



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

Memorandum

TO: Kelsey Helton, Professional Geologist II
Waste Site Cleanup, Waste Cleanup Program, DWM


THROUGH: Brian Dougherty, Administrator
Office of District & Business Support, DWM


FROM: Gladys A. Liehr, Environmental Consultant
Office of District & Business Support, DWM


Michael J. Bland, Professional Geologist II
Office of District & Business Support, DWM

SUBJECT: Cabot Carbon/Koppers Superfund Site
Gainesville, Alachua County, FL
Final Cabot Carbon Sampling Investigation Report
WC-SF 000000007

DATE: June 10, 2016

6/16/2016
X 

BJD
Signed by: Dougherty, B
6/16/2016
X 

MEW
Signed by: Liehr, G
6/16/2016
X 

JPS
Signed by: Bland, M

The Office of District and Business Support (ODBS) has reviewed the *Final Report for Cabot Carbon Sampling Investigation* dated May, 2016. The report was prepared by USEPA (U.S. Environmental Protection Agency) Region 4 Science and Ecosystem Support Division (SESD). Groundwater and soil sampling were requested by the Remedial Project Manager (RPM), Scott Miller. Analytical results were compared to FDEP Groundwater Cleanup Target Levels (GCTLs), FDEP Soil Leachability Cleanup Target Levels (SCTLs), and/or to the Cabot Carbon/Koppers 1990 *Record of Decision* (ROD) cleanup criteria. Groundwater samples were analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), diesel range organics, gasoline range organics, and nutrients. Soil samples were analyzed for VOC and SVOC.

ODBS makes the following observations and recommendations:

(1) Groundwater:

Groundwater samples from twelve monitoring wells contained VOCs; from which seven showed components (e.g. Benzene, Acetone, Xylene, Toluene) that exceeded Florida GCTLs.

Groundwater samples from 11 monitoring wells contained SVOCs; from which ten showed components (e.g. Acenaphthene, Fluorene, Naphthalene, Phenanthrene) that exceeded 1990 ROD cleanup criteria and/or Florida GCTLs.

- a. Tables 5 and 7 list information on FDEP GCTLs and/or 1990 ROD criteria for VOCs and SVOCs. FDEP has further calculated CTLs for the following components to use as screening criteria:

Camphor = 230 µg/L
Cymene = 1000 µg/L.

The ACTLs for both components were calculated following Chapter 62-777, F.A.C. procedures that were publicly promulgated.

Further, Chapter 62-777, F.A.C., lists a GCTL of 20 µg/L for total Xylenes that should be used for screening. We recognize that EPA does not include the FDEP cleanup target levels based upon organoleptic criteria, however, the State of Florida is required by statute to address organoleptic criteria as an essential part of water supply restoration. If the total Xylenes concentration remains above the Florida organoleptic-based GCTLs, the State of Florida reserves the right to independently pursue further cleanup to these numbers.

- b. Groundwater sampling was conducted in accordance with SESD's Field Branches Management and Quality System Procedures: SESDPROC-301-R3. The SOP states, that an adequate purge is achieved when the pH and specific conductance of the groundwater have stabilized and the turbidity has either stabilized or is below 10 Nephelometric Turbidity Units (NTUs) (twice the Primary Drinking Water Standard of 5 NTUs). It's been defined that stabilization occurs when, for at least three consecutive measurements, the pH remains constant within 0.1 Standard Unit (SU) and specific conductance varies no more than approximately 5 percent. Other parameters, such as dissolved oxygen (DO), may also be used as a purge adequacy parameter. Normal goals for DO are 0.2 mg/L or 10% saturation, whichever is greater. If, after three well volumes have been removed, the chemical parameters have not stabilized according to the above criteria, additional well volumes (up to five well volumes), should be removed.
 - Although, following FDEP SOP guidance is preferred, ODBS accepts that the field activities were conducted using USEPA Standard Operation Procedure guidelines.

- For review purposes, field data logs should be consistent and include information about the water column and purge volume. When assessing the field data logs, it shows that EPA SOP criteria have not always been met. Based on the purge duration and cumulative volume, we presume that three well volumes have been removed when chemical parameters have not been stabilized. Please clarify.
 - ODBS presumes a mix up in the field log entry for CCTW02-0316. The values noted in the ORP and DO section seem to be misplaced. Please clarify.
- c. Temporary wells were installed with a Geoprobe® 6620 direct push rig using SP16 groundwater samplers with disposable PVC screens.
- Please provide well installation procedure logs, well completion reports, information on well designs and water sampling logs for these wells.
- d. High levels of (3- and/or 4-)Methylphenol (28,000 µg/l), 2,4-Dimethylphenol (9,000 µg/l), 2-Methylphenol (8,700 µg/l) and Phenol (8,400 µg/l) were detected in the groundwater samples collected from CCTW11S located at the northeast lagoon area of the site. High levels of contamination have also been detected at ITW-13 and ITW-14 which are located south of CCTW11S and also within the northeast lagoon area. In order to determine if this contamination has migrated deeper into the Hawthorn Group (HG), ODBS recommends that an upper HG and a lower HG monitoring well cluster be installed in approximately the same location that CCTW11S was installed. ODBS also recommends that an additional surficial monitoring well be installed north of CCTW11S to determine the northern extent of the contamination that was detected at CCTW11S.

(2) Soil:

Results of the VOC analyses of the soil samples collected from CCSS05 showed an exceedance of Florida's SCTL Leachability criteria for 1,2-Dibromoethane and Benzene. Results of the SVOC analyses of the soil samples collected from CCSS01, CCSS03, CCSS05 and CCSS09 showed the following exceedances of Florida's SCTL Leachability criteria; CCSS01 for (3- and/or 4-)Methylphenol, 2,4-Dimethylphenol, 2-Methylphenol and Naphthalene, CCSS03 for (3- and/or 4-)Methylphenol, 2,4-Dimethylphenol and 2-Methylphenol, CCSS05 for (3- and/or 4-)Methylphenol, 1,1-Biphenyl, 1-Methylnaphthalene, 2,4-Dimethylphenol, 2-Methylphenol and Naphthalene, CCSS09 for (3- and/or 4-)Methylphenol, 1,1-Biphenyl, 2-Methylphenol, Acetophenone, Benzaldehyde, Benzo(a)anthracene, Benzo(b)fluoranthene, Carbazole, Dibenz(a,h)anthracene, Naphthalene and Phenol.

- a. Information about soil sampling procedures were not provided in the report and should be included. When odors were detected in soil samples collected at the step out soil borings, such as at CCSS03W, additional soil borings should have been

conducted further out from that step out soil boring to fully delineate the soil contamination.

- b. It was stated that soil intervals varied between 0-3, 0-9, 0-12, 0-16, 0-48, 6-12, 12-21, 21-28 inches below ground surface. Site Assessments should be evaluated following FDEP 62-780.600, F.A.C. Site Assessment guidelines. Therefore, the sampling intervals shall be as follows: land surface to six inches, six inches to two feet, and two-foot intervals thereafter to the extent necessary to define the soil contamination.
- c. Table 10 and 11 show the results for VOC and SVOC in soil. It is explained that the FDEP CTL/ROD values differ between FDEP GWCTLs and 1990 ROD levels. We presume that the explanation was for Florida SCTL for Leachability and not FDEP's GCTLs. Therefore, the tables should show FDEP SCTL rather than FDEP GCTL.
- d. Table 11 highlights results that exceed the clean up criteria by using following symbol: '^'. Please clarify the meaning of the symbol: '^'.
- e. Table 13 provides information on component concentrations in "surface soil" of split samples. For clarification, please define the interval range for surface soil. In addition, see comment 2a.
- f. A discussion concerning the soil contamination detected at CCSS09 should be provided. Additional soil sampling in this area is recommended to determine the extent of the contamination. Depending on the results of the additional soil sampling, groundwater samples from this area may be necessary.

(3) Overall goal of groundwater and soil sampling effort:

The overall goal of the groundwater and soil sampling effort is to evaluate the type of constituents currently present and their concentrations; to evaluate the current geochemical conditions in the aquifer zones; to determine if those conditions favor natural attenuation, and if natural attenuation is occurring now. The information provided in this report helps assess the current delineation of the different constituents. When comparing results of groundwater samples from the current sampling event with data from 2014-2015 (provided in the *2015 Technical Memorandum: Interim Report on Remedial Investigation Results and Focused Feasibility Study*), a slight decrease in VOC and SVOC concentrations at the permanent wells (e.g. HG37) is visible. When comparing results of groundwater collected from the Surficial Aquifer (SA) at wells from nearby locations (e.g. WS35 [2015] vs. CCTW04S [2016]), increases are notable for some constituents (e.g. Naphthalene [200µg/L to 260µg/L]).

Soil sample CCSS05 shows (3-and/or 4) Methylphenol, 1- Methyl-naphthalene, 1,1-Biphenyl, 2,4-Deimethylphenol, and 2-Methylphenol concentrations above the FDEP SCTL. The adjacent groundwater samples collected at CTW01 and CTW02 show that some of those constituents exceed FDEP's GCTLs as well. ODBS presumes that the constituents found in soil at CCSS05 are leaching into the Surficial Aquifer.

In conclusion, the data collected do not show any significant decreasing trend or that the contamination is at a steady-state. Some data lead to the presumption that soil contaminants are still leaching into the groundwater. Therefore, at the current stage, it is not possible to assess if natural attenuation is occurring or is favored at the Site. Further sampling and delineation is needed for a more distinct evaluation.

(4) General:

Figures 1 and 2 do not have scales. All maps should be to scale and have the scale shown on the map.

If you have any questions, please contact either Gladys Liehr at (850) 245-8779 or gladys.liehr@dep.state.fl.us or Michael Bland at (850) 245-8912 or mike.bland@dep.state.fl.us.