OIL SPILL EATER INTERNATIONAL, CORP.

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In-Situ Underground Cleanup of Heating Oil

In November, 1996 Alpha Geoscience used **OSE II** to perform an "In-Situ Cleanup" of 115 cubic yards of kerosine contaminated soil in a trailer park in Highland Falls, New York. The in-situ cleanup was necessary since removing the contaminated soil could not be done without moving buildings and porches.

Attached is Alpha Geoscience's December 1, 1997 letter to the New York State Department of Environmental Control (NYSDEC) reporting their final data collected and requesting a "*closure letter*" from the state of New York.

The NYSDEC report form and "*closure letter*" follows the Geoscience's report and their request for a closure letter. Note that the NYSDEC states ***"Cleanup Complete*. NFA (No Further Action)."**

This cleanup proves how effective **OSE II** is for "in-situ cleanups" under buildings and concrete or asphalt areas.

O.A. (George) Lively
Rear Admiral (RET)
President

OAL/eem

Enclosure

ALPHA
GEOSCIENCE
Geology
Hydrology
Remediation
Water Supply

December 1, 1997

Mr. David Traver
NYSDEC Region 3
21 South Putt Corners Road
New Paltz, New York 12561-1696

Re: Summary and Results of In Situ Soil Remediation
42 Hudson View Terrace, Highland Falls, New York
NYSDEC Spill No. 95-16786

Dear Mr. Traver:

This letter report summarizes the remediation efforts performed on November 7 and 8, 1996, July 24 and November 3, 1997, at the above referenced site. The work was performed in accordance with the Revised Remedial Work Plan, prepared by Alpha Geoscience, dated September 25, 1996, and approved by the New York State Department of Environmental Conservation (NYSDEC) on October 21, 1996. A description of the work performed is presented below.

November, 1996 Activities

A pre-remediation composite soil sample (SS-1) was collected for laboratory analysis. The sample was collected to provide a baseline for comparison with post-remediation sampling to determine the effectiveness of remediation. Composite sample SS-1 was collected from a depth of 0.5 to 2.5 feet at four locations identified as being within the contaminated area during the previous spill investigation. The approximate sampling locations are shown on the attached Figure 1. The composite sample was retained in laboratory-supplied containers, placed on ice in a chilled cooler, and delivered to a NYS Department of Health (DOH)-certified laboratory following chain of custody protocol. The sample was analyzed for volatile organic compounds (VOCs) via EPA Method 8021, and semi-VOCs via EPA Method 8270, in accordance with the NYSDEC Petroleum-Contaminated Soil Guidance Policy, STARS Memo #1. A copy of the laboratory analytical report is provided in Attachment No. 1. The results indicate elevated levels of VOCs in the soil, totaling approximately 35 parts per million (ppm). No semi-VOCs were detected; however, the detection limit was elevated (2.0 ppm) because of the high VOC concentrations, possibly masking the presence of semi-VOCs.

An earth berm was constructed to prevent surface water runoff to the small stream during application of the bioenhancement product. The berm was constructed between trailers number 42 and 43 on the east side of the stream (Figure 1). The berm is approximately 10 inches high and is covered and secured with plastic sheeting to prevent erosion of, or infiltration through, the berm.

After construction of the berm, the soil was prepared by rototilling the accessible affected area. Remedial efforts were implemented by applying a NYSDOH-approved bioenhancement product known as Oil Spill Eater II (OSE II). Application of the OSE II was performed by mixing the soluble blend with water and spraying the mixture onto the entire area to be treated. The OSE II was applied at a concentration of approximately 0.38 gallons per cubic yard of soil. Approximately 19 gallons of OSE II was applied each day for two consecutive days. The soil was tilled again following application on the first day. Saturated surface soil conditions precluded tilling following the OSE II application on the

second day. The OSE II was applied according to the manufacturers specifications for application. The accessible areas were covered and secured with black plastic sheeting to facilitate bacterial growth by warming the soil via solar convection.

July, 1997 Activities

The plastic sheeting was removed and a landscaping company installed a new grass sod lawn in the area of the OSE II application during June, 1997. Alpha personnel revisited the site on July 24, 1997 to screen the subsurface soil and monitor the progress of remediation. A soil sample was collected at or very near each of the four sampling locations shown on Figure 1. The soil samples were screened via headspace analysis utilizing an HNU DL-101 photoionization detector (PID) calibrated with isobutylene gas. The results of PID screening indicated significantly reduced measurements compared to PID screening during the initial site characterization performed in May, 1996, indicating the bioremediation was working effectively. A copy of the organic vapor screening log is provided in Attachment No. 2.

A composite soil sample, designated Comp-1, was collected from the four sampling locations using the same sampling procedures used in November, 1996. The sample was analyzed for total petroleum hydrocarbons (TPH) to provide a relative indication of the amount of contamination remaining. The results of the analysis indicated a TPH concentration of 88 milligrams per kilogram (mg/kg). A copy of the laboratory analytical report is provided in Attachment No. 3.

November, 1997 Activities

On November 3, 1997, Alpha personnel collected soil samples, designated CS-1, CS-2, CS-3, and CS-4, at or near each of the four locations shown on Figure 1. A surface water sample, designated W-1, and a sediment sample, designated SW-1, were collected from the nearby small stream. Headspace screening of the soil, water and sediment samples was performed utilizing the PID. Screening of samples W-1, SW-1, CS-1 and CS-4 via the PID indicated measurements at the instrument background level. Soil samples CS-2 and CS-3 measured 3.8 parts per million (ppm) and 14 ppm above instrument background, respectively. A copy of the organic vapor screening log is provided in Attachment No. 2.

A composite soil sample, designated CS-1, was collected from the four locations using the methods described above. The sample was analyzed for STARS VOCs via TCLP EPA Method 8021 and STARS semi-VOCs via TCLP EPA Method 8270, in accordance with the approved work plan. The results of analysis indicated no semi-VOC compounds were detected. The results of analysis for VOCs indicated four compounds were detected in concentrations slightly exceeding their respective NYSDEC STARS guidance values. The compounds are 1,3,5-trimethylbenzene detected at 8 parts per billion (ppb), tert-butylbenzene (coelutes with 1,2,3-trimethylbenzene) at a total of 16 ppb, and naphthalene at 18 ppb. A copy of the laboratory analytical report is attached.

Summary and Recommendation

A summary of the site remediation and recommendations is presented below.

- The petroleum-impacted soil area was treated in accordance with the NYSDEC-approved Work Plan and the manufacturers recommendations utilizing a bioremedial enhancement product called OSE II.

- The results of PID screening of individual soil sample locations indicates a significant reduction of petroleum compounds since remedial efforts were initiated in November, 1996.

- The results of PID screening of water and sediment collected from the nearby small stream indicated contamination has not migrated to the stream.

- The analytical results of post-remedial soil samples indicates the OSE II has effectively stimulated activity of indigenous bacteria resulting in substantial breakdown and reduction of petroleum compounds. The soil generally meets NYSDEC soil cleanup guidance criteria specified in STARS Memo #1. Continued bacterial activity will further reduce and breakdown petroleum compounds.

No further investigations or remediation is necessary for this site, based on the investigation and analytical data. We hereby request the NYSDEC close the spill file for this site.

If you have any questions regarding this report, please contact me or Tom Johnson.

Sincerely,
Alpha Geoscience

Michael S. Ralbovsky
Hydrogeologist

MSR:ce
attachment
cc: Mr. Don Abel (La Marche)
d:/../highland/closure.ltr

NYSDEC SPILL REPORT FORM

DEC REGION# 3 (New Paltz) **SPILL NUMBER** 9516786
SPILL NAME: SAMADI RESIDENCE **DEC LEAD:** MCCARTHY
CALLER'S NAME: VICTROIA SAMADI **NOTIFIER'S NAME:** VICTROIA SAMADI
CALLER'S AGENCY: CITIZEN **NOTIFIER'S AGENCY:** CITIZEN
CALLER'S PHONE: (914) 446-0519 **EXT.** **NOTIFIER'S PHONE:** (914) 446-0519 **EXT.**

SPILL DATE: 03/28/96 **TIME:** 12:00
CALL RECEIVED DATE: 03/28/96 **TIME:** 15:38 RECEIVED BY CID #: 257

	Material Spilled	Mat. Class	Am't Spilled	Units	Am't Recovered
1)	KEROSENE	(Pet)-Haz-Other-Unk.	Unknown	(Gal) – Lbs	Unknown
2)		Pet-Haz-Other-Unk.		Gal – Lbs	
3)		Pet-Haz-Other-Unk.		Gal – Lbs	
4)		Pet-Haz-Other-Unk.		Gal – Lbs	

SPILL LOCATION

PLACE: SAMADI RESIDENCE
STREET: 42 HUSDONVIEW TERR
CITY: HIGHLAND FALLS
T/C/V: HIGHLAND FALLS **CO:** ORANGE **STATE:** NY **ZIP:**
CONTACT: VICTROIA SAMADI
PHONE: (914) 446-0519

POTENTIAL SPILLER

NAME: SAMADI RESIDENCE
STREET: 42 HUSDONVIEW TERR
CONTACT: VICTROIA SAMADI
PHONE: (914) 446-0519

SPILL CAUSE

Human Error	Tank Test Failure	(Tank Failure)	Gas Station	(Private Dwelling)	Non-Maj Facility
Traffic Accident	Housekeeping	Tank Overfill	Passenger Vehicle	Vessel	Comm/Indust
Equipment Failure	Deliberate	Other	Comm. Vehicle	Railroad Car	Non-Comm/Inst
Vandalism	Abandoned Drums	Unknown	Tank Truck	Major Facility	Unknown

SPILL SOURCE

RESOURCE AFFECTED

(On Land)	Groundwater	Air
In Sewer	Surface Water**	

**WATERBODY:

SPILL REPORTED BY

(Responsible Party)	Tank Tester	Local Agency
Affected Persons	DEC	Federal Gov't
Police Department	Citizen	Other
Fire Department	Health Dept.	

CALLER REMARKS: tank leaked unknown if company did cleanup when they replaced tank

*PBS Number	Tank Number	Tank Size	Test Method	Leak Rate

PRIMARY CONTACT CALLED DATE: **TIME:** hrs. **REACHED DATE:** **TIME:**
SECONDARY CONT. CALLED DATE: **TIME:** hrs. **FAXED BY CID#:** **TIME:**

PIN # **T & A**	**Cost Center**	**ISR to Central Office**	
Cleanup Ceased	**Meets St'ds** YES	**Last Inspection**	**Penalty** NO
RP-CUI	ENF-INIT	**INVES-COM**	**CAP**
UST Trust Eligible NO	**Site:** A B (C) D E **Resp. Party** 1 2 3 4 5 (6)	**Reg Close Date** 12/19/97	

Created on 03/28/96 **Last Updated on** 01/06/98 **Is Updated:** NO **EDO** **DATA INPUT** [ ]
Date Printed: 03/04/98

DEC REMARKS

12/19/97 RECEIVED REPORT OF REMEDIAL ACTION FROM ALPHA GEOSCIENCE. CLEANUP COMPLETE. NFA;