Environment

Prepared for:
CNA Holdings, Inc.

Prepared by:
AECOM
Atlanta, GA
60135440

Auriga Spartanburg
Off-Site Direct Push Investigation
January 2012

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Prepared By Bryon Dahlgren
Project Manager

Everett W. Glover, Jr.

Reviewed By Everett W. Glover, Jr. PE
Program Director

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1.0 Introduction and Summary of Work Completed

This report provides a summary of the off-site investigation activities, the results of the work and preliminary recommendations for additional activity.

A work plan for off-site investigation near the Auriga Spartanburg facility was submitted to South Carolina Department of Health and Environmental Control (DHEC) on September 23, 2011. The activities described in the plan were completed between October 10 and October 17, 2011. AECOM collected groundwater samples between October 10 and October 15. Surface water sample collection and site restoration was completed on October 17.

The work area is presented in Figure 1. The sample collection locations are also presented on Figure 1. Four direct push (DPT) locations were placed along the entrance driveway and near the front of the property facing the interstate. Two additional direct push locations were placed on each side of the facility parking lot. Lastly, two additional direct push locations were placed in the wooded area between the driveway and the creek. Surface water samples were collected at seven locations along the creek on the far side of the property.

As described in the work plan, groundwater samples were collected at two depths from each direct push location whenever possible. One sample was collected when groundwater was first encountered. When the DPT could advance at least ten feet beyond the first sample depth, a second sample was collected at refusal depth. Two samples were collected from all DPT locations with the exception of locations OSS-GW-1 and OSS-GW-2.

All groundwater and surface water samples were analyzed for volatile organics (including chloroform) as well as for 1,4-dioxane.

2.0 Results

A summary of analytical results is presented in Table 1. Only those parameters detected in at least one sample are included in Table 1. A complete copy of the analytical data report is included in Appendix A.

Only three compounds were detected in the samples. These compounds are acetone, 1,4-dioxane, and chloroform. The detections of acetone are several orders of magnitude below standards and are suspected to be laboratory contamination. 1,4-Dioxane was detected in one isolated groundwater sample and was also detected in surface water samples at concentrations ranging from 0.00261 to 0.00304 milligrams per liter (mg/L).

Chloroform results are presented on Figures 2 and 3. Based on historic investigations and observations of rock in the area, the refusal of the direct push operations was estimated to approximate the depth to rock for the area. Data collected above rock are presented in Figure 2. Data collected at the estimated bedrock depth are presented in Figure 3. Surface water data are included with the "above rock" data on Figure 2.

In groundwater above rock the detections of chloroform are limited to the central wooded area. Detections exceeding the Maximum Concentration Limit (MCL) are noted at OSS-GW4 and OSS-GW5. Concentrations at downgradient locations to the south and east at locations OSS-GW6 and OSS-GW7 were below the MCL. Chloroform was not detected at OSS-GW3 located to the west as well as at location OSS-GW8 located furthest to the east.

Detections of chloroform at bedrock included a larger area and higher concentrations. The highest concentrations were near the interstate and along the facility driveway at locations OSS-GW3 and OSS-GW4. The highest result was 2.14 milligrams per liter (mg/L) at location OSS-GW3. This location is interpreted to be approximate to the center line of the plume based on historic results from on site. This interpretation is supported by the declining concentrations noted to both the east and west of this location. The concentration of chloroform at approximate rock declined to below the MCL at location OSS-GW8 to the east (0.0236 mg/L). The concentration was also non-detect to the south at location OSS-GW6 (<0.005 mg/L). The concentration of chloroform to the west declines with distance from OSS-GW3, but remains above the MCL at OSS-GW1 (0.858 mg/L).

3.0 Plan Forward

Additional investigation and remediation will be planned for the off-site area. The details and schedule will depend on conversations and agreements with the property owners. Therefore specific details are not available at this time. Detailed recommendations will be submitted to DHEC for approval prior to implementation.

We plan to install a series of well pairs in this area. The well pairs will include bedrock and saprolite wells. The locations of the wells will be recommended to complete delineation of the existing plume and provide monitoring locations for future activities. We may potentially recommend additional direct push locations to help define well or remediation locations.

We plan to implement remediation of the chloroform in the area once we complete delineation and characterization. The highest concentration noted in the area is 2.14 mg/L. Previous efforts on site have effectively treated concentrations exceeding 15 mg/L, so we are optimistic about our ability to treat effectively with injection of sodium lactate as was used previously on site.

Details for additional investigation plans or an update on our communications will be provided to you no later than March 31, 2012.

Tables

Figures

Appendix A

Analytical Data