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**Subject:** ACEPD Comments on TetraTech Beazer Pre-Final Design for ISGS in Process Area -Feb 13, 2015  
**Date:** Monday, March 16, 2015 4:19:00 PM  
**Attachments:** [Trends in DNAPL Recovery in Recovery Wells and TIPS.xlsx](#)

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Scott,

ACEPD has the following comments on the TetraTech Beazer Pre-Final Design for ISGS in Process Area -Feb 13, 2015.

- 1) In Section 2.4.2 DNAPL Recovery Former Process Area—The 5<sup>th</sup> Paragraph states that “TIP 400N/380E is located in the southwestern portion of the test area where ISGS injections were not performed. As expected, this TIP did not show a reduction in DNAPL recovery rates.” ACEPD believes that the reference to TIP 400N/380E is not correct and should be corrected to 380N/340E.
- 2) On page 22 of report, first paragraph, it is stated , “None of the cores contained visible bright purple non-reacted reagent indicating that the majority of the reagent was consumed”. ACEPD has the following question, “Could not the absence of purple color also indicate that the reagent had never reached the specific core area at all? “ What alternate evidence existed that indicated that reagent had reached the zone with no purple color?
- 3) Increase in DNAPL Recovery in Non-Target Area Wells and TIPS -- ACEPD performed an analysis of the DNAPL recovery volumes per recovery events over all the TIPS and Recovery Wells that we had access to data for from the monthly Beazer progress reports. The recovery data from some of the wells and TIPS that were in or near the treatment zone does indicate a significant drop in DNAPL recovery after the April 2014 ISGS treatment as indicated by TetraTech in the report. (Grey shaded lines in Attached Table). However, looking at data from January 2014 to January 2015, ACEPD noticed that for all the Upper Hawthorn DNAPL recovery Wells (HG-37SE, HG-38SE, HG-39SE, and HG40SE) not in the pilot test area there appeared to be a spike (increase) in the DNAPL volume recovered per sampling event in the month of April 2014 immediately after the ISGS injections in the pilot test area. (See the attached Table). This table shows the total DNAPL recovery per sampling event as some months had 1 , 2 or 3 sampling events. After April 2014, there followed a gradual decrease to more normal levels observed prior to the ISGS injections. A similar apparent trend can be seen for several TIPS located some distance southeast and southwest of the treatment area. These tips are also highlighted in the Table attached. Can an explanation be provided for this trend? One concern maybe that this data may indicate a dislocation of DNAPL into adjacent zones and wells with the very high pressures of the injections . ( Note: A comprehensive table supplied by Beazer showing the recovery amounts (total volume per month and per sampling event from all the wells and TIPS during all historical sampling events would be very helpful to obtain a better understanding of impact of treatment in the entire area as a baseline prior to the full scale implementation).

- 4) Short Term Performance Criteria-- While the DNAPL Recovery amounts from Well HG36SE and the some of the TIPS in the pilot treatment zone show reductions above 80% immediately after treatment was applied, the data indicate that there has been some increase in recovery in the months after treatment. This appears to require one or more retreatment ISGS injections in order the meet the performance criteria established in the Table 1 of Work Plan of February 2012. The short term performance criteria in Table 1 of the Workplan of February 2013 calls for “ little or no DNAPL flow to wells” in the 6 to 18 months post injection period. ACEPD expects that this criteria be strictly interpreted and result in no measureable amount of DNAPL continuing to be recovered in the recovery wells and TIPS in the treatment area after 6 to 18 month period.
- 5) Treatment of Residual DNAPL Zones and Confirmatory Borings-- ACEPD believes aggressive and thorough treatment will be required to assure that the ISGS remedy when it is applied in the Process area is as robust and thorough a remedy as the ISSS remedy to be implemented in the North Lagoon and Drip Track Areas in terms of prevention of leaching and migration of DNAPL into the Lower Hawthorn. This is especially important considering that the Process area appears to be more heavily impacted with DNAPL than previously assumed when the ISGS remedy was selected in the ROD as the remedy for this area. In that regard, ACEPD has similar concerns to those raised by GRU concerning the planned extent of treatment of residual DNAPL impacted zones in the full scale implementation workplan. Based on the figures and discussions in the workplan text, ACEPD is concerned that the current workplan may be intended to target only those zones where free product or heavy residual DNAPL was observed ( i.e. those zones where the DNAPL rating was 3.6 or more.) ACEPD believes that all zones of several feet thickness that have a DNAPL rating of 3.0 or more must be treated to assure zones that could be significant contributors to groundwater contamination are treated. This request is consistent with the remedial action objectives in the Workplan and with previous statements by USEPA and FDEP and discussions with Stakeholders that residually impacted zones will be treated. In addition, in order to better confirm the thoroughness of the treatment, more confirmatory borings will be needed than what appears to be proposed in the Workplan document of February 2012.

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