RECEIVED

8:48 am, Oct 05, 2010

Alameda County
Environmental Health

CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA • SUITE 5301 • OAKLAND, CALIFORNIA 94612-2034

Public Works Agency
Environmental Services Divison

FAX (510) 238-7286
TDD (510) 238-3254

October 4, 2010

Mr. Paresh Khatri
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: Proposed Removal of Remediation System from the City of Oakland Municipal Services Center, 7101 Edgewater Drive, Oakland, California

Reference: ACEH Fuel Leak Case No. RO0000293, GeoTracker Global ID T0600100375

Dear Mr. Khatri:

The remediation system operated at the City of Oakland Municipal Services Center (MSC) site has successfully achieved its design goal – complete removal of separate phase hydrocarbons (SPH) from Areas C and D, where SPH was identified in a comprehensive site investigation conducted in December 2000 by Baseline Environmental Consulting (Baseline, January 2001). Four areas with SPH were characterized through the investigation, which were labeled as Plume A, B, C, and D, respectively (see attached Figure). Majority of the identified SPH existed in Plume D area. The removal of SPH at Plumes A and B were achieved by hydrogen peroxide injections. The remediation system was installed following the submittal and approval of the following reports:

Evaluation of Free-Product Removal Alternatives (URS Corporation, June 2001),
TPE Pilot Test and Feasibility Report (Cambria Environmental Technology, Inc., August 2002),
Dual-Phase Extraction Work Plan (URS Corporation, October 2004).

The remediation system included seven pneumatic product skimmers (all installed in Plume D area wells), dual-phase vacuum extraction (liquid and soil vapor) from 13 wells within Plume D area and from six wells within Plume C area, treatment of the extracted soil vapor by a thermal oxidizer, and treatment of the extracted groundwater through an oil/water separator and three 2,000-pounds of activated carbon vessels connected in series. Details of the remediation system are documented in a *Startup Report* (OTG EnviroEngineering Solutions, Inc., June 2006). The remediation system

commenced operation on May 22, 2006 and was shutdown on December 23, 2009 for plume observations. Remediation system operation and discharge reports were submitted quarterly.

As summarized in the *Self- Monitoring Report – Fourth Quarter & Year 2009* (OTG & LFR, January 2010), approximately 62,000 pounds of hydrocarbons (or about 9,000 gallons) was removed from Plumes C and D areas from May 22, 2006 through December 23, 2009. Of that amount removed, 94.4% was through soil vapor removal, 4.3% (380 gallons) was through free product recovery by the pneumatic pumps, and 1.3% was through groundwater removal.

While the active extraction remediation was applied in Plumes C and D areas, hydrogen peroxide (in 7 to 15% concentrations) was injected monthly into remediation wells within Plume A and B areas. Hydrogen peroxide addition was initially recommended for Plume A in the *Evaluation of Free-Product Removal Alternatives* (URS Corporation, June 2001) and was expanded to Plume B. The hydrogen peroxide addition was found equally effective in the destruction and removal of hydrocarbons as the remediation system operated in Plume C and D areas.

Since the remediation system was turn off in December 2009, all wells within Plumes A through D areas have been checked monthly and floating product (SPH) has not been observed in any of the wells. The semi-annual groundwater monitoring conducted in April 2010 also confirmed that the dissolved-phase hydrocarbon concentration continues the overall decreasing trend. The next semi-annual groundwater monitoring will occur in October 2010.

Based on the progress of the remediation and the post-remediation observations discussed above, the City concluded that the source (free-phase product or SPH) within Plumes A through D areas has been successfully eliminated. The City plans to remove all above-ground remediation equipment installed for the remediation of Plumes C and D by December 2010. All remediation wells will remain for observations and hydrogen peroxide addition. To enhance natural attenuation of the dissolved phase hydrocarbons, the City will continue monthly hydrogen peroxide addition (in 7 to 15% concentrations) to all remediation wells in Plumes A through D areas through December 2011.

The City seeks your concurrence for the removal of all above-groundwater remediation equipment operated at the MSC site. If you have questions or need further information, please contact me at (510) 238-6361.

Sincerely,

Gopal Nair
Environmental Specialist