McLaren

Listen ONLY

Considering data from entire site. You can delineate locations for your own purposes

September 14, 1989

Mr. Lowell Miller
Alameda County Health Care
Services Agency
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

Dear Mr. Miller:

RESULTS OF HYDROGEOLOGIC INVESTIGATION AND PROPOSAL TO FURTHER INVESTIGATE THE PRESENCE OF FREE PRODUCT IN GROUNDWATER AT THE MARKETPLACE SITE IN EMERYVILLE, CALIFORNIA

The results of the hydrogeologic investigation at the Marketplace site in Emeryville, California are included in the attached report. The investigation concluded that metal levels are not substantially elevated in groundwater. Since floating product was detected in Well W-5, a further investigation is proposed to determine the extent of free product at the site. At this time, the free product appears to be localized in occurrence and of a different nature than the tarry asphaltic substance which has previously been detected in soils at the site.

The proposed additional work to further investigate the presence of free product at the site is detailed in the attached letter. The main elements of the additional work include:

- The installation of an upgradient and downgradient well to determine the extent of free product occurrence near Well 5; and
- Sampling new and existing wells and analysis for total petroleum hydrocarbons as diesel (TPH/D) and benzene, toluene, xylene, and ethyl benzene (BTXE).

980 Atlantic Avenue, Suite 100, Alameda, CA 94501 415.521.5200 FAX 415.521.1547

Should you have any questions regarding the results of the hydrogeologic investigation or the proposed additional work, please call Susan Gahry at 521-5200.

Very truly yours,

Del Christenson, REA
Principal Scientist

Susan Gahry
Supervising Engineer

Attachments

cc: Mr. Walter Kaczmarek (W/O Attachments)
Mr. Robert Wyatt (W/O Attachments)

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TOG
chlorinated AC
PNA's
TPH
BTEX

September 12, 1989

Mr. Walter Kaczmarek
The Martin Group
6475 Christie Avenue, Suite 500
Emeryville, CA 94608

PROPOSAL TO FURTHER INVESTIGATE THE PRESENCE OF FREE PRODUCT IN GROUNDWATER AT THE MARKETPLACE SITE IN EMERYVILLE, CALIFORNIA

Dear Mr. Kaczmarek:

This letter presents a proposal to further investigate the presence of free product in groundwater at the Marketplace site in Emeryville, California. During recent groundwater investigations which included the installation of three new monitoring wells, it was determined that free product exists in Well W-5. Results of the recent groundwater investigation and a summary of the site background are presented in McLaren's report entitled "Results of the Hydrogeologic Investigation Conducted at the Marketplace/Nielsen Properties", dated September 12, 1989. At this time, the free product appears to be localized in occurrence and of a different nature than the tarry asphaltic substance which has been detected in soils at the site.

PROPOSED SCOPE OF WORK

The scope of work described herein is based on our current understanding of the existing site conditions. The purpose of our services would be to further evaluate the distribution of hydrocarbon contaminants in groundwater beneath the site. The following tasks are proposed:

- Task 1 - Provide Project Management Services;
- Task 2 - Characterize Nature of Free Product in Well W-5;
- Task 3 - Characterize Nature of Asphaltic Substance;
- Task 4 - Remove Free Product from Well W-5;
- Task 5 - Sound All Monitor Wells with an Oil-Water Interface Probe;
- Task 6 - Install Wells Upgradient and Downgradient of Well W-5;

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- Task 7 - Sample New and Selected Existing Wells and Analyze for Petroleum Hydrocarbons; and

- Task 8 - Prepare Report.

A detailed discussion of each task is provided in the following discussion.

Task 1 - Provide Project Management Services

This task includes the participation in project meetings by principal and supervisory personnel, preparation of this work plan, continual interface with the Martin Group, and discussions with the appropriate regulatory personnel as required during the course of the proposed work. For purposes of this proposal, we have assumed that four project meetings will be required. Should more meetings be required, additional costs will be incurred.

Task 2 - Characterize Nature of Free Product in Well W-5

McLaren proposes to characterize the free hydrocarbon product which has been found in Well W-5, using American Standard Testing Methods (ASTM) routinely used in the oil industry, provided that enough product can be obtained to run the test. The proposed tests are:

- Distillation to determine the boiling range of the product by ASTM Method D1160 (heavy products) or ASTM Method D86 (light products);

- API gravity by ASTM Method D287; and

- Pour point, Degrees Fahrenheit by ASTM Method D97.

The boiling range and API gravity will allow us to determine whether the fuel is diesel, fuel oil, or crude. Distillation by ASTM D1160 rather than by ASTM D86 is recommended since the product appears to be heavier than gasoline. If the product cannot be distilled by ASTM D1160, distillation by ASTM D86 will be conducted. The pour point determination will allow us to assess whether the product is mobile at ambient temperatures. Analyses will be conducted on a rush turnaround basis such that results are expected within two days of sampling.

Task 3 - Characterize Nature of Asphaltic Substance

McLaren will sample and take photographs of an existing soil pile at the site. The soil pile contains the tarry asphaltic substance which has been detected in soil at the site. The asphaltic substance will be analyzed by the methods outline in Task 2. Additionally, the asphaltic substance will be tested for leachability by EPA's Toxic Characteristic Leaching Procedure (TCLP) for total petroleum hydrocarbons as diesel (TPH/D), benzene, toluene, xylene, and ethylbenzene (BTXE), and polynuclear aromatic compounds (PNAs). These analyses will be used to access whether the asphaltic substance could potentially be a source of groundwater contamination. The analyses will be conducted on a one week rush turnaround basis.

Task 4 - Remove Free Product from Well W-5

Prior to removal, an oil-water interface probe will be used to measure the amount of free product in the well. The thickness of free product in the well is not expected to be indicative of that in the aquifer but will provide a baseline to compare future measurements. The free product in Well W-5 will be pumped into a 55 gallon drum.

On a weekly basis, for a period of one month, McLaren will sound Well W-5 with an oil-water interface probe and remove free product from the well. The free product will be removed using a pump or a hand bailer. The purpose of this operation is to determine the rate of recharge, if any, of free product to the well. If a low rate of recharge is found, removal on a routine basis, ie. monthly, should be continued. If a higher recharge rate is found, it may be beneficial to install an automatic product recovery system.

Task 5 - Sound All Monitor Wells with an Oil-Water Interface Probe

All monitor wells will be sounded with an oil-water interface probe to determine if free product exists in any wells other than Well W-5. If free product is detected, it will be pumped to a 55 gallon drum.

Task 6 - Install Wells Upgradient and Downgradient of Well W-5

To determine the source and lateral extent of free product occurrence in groundwater, a well will be installed approximately 40 feet downgradient and upgradient of Well W-5. Monitor wells are recommended rather than soil borings so that the impact of the hydrocarbons on groundwater can be assessed.

Since the upgradient well may be located off-site on City of Emeryville property, an access agreement will be required. This process can be time consuming and may require your assistance as well as regulatory intervention.

During construction of the downgradient monitor well, close contact will be maintained with the Martin Group's project manager to keep him appraised of our preliminary findings. If visual evidence indicates the presence of hydrocarbon product, a contingency well located another 40 feet downgradient of the new well may be recommended to avoid drilling rig mobilization charges at a future date.

All necessary permits will be obtained. Soil borings will be drilled to a total depth of 15 feet using conventional hollow stem auger equipment. The materials encountered in each boring will be logged in accordance with the Unified Soil Classification System by a field geologist or soil scientist who will obtain relatively undisturbed samples at five-foot intervals and at the soil-groundwater interface for visual classification and qualitative field analysis for fuel hydrocarbon constituents using a photo-ionization detector. Samples will be obtained using a two or two and one-half inch O.D. Modified California Sampler lined with clean brass sleeves. The sampler will be driven ahead of the lead auger with a 140-pound hammer free falling 30 inches. Blow counts will be taken for each six-inch driving interval.

Wells will be constructed of two inch diameter schedule 40 PVC using approximately four feet of blank casing and ten feet of 0.02-inch machine slotted screen. The annular space between the well screen and borehole will be packed with a clean graded sand from the bottom of the borehole to one foot above the screened interval. A one foot bentonite seal will be placed above the sand pack and the remaining two feet will be filled with neat cement by the tremie method. A water tight locking cap will be installed on the well and the wellhead will be protected by installing an at-grade, watertight, traffic rated road box. Each well which does not contain free product will be developed using appropriate technologies to remove sediment and enhance communication with the water bearing zone.

The depth to water and product, if any, will be measured using an oil-water interface probe. A clean plastic bailer will then be used to obtain a water sample to visually inspect for product occurrence and/or characteristics. If no product is observed, the well will be purged by

removing three to five well volumes of water and a sample obtained for laboratory analyses. All gauging, purging, sampling, and sample preservation will be conducted in accordance with the McLaren Standard Field Operation Procedures.

Task 7 - Sample New and Selected Existing Wells and Analyze for Petroleum Hydrocarbons

Groundwater samples will be collected from existing wells W-5, W-7, W-8, W-10, W-15, and the newly constructed wells. The samples will be submitted to McLaren Analytical Laboratory, under proper chain-of-custody procedures, for analysis of total petroleum hydrocarbon as diesel (TPH/D) and benzene, toluene, xylene, and ethylbenzene (BTXE) by the DHS LUFT Manual Method. These analyses were selected based on Regional Board guidelines for diesel and heavier petroleum components. The samples will be analyzed on a rush turnaround basis such that results will be available within two days of sample submittal to the laboratory.

Task 8 - Prepare Report

A report will be prepared to describe the work conducted at the site, groundwater conditions, and investigation results. The report will include all necessary supporting materials and graphics including: boring logs, well construction details, site plan, laboratory reports, chain-of-custody sheets, and permit copies. Recommendations and cost estimates for additional work, if any, would be presented in a cover letter to the report. Following review and comment by the Martin Group, the final report would be submitted.

Soils and groundwater generated from the boring and sampling operations will be contained in barrels and stored on-site. The barrels will remain on-site pending laboratory analyses to determine a proper disposal method. Because we cannot reliably estimate the volume of contaminated soil and groundwater which may be generated through the investigation, the following cost estimates does not include costs for handling and disposal of these materials. Once disposal requirements are known, we will provide the Martin Group with a firm cost estimate to handle these materials.

PROPOSED FEE

McLaren would provide the above enumerated services based on the cost estimate presented in Attachment 1. The cost estimate includes an additional optional, downgradient well. Should drilling be denied due to

the presence of unusual subsurface materials, additional costs may be incurred.

We wish to thank the Martin Group for the opportunity to submit this proposal. Due to the uncertainties associated with obtaining an access agreement to drill on the City of Emeryville property, we have not provided a schedule for completing the work. However, we plan to proceed with all tasks immediately upon your authorization to proceed. Should you have questions or comments, please do not hesitate to contact us.

Very truly yours,

Del Christenson

Del Christenson, REA
Principal Scientist

Susan Gahry

Susan Gahry
Supervising Engineer

Attachment

cc: Lowell Miller (W/O Attachment)
Robert Wyatt

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