February 24, 2011 Project No. 053-7466-100

Mr. Balaji Angle
B&C Gas Mini Mart
35584 Conovan Lane
Fremont, CA 94563

RE: RESPONSE TO ALAMEDA COUNTY ENVIRONMENTAL HEALTH REQUEST FOR WORK PLAN FOR A SVE PILOT TEST AND DRAFT FACT SHEET FOR PUBLIC NOTIFICATION OF CORRECTIVE ACTION PLAN, FORMER DESERT PETROLEUM, B&C GAS MINI MART, 2008 FIRST STREET, LIVERMORE, CALIFORNIA (STATION ID RO 0000278)

Dear Mr. Angle:

This letter was prepared in response to the Alameda County Environmental Health (ACEH) request (by letter dated January 13, 2011) for a Work Plan for a soil vapor extraction (SVE) Pilot Test and Draft Fact Sheet for Public Notification of Corrective Action Plan for the former Desert Petroleum, B&C Gas Mini Mart, 2008 First Street, Livermore, California. This letter provides information that the use of SVE at the site is not a viable option at this time and transmits an updated Fact Sheet for the current site corrective action, ozone sparging.

In the *Corrective Action Plan, Valley Gas (Formerly B&C MiniMart) 2008 1st Street, Livermore, California*, dated January 21, 2009, Golder recommended the continued use of the ozone sparging system to treat the saturated zone in conjunction with a proposed SVE system to treat the unsaturated zone. The SVE recommendation was made at a time of low groundwater levels that resulted from multiple low rainfall years. However, the past two rainfall years have resulted in higher groundwater levels that have saturated the on-site source zone. The current depth to groundwater on site (measured February 16, 2011) is 30 to 33 feet, below ground surface (bgs), which is above the source zone (36 to 48 feet, bgs). Therefore, SVE is not a valid option, now that the source zone is below groundwater. If the groundwater levels drop in the future, then the SVE option will be re-evaluated. The ozone sparging system will be operated as the primary corrective action and source zone remediation.

A Draft Fact Sheet for Public Notification was prepared for the site in Fall 2006 as part of the City of Livermore downtown redevelopment. An updated version of the Draft Fact Sheet is attached to this letter.

Groundwater monitoring at the site was performed on February 17, 2011. A first quarter 2011 monitoring report will be prepared for submittal to ACEH by March 30, 2011. If you have any questions, please contact me at 408-220-9223.

Sincerely,

GOLDER ASSOCIATES INC.

Kris H. Johnson

Kris H. Johnson, C.E.G. 1763
Senior Engineering Geologist

Attachments: Draft Fact Sheet
c: Jerry Wickham, ACEH, 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

Reply to ACEH 1-13-11 Letter

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FACT SHEET
Status of Environmental Investigation and Cleanup
B&C Gas Mini Mart, Former Desert Petroleum
2008 First Street
Livermore, California

Introduction

This fact sheet has been prepared to inform the community about soil and groundwater cleanup activities at the B&C Gas Mini Mart [Valley Gas] (site) located at 2008 1st Street, Livermore, California. It describes site background, past work to investigate and clean up site contamination, next steps, the County's oversight process for the site, and how you can obtain more information. Alameda County Environmental Health Services is the lead regulatory agency overseeing the investigation and clean-up activities.

Site Description

The site is located at 2008 First Street in downtown Livermore (Figure 1). The site is an active gasoline station and mini market and is currently operating under the name: Valley Gas. . From at least 1988 until 1994, Desert Petroleum (DP) owned and operated the site. In January 1994, DP sold the site to the current owner. Petroleum hydrocarbons released from underground storage tanks at the site have entered groundwater and moved northwest beneath adjacent properties. Mitigation measures are underway to reduce the potential risk to human health.

Site Investigations

The soil and groundwater beneath the site are impacted with petroleum hydrocarbons associated with leaking underground gasoline storage tanks. The releases occurred at the site over multiple years with documented releases in 1994 and 1995. At that time, groundwater levels were near historic lows of approximately 60 feet below ground surface. Groundwater rose approximately 30 to 35 feet over the next three to five years smearing the gasoline across the soil within this depth range (30 to 60 feet). The gasoline released from the site included the following components: benzene, toluene, ethylbenzene, and total xylenes (BTEX); and fuel additives such as methyl tert-butyl ether (MTBE), an oxygenate added to gasoline to reduce air pollution.

By the late 1990's, it was determined that the MTBE component of the dissolved gasoline plume had extended approximately 1,500 feet downgradient of the site. The BTEX components of the plume were generally limited to about 600 to 800 feet downgradient of the site. The difference in the extents of the plumes is expected due to the differences in water solubility and degradation rates between MTBE and the BTEX components. The primary location of the majority of the contamination was determined to be between approximately 30 to 45 feet below ground surface, below the current surface of the groundwater table, and was estimated to extend about 150 to 200 feet west of the site.

Investigations have been conducted on and off-site to assess the magnitude and extent of the gasoline and gasoline components released from the underground storage tanks at the site and to assess the potential risks posed to human health and the environment. Beginning with the initial assessment in September 1988, several soil borings, fifteen groundwater monitoring wells, and four multi-level groundwater monitoring wells have been installed. In 2006 a source zone investigation was performed that included the installation of 24 borings and two soil vapor monitoring wells. The information from the source zone investigation was used to identify the extent of the source zone, assess risks to human health from the intrusion of gasoline vapors, and evaluate remediation options.

Cleanup activities performed have included the removal of leaking underground storage tanks, hydraulic lifts, 725 cubic yards of contaminated soil, and the installation of a new double-walled underground fueling system with automated leak detection. Gasoline found floating on water in an onsite groundwater monitoring well was also removed.

The following summarizes important findings:

- The northwest extent of the dissolved contaminant plume is generally defined and shown not to have reached municipal water supply wells.
- At approximately 70 feet below ground surface a generally impervious layer of clay exists that protects the underlying drinking water aquifer from the gasoline and gasoline components released at the site.
- Concentrations of MTBE and BTEX have been declining throughout the plume since 1995. Declining concentrations appear to be due primarily to natural attenuation.
- The source zone area is estimated to be approximately 250 feet long, extending from the northwest portion of the site toward the northwest, beneath South L Street and the Groth Brothers showroom and property. The source zone is estimated to be approximately 80 to 120 feet wide and from 36 to 48 feet below ground surface.
- Soil vapor sampling results indicate that soil vapor at 5 feet below ground surface does not exceed state of California regulatory, health-based concentration thresholds, indicating that there is no current threat to human health.

Next Steps

Remedial measures are underway to mitigate the smeared gasoline and reduce dissolved groundwater concentrations in the source zone.

The current and proposed corrective action at the site is in-situ chemical oxidation (ISCO) with ozone to remove the smeared gasoline and reduce dissolved groundwater concentrations in the source zone. The term “in-situ” refers to the treatment of soil and groundwater in-place without soil excavation and/or groundwater pumping. Ozone is delivered to the subsurface through wells installed beneath the water table in the source zone (between 36 and 48 feet below ground surface). Ozone is a powerful oxidizer and breaks down gasoline and its components to harmless carbon dioxide and water. After the oxidizer is spent, natural processes usually return the groundwater to its previous state. Groundwater monitoring will be performed during the corrective action to assess impacts to groundwater quality as well as the performance of the remediation. Post-remediation groundwater monitoring will also be performed to confirm that groundwater quality returns to an acceptable state.

For Further Information:

If you have questions or comments about this case, you may contact the Alameda County Environmental Health Department project manager Jerry Wickham at (510) 567-6791 (E-mail jerry.wickham@acgov.org).

You may also access site information online at the State GeoTracker web site: http://geotracker.waterboards.ca.gov/. Under “Tools”, click on “Advanced Search”. Under “Case ID/Global ID”, type T0600100930 and click on “Search”.
Or the County web site: http://ehgis.acgov.org/dehpublic/dehpublic.jsp