

Khatri, Paresh, Env. Health

From: PDKing0000@aol.com
Sent: Friday, August 13, 2010 3:14 PM
To: Khatri, Paresh, Env. Health
Subject: RO 209 VIP Service May 17, 2005 Work Plan Addendum

Hi Paresh,

As we discussed on the telephone on 8/12/10 this e-mail is written to address monitoring procedures for groundwater pumping and soil vapor extraction pilot test activities described in P&D's May 17, 2005 Remedial Investigation/Feasibility Study Work Plan (document 0047.W5).

Groundwater Extraction Feasibility Testing

Two additional groundwater observation wells, designated as OW5 and OW6 will be installed at locations approximately mid-distance between extraction wells EW1 and EW2, and EW2 and EW3, respectively, using procedures described in P&D's May 17, 2005 Remedial Investigation/Feasibility Study Work Plan.

To evaluate flow rates and drawdown, groundwater will be pumped individually from each of wells EW1, EW2 and EW3 for one day each, and then also from all three wells simultaneously for one day. While pumping from the extraction wells, water levels will be monitored in observation wells and unused extraction wells using pressure transducers. The pump test pumping rate will be determined based on drawdown and recharge rates observed during well development and initial well sampling. During the pump test, flow rates will be measured using a flow meter and a clock. Water pumped from the wells will be stored onsite in a tank pending characterization and proper disposal, or will be discharged to either the storm drain or sanitary sewer following receipt of appropriate permits.

At the conclusion of the pump tests on the individual wells, a water sample will be collected from each well using a clean disposable polypropylene bailer. The water samples will be transferred to 40-milliliter glass VOA vials and 1-liter amber glass bottles that will be sealed with Teflon-lined screw caps. The VOA vials will be overturned and tapped to ensure that no air bubbles are present. The VOA vials and bottles will be transferred to a cooler with ice, pending delivery to the laboratory. Chain of custody documentation will accompany the samples to the laboratory.

Soil Vapor Extraction Feasibility Testing

All necessary notifications and permits will be obtained from the BAAQMD prior to performing a pilot test. A trailer-mounted liquid ring blower capable of generating 28 inches of Mercury vacuum and a flow rate of 400 cubic feet per minute will be used to evaluate vapor extraction feasibility at the site. Granular activated carbon will be used as the air pollution control device.

Vacuum monitoring ports will be installed at the top of each of wells used for evaluating the fine-grained materials (F1 through F4) and each of the wells used for evaluating the coarse-grained materials (C1 through C4). A step test with four different vacuums will be performed at each of wells F1 and C1. Each step will be performed for one hour. During each step, the following information and associated time of measurement will be recorded.

- Air flow rate at the extracting well. Air flow rates will be measured using a hot wire anemometer.
- Air temperature. Ambient air temperature and air temperature at the blower inlet will be monitored at the beginning and end of each step and at approximately one half hour intervals during each step.

- PID values at the extracting well. A field PID will be used to evaluate organic vapor concentrations at the beginning of each step and at approximate one half hour intervals during each step.
- Vacuum at all wells. Vacuum will be measured at approximately 15 minute intervals using magnehelic gages and verified with a monometer for all wells where vapor extraction is not taking place.
- Vacuum at the blower. The vacuum at the blower will recorded at the beginning and end of each step using a vacuum gage.

Following completion of each vacuum step test, the blower will continue to operate at the final step vacuum until a different well is used for vapor extraction. One air sample will be collected from a sampling port located at the inlet to the blower at the end of the use of each well as the well used for vapor extraction using 1-liter Summa canisters. Atmospheric barometric pressure at the site will be obtained from a local weather station for the time period of the pilot test. Once the vapor extraction pilot test is completed, the blower will be shut off and vacuum will be monitored at all of the wells to determine the rate of vacuum decay.

Arrange for Sample Analysis

All of the soil gas samples will be analyzed at Air Toxics Limited of Folsom California for TPH-G using EPA Method TO-3 and for the VOCs benzene, toluene, ethylbenzene, and xylenes by EPA Method TO-15.

All of the groundwater samples will be analyzed at McCampbell Analytical, Inc (McCampbell) of Pittsburg, California for TPH Multi-Range (TPH as Gasoline, TPH as Stoddard solvent, TPH as Diesel, and TPH as Bunker Oil) using Modified EPA Method 8015, and for BTEX and COC HVOCs using EPA Method 8260. McCampbell is a State-accredited hazardous waste testing laboratory.

Report Preparation

Upon receipt of the laboratory analytical results, a report will be prepared. The report will document well construction, development and sampling procedures, in addition to the feasibility test procedures. The report will include a site plan showing the drilling locations, boring logs, well construction as-built diagrams, copies of field data sheets generated during the pilot test, copies of the laboratory reports, tables summarizing the sample results, recommendations based on the sample results, and the stamp of a professional geologist. The report will also include graphs showing weather conditions (temperature, wind direction, wind speed, barometric pressure, and precipitation) for a weather station located in the site vicinity for the sample collection date and the two weeks preceding the feasibility test.

Please do not hesitate to contact me if you have any questions. Thank you!

Best regards,

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