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3 August 1993
Ref: NC367

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

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Attention: Mr. James Guthrie, Director of Compliance

Subject: Aeration of Stockpiled Contaminated Soil at Redwood Regional Park Site

Dear Mr. Guthrie:

In accordance with guidance provided to Engineering-Science, Inc. (ES) by Mr. Dick Nelson of the Compliance Section of Bay Area Air Quality Management District (BAAQMD), we are submitting the analytical results of contaminated stockpile soil profile sampling conducted at the Redwood Regional Park underground storage tank (UST) site.

There is currently an estimated 600 cubic yards of contaminated soil stockpiled behind Fire Station #2 on Redwood Road, which was generated during removal of a gasoline UST and subsequent excavation activities.

STOCKPILE SOIL SAMPLING

ES collected stockpile soil samples on 12 July 1993. Stockpile soil sampling was conducted in accordance with the BAAQMD Regulation 8 Rule 40 sampling protocol, which requires one four-point composite soil sample per 50 cubic yards of stockpiled soil (total of 12 composite samples for the estimated 600 cubic yards at the site). The surface of the stockpile was subdivided into a grid consisting of 48 approximately 9-foot by 10-foot sectors. One discrete sample was collected from the center of each sector (total of 48 discrete samples). Figure 1 shows the stockpile sampling grid and sampling locations.

Soil samples were collected after removing at least the upper six inches of soil at each sector location. Stainless steel or brass sampling tubes (six-inches long and two-inches outside diameter) were then filled with soil, sealed with paraffin laboratory film and non-reactive plastic caps, labeled, refrigerated and transported under chain-of-custody to the analytical laboratory. Soil sampling procedures were documented in a bound field logbook, including a sketch map of the stockpile and soil sampling locations.

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LABORATORY ANALYSES

Soil samples were analyzed by a laboratory that maintains current certification under the State of California Department of Toxic Substances Control (DTSC) Environmental Laboratory Accreditation Program (ELAP). The four discrete samples comprising each composite sample were composited in the laboratory prior to analysis. Each of the 12 composite samples were analyzed for the following:

- o Total petroleum hydrocarbons as gasoline (TPH-g) by DTSC Leaking Underground Fuel Tank (LUFT) Manual method
- o BTXE by EPA Method 8020

Table 1 summarizes the analytical results of the stockpile soil sampling.

The overall averages for all each of the analytes TPH-g, benzene, toluene, total xylenes and ethylbenzene were 22.25, 0.072, 0.086, 1.93 and 0.05 mg/kg, respectively (a sum total average of 24.39 mg/kg). Of the twelve composite soil samples, only one (RED-K1-4) contained TPH-g in excess of 99 mg/kg (detected at 180 mg/kg).

The analytical results indicate that the majority of the stockpiled soil contains TPH-g + BTXE at concentrations less than the 50 mg/kg organic content limit of total exemption under Regulation 8 Rule 40. Therefore ES proposes to aerate the entire 600 cubic yards simultaneously, beginning on Wednesday 11 August 1993. We respectfully request that BAAQMD respond to this proposed aeration project in writing on or before Tuesday 10 August 1993.

Should you have questions or require additional information regarding this submittal, please call.

Very truly yours,
ENGINEERING-SCIENCE, INC.



Bruce M. Rucker
Project Manager

attachments
"aerate.doc"

TABLE 1
STOCKPILE SOIL PROFILE ANALYTICAL RESULTS
REDWOOD REGIONAL PARK SITE, OAKLAND, CALIFORNIA
(all concentrations reported in mg/kg)

Sample ID	Analyte					Total Concentration
	TPH-g	Benzene	Toluene	Xylenes	Ethylbenzene	
MRL	1.000	0.005	0.005	0.005	0.005	
RED-A1-4	17.000	0.005	0.013	0.810	0.010	17.838
RED-B1-4 *	7.000	0.400	0.400	3.900	0.400	12.100
RED-C1-4	1.000	0.005	0.005	0.005	0.005	1.020
RED-D1-4	1.000	0.005	0.005	0.005	0.005	1.020
RED-E1-4	1.000	0.005	0.005	0.005	0.005	0.204
RED-F1-4	1.000	0.005	0.005	0.005	0.005	1.020
RED-G1-4	14.000	0.005	0.005	0.400	0.005	14.415
RED-H1-4	36.000	0.018	0.098	1.000	0.015	37.131
RED-I1-4	1.000	0.005	0.005	0.006	0.005	1.021
RED-J1-4	7.000	0.005	0.017	0.034	0.005	7.061
RED-K1-4 *	180.000	0.400	0.470	17.000	0.140	198.010
RED-L1-4	1.000	0.005	0.005	0.005	0.005	1.020
Analyte Average	22.250	0.072	0.086	1.931	0.050	24.390

Notes:

MRL = Method Reporting Limit

TPH-g = Total petroleum hydrocarbons as gasoline

Calculations include a concentration equal to the method detection limit, when the analyte was not detected

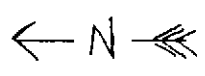
* MRL for benzene, toluene, xylenes and ethylbenzene was 0.4 due to required dilution

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Client East Bay Regional Parks District
 Subject Redwood Regional Park UST Site -
Contaminated Soil Stockpile Sampling

Job No. NC367.04
 By Bruce Rucker
 Checked

Sheet 1 of 1
 Date 7/13/93
 Rev. Ø



FIRE STATION #2

K-1	J-1	J-2	A-1	A-2
K-2	J-3	J-4	A-3	A-4
K-3	I-1	I-2	B-1	B-2
K-4	I-3	I-4	B-3	B-4
L-1	H-1	H-2	C-1	C-2
L-2	H-3	H-4	C-3	C-4
L-3	G-1	G-2	D-1	D-2
L-4	G-3	G-4	D-3	D-4
	F-1	F-2	E-1	E-2
	F-3	F-4	E-3	E-4

Explanation
 [---] 9' x 10' soil
 [---] Sampling sector
 A-1

