



SMITH-EMERY GEOSERVICES
 A MEMBER OF THE SMITH-EMERY COMPANIES, ESTABLISHED 1904
 HUNTERS POINT SHIPYARD, BUILDING 114
 P.O. BOX 880550
 SAN FRANCISCO, CALIFORNIA 94188-0550
 PHONE 415/330-3000
 FAX 415/330-3030

#3586

November 22, 1995

SEG Corresp. No. c9511-04

Alameda County Department of Environmental Health (ACDEH)
 1131 Harbor Bay Parkway, Suite #250
 Alameda, California 94502-6577

Attn: Mr. Barney Chan

Re: Subsurface Characterization of 3925 Alameda Avenue, Oakland, CA 94601

Gentlemen:

In reference to the ACDEH letter of 8/28/95, the first quarterly groundwater monitoring at this site took place on September 22, 1995, with a report to be issued in the third week of November.

In our opinion, the subject site requires only continued monitoring of groundwater at this time. One of our objectives during the groundwater monitoring program will be to further substantiate the proposition that the source of kerosene is off-site migration from the Ekotek site. Toward that objective, we submit the following for your review and comment.

- Subject Site:** There is documentation of only gasoline and diesel storage on the subject site, with no documentation of kerosene storage on-site.
 The subject site tank permits list only one 10K diesel tank and one 1K regular gasoline tank.
- Nearby Sites:** The subject property is surrounded by sites having environmental impairment:

Ekotek Lube	4000 Alameda Avenue	fuels, solvents
Cobbledick-Kibbe	500 High Street	fuels
Owens-Illinois	3600 Alameda Avenue	fuels
Learner Company	3675 Alameda Avenue	fuels
Shell Oil Company	630 High Street	fuels
- North Adjacent Site:** Previous investigations corroborate the finding of extremely high levels of kerosene and diesel in the Ekotek wells:

From an Alameda County DEH internal memo February 5, 1991, on file at ACDEH
 Subject: EKOTEK lube, 4200 Alameda Avenue, Oakland 94601

95 DEC -5 PM 1:50
 ENVIRONMENTAL
 PROTECTION
 ANAHEIM

LOS ANGELES

791 EAST WASHINGTON BOULEVARD
 LOS ANGELES, CALIFORNIA 90021
 PHONE 213/745-5333
 FAX 213/746-0744

5427 EAST LA PALMA AVENUE
 ANAHEIM, CALIFORNIA 92807
 PHONE 714/693-1026
 FAX 714/693-1034

SMITH-EMERY GEOSERVICES

"In December 1990, American National Can Company sampled two wells it had installed on its property. These wells abut EKOTEK property, on the cross-gradient. One of these wells had floating product on it. This product was analyzed and found to have..."

"TPH kerosene	264,000 ppm
TPH diesel	62,000 ppm
Arochlor 1260 PCB	4,160 ppm
2 Methyl naphthalene	1,100 ppm
Naphthalene	880 ppm."

*not representative of
Ekotek site*

4. **Site Hydrogeology:** Data from site investigations by Engeo, Inc., and by Smith-Emery GeoServices support a subsurface transport of kerosene migration controlled by site hydrogeology.

The March 7, 1994 borings by Engeo Inc. found 150 ppm TPH-kerosene at 8' bgs in the top of the saturated zone in their boring B4-2, the boring closest to northeast property line, and smaller amounts in the groundwater samples in their borings B1 and B3 further east. The top of the water table lies at about 10 to 11 feet bgs. The July 1995 Smith-Emery investigation found 26 ppm TPH-kerosene in soil at 10' bgs in MW-1, 130 ppm TPH-kerosene in soil at 13.5' bgs in MW-1, and 35 ppm TPH-kerosene at 11' bgs in MW-2. No kerosene has been detected in the soil and water samples from MW-3. The subsurface formation at MW-3 is the least hydrologically transmissive of the three wells, and it is our opinion that the groundwater in this well is not representative of the groundwater throughout the subject site.

This distinctive distribution of kerosene discovered at the subject site apparently indicates that the subsurface stratigraphy and lithology are composed of interfingering silt and clay layers, which create channels of higher and lower transmissivity to groundwater movement. The subsurface hydrogeological control of groundwater movement is also expected to strongly influence the expression of kerosene transport away from the Ekotek Lube site. Kerosene was found at shallow levels consistent with the reported depths to groundwater. Groundwater gradients in the region are observed to fluctuate due to seasonal and tidal factors, with reported directions to be south and southeasterly (SEG, subject site, July-September '95) and northwesterly (Converse Environmental West, Shell Oil, 630 High Street, March '91).

SMITH-EMERY GEOSERVICES

Conclusions

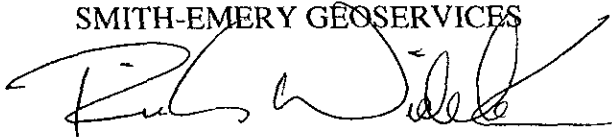
- The subject site is surrounded by properties that contribute hydrocarbons to the local groundwater. The north adjacent site has a long history of heavy contamination by several pollutants, is not remediated, and is the only known local source of kerosene. The known groundwater flow regime would permit subsurface migration of kerosene onto the subject site. This migration is presumably active at this time.
- In our opinion, the subject site is currently subject to active migration of kerosene (and possibly other hydrocarbons) from off-site. The predominance of the north adjacent site (4200 Alameda Avenue) as a prime contaminant source makes it the initial priority for site characterization and remediation in order to arrest the active contaminant plume, prior to undertaking any site remediations of secondary, downgradient properties.

- At this time, the only action that we recommend for the subject site is the continuation of quarterly groundwater monitoring of its three wells. Future work should await definitive remediation of the off-site source(s) of contamination. In addition to the current analytical testing for gasoline, diesel, kerosene, and BTEX, the analyses should include naphthalene and 2-methylnaphthalene, which should also be diagnostic of the Ekotek plume.

*(any other compounds?)
no! Just those*

We would appreciate your response to our recommendations for the subject site. We are planning to proceed on the basis of the conclusions and recommendations presented herein.

Sincerely,
SMITH-EMERY GEOSERVICES



RICK WIDEBROOK
Project Geologist



KRIS JOHNSON
Vice-President
R.E.A. 3925, C.E.G. 1915

cc: Smooke and Sons Investment Company