolina Department of Health and Environmental Control (Department) has reviewed the referenced documents. Comments and requests organized by document are as follows:

Corrective Action Plan Addendum

The following items provided in the Corrective Action Plan Addendum (CAPA) are not in agreement with previous discussions and or comments. These comments must be addressed within 60 days of this correspondence.

1) Section 2.1 (Corrective Action Objectives)

The proposal to transition from free phase LNAPL recovery to in-situ destruction of LNAPL by the end of September 2017 (approximately 6 months after starting the sparging system) cannot be approved. As discussed and agreed upon during the August 23, 2017 conference call, free phase product recovery will need to continue on a weekly basis in the Browns Creek Protection Zone (BCPZ) and the Cupboard Creek Protection Zone (CCPZ).

2) Section 3.5 (Surface Water Monitoring)

The proposal to transition to monthly surface water sampling for the first 6 months of operations and quarterly the following year cannot be approved. The April 26, 2017 correspondence (Coleman to Aycock) states that evaluation of monitoring frequency must be discussed in the Annual Report and any

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changes to monitoring frequency will need to be evaluated and approved by the Department.

3) Section 3.9 (Reporting)

The proposal to provide quarterly reports in place of monthly reports starting in April 2018 cannot be approved at this time. As discussed and agreed upon during the August 23, 2017 conference call, monthly and quarterly reports will need to continue. Changes to reporting frequency can be proposed and discussed in the Annual Report which will be evaluated and approved by the Department.

4) Table 2 Revised Groundwater Monitoring Plan

Table 2 will need to be revised to include all newly installed groundwater monitoring wells.

Quality Assurance Project Plan (QAPP)

Please find the following comments and /or requests organized by topic. Please provide a revised QAPP within 60 days of this correspondence with all edits provided in a different color that is easily differentiated.

Groundwater Sampling

5) Section A5.1 (Purpose and Scope)

The Department concurs with Plantation Pipe Line's proposal to conduct sampling following EPA Guidance detailed in Low Flow (Minimal Drawdown) Groundwater Sampling Procedures (EPA 1996) and Region 4 Science and Eco System Support Division (SESD) Operating Procedure (OP) for Groundwater Sampling. However, Section A5.1 cites SESDPROC-301-R3 (EPA, 2013) whereas the most recent EPA OP for Groundwater Sampling is dated April 26, 2017. The Department suggests that Section A5.1 cite that the most recent EPA OP for Groundwater Sampling will be followed so that revisions are not required when documents are revised.

Please provide a frequency for which low flow sampling will be conducted for wells that are not sampled monthly. The EPA OP for Groundwater states that no-purge methods are predicated on the assumption that aquifer flow through the well maintains the water in the screened interval in a state equivalent to that in the aquifer. If site specific data has been collected to evaluate flow through the screened intervals, this information should be provided to determine the interval for which hydra sleeves (the proposed no purge method) will be conducted rather than low-flow sampling (the proposed method where purging is conducted). Further, Section A8 provides procedures for purging and sampling with bailers and pumps, which had not previously been discussed. A section that defines which purging and sampling method will be used and the circumstance for each should be provided to ensure that ground water samples collected are reflective of the groundwater transported through the subsurface under ambient flow conditions with minimal alterations from sampling procedures, minimizing variability.

6) Section A5.3.1 (Low-Flow Groundwater Sampling from Monitoring Wells SOP)

This section states "if water level is drawn down by more than 1 foot, or 5% of the static water column, purging should be conducted in accordance with SOP Groundwater Sampling from Monitoring Wells." This statement is contradictory to a previous statement that when conducting low-flow purging and sampling draw down should not exceed 0.3 feet. Additionally, considering that most of the wells are screened with a 10 feet to 15 feet screen, 1 foot is not equivalent to 5%. The Department suggests that drawdown during purging and sampling is limited to 0.3 feet to minimize volatilization. Also, please clarify which SOP is being referenced.

- 7) Section A5.3.1 (Low-Flow Groundwater Sampling from Monitoring Wells SOP)
A Decontamination of Personnel and Equipment SOP document is cited however, it could not be located in the document. Please provide decontamination procedures. Also, listing documents provided in Appendix A in the Table of Contents would be helpful.
- 8) Section A5.3.2 (Low-Flow Groundwater Sampling from Monitoring Wells SOP)
This section states inorganics, including metals, may be collected and preserved in filtered form as well as the unfiltered form. This section should state that unfiltered samples will be collected prior to filtered samples and should filtered samples be collected, an unfiltered sample will be collected and reports will clearly note if a sample is filtered or unfiltered. Groundwater samples should not be filtered as a standard practice, as discussed in the Region 4 EPA SOP for Groundwater which is cited in Section A5.1 (Purpose and Scope).
- 9) Section A5.5 (Low-Flow Groundwater Sampling from Monitoring Wells SOP)
This section states that drawdown in the well should be minimized as much as possible (preferably no more than 0.5-foot to 1 foot). Please see comment #6.
- 10) Section A8.1 (Groundwater Sampling SOP)
Please specify under what circumstances purging and sampling with bailers or pumps, not using low flow techniques, will be conducted, as further discussed in item #6. As stated in the EPA SOP for Groundwater Sampling, due to difficulties and limitations inherent in the use of bailers and pumps (volatilization regarding the contaminants at the referenced site), other sampling or purging means should be given preference.
- 11) Section A8.3.1 (Groundwater Sampling SOP)
Wells should be sampled as soon as possible upon recovery of adequate volume for sampling, as stated in the EPA OP. This section states that sampling may be conducted up to 6 hours after purging and should recharge be an issue, greater than 10 hours. This statement leads the reader to understand that documentation will be provided in the field log if the time lapse between purging and sampling is 10 hours or greater. Sample collection times should always be recorded on field data sheets. If sampling is not conducted immediately after purging, an explanation should be provided.
- 12) Section A8.3.1 (Groundwater Sampling SOP)
The EPA OP for Groundwater Sampling states that if bailers are used, a new nylon haul rope should be used. The Department suggests bailers not be left in any well.
- 13) Section A8.3.1 (Groundwater Sampling SOP)
If following the EPA OP for Groundwater, as stated, adequate purging is achieved when specific conductance varies no more than five percent.

Sampling Locations

- 14) A list of all existing wells, sumps, trench points, and surface water sampling locations will need to be included. This list appears to be omitted in error, as it is referenced in the response.

Surface Water Sampling

- 15) Surface water should be sampled for MTBE as MTBE is confirmed in groundwater.

August and September Monthly Status Reports

- 16) The September monthly status report states that groundwater monitoring wells MW-46, MW-47, and MW-49 were installed. Table 4, Well Construction Information will need to be updated in the next monthly status report to include all wells that have been installed.
- 17) As agreed to during the August 23, 2017 conference call and the September 12, 2017 correspondence (Coleman to Aycock), recovery of free phase petroleum (FPP) is to continue on a weekly basis in the BCPZ and the CCPZ. The September monthly status report documents that FPP was not recovered from RW-7 or RW-9 on September 15 or 21, 2017 when FPP levels were measured to be 0.93 feet (ft.) and 1.05 ft. respectively in RW-7 and 0.35 ft. and 0.42 ft. respectively in MW-9. Recovery of measureable FPP in the BCPZ and CCPZ will need to be conducted.
- 18) The September monthly status report notes an increase in one or more contaminant concentrations above the Risk Based Screening Levels (RBSLs) in groundwater monitoring wells MW-15B, and MW-17B that monitor the bedrock aquifer in the areas of the BCPZ and the CCPZ. **A strategy to address bedrock contamination in these areas will need to be provided within 60 days of this correspondence.**
- 19) It was agreed during the July 21, 2017 meeting and stated in the September 12, 2017 correspondence (Coleman to Aycock) that MW-33T would be sampled quarterly. However data collected from MW-33T has not been provided since May 10, 2017 data was collected. Please ensure MW-33T is monitored and reported, as agreed, going forward.
- 20) The Department understands that all wells approved to date have been installed. As discussed during the December 1, 2017, conference call with Scott Powell (CH2M), all geologic well logs and 1903 forms must be provided with the next monthly status report.

Second Quarter 2017 Monitoring Report

- 21) Based upon the data provided, the horizontal extent of the plume will need to be defined north and north-west of MW-30 as contaminant concentrations have been increasing since May 2017. **A plan to define the extent of contamination will need to be provided within 60 days of the date of this correspondence.**
- 22) The Department does not agree with the statement that “recovery features within the radius of influence of the BCPZ and CCPZ sparging curtains will not be evacuated unless data indicate that air sparging system is not adequately reducing product thickness”. As agreed upon during the August 23, 2017 Conference Call and the September 12, 2017 correspondence (Coleman to Aycock) recovery of free phase petroleum is to continue on a weekly basis in the BCPZ and the CCPZ. Measureable free phase petroleum product must be evacuated per the June 16, 2017 correspondence (Coleman to Aycock).
- 23) The Department understands that Plantation Pipe Line’s “interim goal for the project is to transition from free-phase LNAPL recovery to in situ destruction of LNAPL by the end of December 2017”. However, as stated in the June 16, 2017 correspondence (Coleman to Aycock), measureable free phase petroleum product must be evacuated. After further discussion during the August 23, 2017 conference call, documented in the September 12, 2017 correspondence (Coleman to Aycock) recovery of free phase petroleum is to continue on a weekly basis in the BCPZ and the CCPZ.

Groundwater Sampling Analytical Results (CHANDLER-AG-W)

- 24) The well located on the south side of Lewis Drive will need to be included in an updated receptor survey and included in routine sampling. **An updated receptor survey must be submitted within 60 days of the date on this correspondence.**
- 25) The Chandler-AG-W well will need to be added to routine quarterly monitoring for all parameters. Table 2 in the CAPA will need to be revised to include this well.

Shallow Bedrock Zone Biosparging Pilot Study Plan

- 26) During the August 23, 2017 conference call Plantation Pipe Line clarified that the intended purpose of the Shallow Bedrock Zone-Biosparging Pilot Study is meant to remediate the shallow aquifer rather than the bedrock aquifer while discussing the location of bedrock monitoring wells in the pilot study area. As this plan is intended to study the effects of sparging on the shallow contamination and sparging is already being conducted in the area, the pilot study can commence provided a comprehensive pilot study report is provided rather than a brief technical memorandum, as proposed.

Documents should continue to be provided in paper format and pdf via a disk with Site ID # 18693 and Plantation Pipe Line Lewis Drive Release noted in a prominent location. Should you have any questions, I can be reached at (803) 898-0628 or colemaj@dhec.sc.gov. Faxes can be sent to (803) 898-0673.

Sincerely,



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Technical File