



30 June 1993

Please Reference: 93/9029  
Project No.: 300174A

Mr. Philip Chandler  
California Regional Water Quality Control Board  
Los Angeles Region  
101 Centre Plaza Drive  
Monterey Park, CA 91754-2156

RE: First Quarter 1993 groundwater sampling and monitoring at 15006 Nelson Avenue, City of Industry, California

Dear Mr. Chandler:

Enclosed are the results for the April 1993 groundwater monitoring and sampling at 15006 Nelson Avenue in the City of Industry, California. This is the second of four quarterly monitoring and sampling rounds and is part of a year-long program evaluating whether petroleum hydrocarbons discharged from a diesel underground storage tank (removed 1988) have impacted groundwater at the site. The evaluation is being conducted under the direction of the California Regional Water Quality Control Board (CRWQCB), Los Angeles Region. This letter report includes our field observations, a description of the monitoring and sampling procedures, a summary of the laboratory analytical results, and our conclusions.

On 7 April 1993, AeroVironment obtained field measurements of groundwater and collected a groundwater sample for laboratory analysis from Monitoring Well MW-1. Before purging began, a sounding device was used to measure the depth to groundwater and total depth of the well from a notch on the north side of the wellhead. The depth to groundwater was measured at 65.95 feet, and the total well depth was measured at 80.23 feet. No odor, film, or sheen was noted on the well sounding tape or probe after measurement.

Well purging began with a check for floating product using a clear bailer. No floating product, sheen, or odor was noted. Purging continued thereafter with a three-inch diameter Teflon hand bailer. After approximately five gallons of water were removed from the well, the three-inch bailer was replaced with a 1.5-inch diameter polyvinyl chloride bailer. The smaller bailer was selected because the resulting decrease in purge rate was better suited to the well's low yield, and because the larger bailer was more likely to surge the well and increase turbidity. The purge water was emptied into a 55-gallon drum for storage pending disposal by Northern Trust Bank of California. Approximately 10 gallons were purged from the well over a four-hour period. At no

time did drawdown exceed 20 percent of the height of the water column. Purging was halted after 10 gallons so that the well could have time to attain the required 90 percent recovery before the facility closed for the evening.

The table below is a record of parameters measured in the field during the well purge. These parameters include the drawdown (in feet), conductivity (in microsiemens per centimeter, or  $\mu\text{S}/\text{cm}$ ), temperature (in degrees Fahrenheit, or  $^{\circ}\text{F}$ ), and pH (in pH units).

Gallons Purged	Drawdown (feet)	Conductivity ( $\mu\text{S}/\text{cm}$ )	Temperature ( $^{\circ}\text{F}$ )	pH (units)	Comments
0	0.00	1098	68.5	6.05	Clear
1	0.85	1292	68.2	5.74	Some suspended material
2	1.18	1359	71.4	6.17	Turbid
3	1.63	1328	70.0	6.54	Turbid
4	2.03	1312	67.2	6.73	Turbid
5	2.46	1299	66.8	6.86	Turbid
6	1.93	1324	73.3	7.64	Decreasing turbidity
7	2.32	1324	68.6	7.77	Increasing turbidity
8	2.33	1383	74.2	7.69	Suspended fines
9	2.39	1422	71.9	7.51	Suspended fines
10	2.38	1444	72.8	7.63	Suspended fines

The well recharged at an average rate of 0.64 feet per hour. After the well had recharged to 90 percent of its original level, the groundwater sample was collected with a disposable bailer. A bottom-emptying device was used to decant the groundwater sample into four 40-milliliter glass vials (two vials for each organics analysis) and one 500-milliliter polyethylene bottle (for turbidity analysis). Each of the glass vials had a Teflon-lined septum fitted into its screw cap, and contained hydrochloric acid as a preservative. Each vial was carefully filled until a meniscus formed at its mouth. The container then was capped, inverted, and tapped to check for air bubbles. No bubbles were noted in any of the filled vials. A label that included a unique sample identification number and the date and time of sample collection was attached to each sample container. Immediately after being labeled, the sample was placed in a chilled ice chest. Before leaving the site, AeroVironment personnel placed the well cap and flush-mounted cover back on the well.

With the exception of the disposable bailer, all equipment that came into contact with the groundwater was first scrubbed in a solution of Alconox, double rinsed with tap water, and given a final rinse with distilled water. The disposable bailer was kept clean by leaving it in its factory packaging until immediately before use.

Mr. Philip Chandler

93/9029

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The chilled sample was transported under standard chain-of-custody protocols to TBD Environmental Laboratories, a state-certified laboratory, for analysis. The sample was analyzed for volatile aromatic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 602, for total petroleum hydrocarbons (TPH) by USEPA Method 8015 (modified for diesel), and for turbidity by USEPA Method 180.1. No VOCs or TPH were detected at concentrations above the analytical reporting limits (1 microgram per liter for VOCs and 1 milligram per liter for TPH). The turbidity level was found to be 77 nephelometric turbidity units (NTUs).

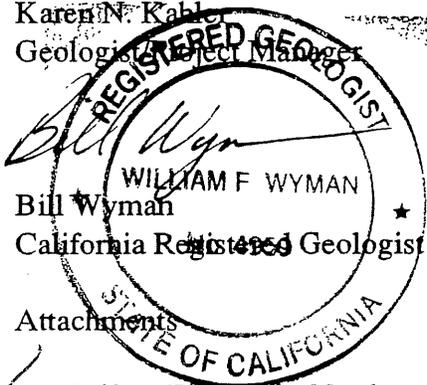
As we discussed in our telephone conversation of 9 April 1993, this turbidity level exceeds the 50 NTU maximum you had requested. I called to inform you of the turbidity level before the laboratory performed the organics analyses. At that time, you indicated that the results of this sampling round would be accepted as a low estimate, and that the laboratory should proceed with the organics analyses.

Attached you will find copies of the chain-of-custody form, laboratory report, and field notes. If you have any questions regarding this data submittal or this project, please do not hesitate to call me or Mr. Bill Wyman at (818) 357-9983.

Sincerely,



Karen N. Kable  
Geologist/Project Manager



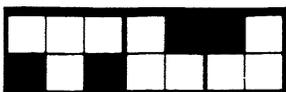
Bill Wyman  
California Registered Geologist No. 4959

Attachments

✓ cc: Jeffrey Eisenberg, Northern Trust Bank of California

**ATTACHMENTS**





tbd environmental laboratories  
 2261 Federal Avenue  
 Los Angeles, California 90064-1403

Telephone: (310) 478-4050 Fax: (310) 478-8604

### Laboratory Report: General Chemistry

Job No.: 930408A Client: AeroVironment, Inc.  
 Sampled: 4/7/93  
 Type: Project: 300174  
 Received: 4/8/93 Matrix: Groundwater  
 Prepared: 4/8/93 Batch: 931635  
 Analyzed: 4/8/93 By: GS

Client ID	Lab ID	Turbidity 180.1				Units
	Blank	ND				NTU
6900	930408A-1	77				NTU
<b>Reporting Limit</b>		<b>0.1</b>				NTU

Notes: BRL - Below Reporting Limit, NA - Not Analyzed, ND - Not Detected  
 MS(D) - Matrix Spike (Duplicate), LCS - Lab Control Sample, OR - Over Range

Comments:

Approved:

*Robert Farnsworth*

Laboratory Director

4/15/93

Date

\_\_\_\_\_  
 Quality Assurance Coordinator

\_\_\_\_\_  
 Date





tbd environmental laboratories  
 2261 Federal Avenue  
 Los Angeles, California 90064-1403

Telephone: (310) 478-4050 Fax: (310) 478-8604

### Analytical Laboratory Report Method 8020 - Volatile Aromatics by GC

Job No:	930408A	Client:	AeroVironment
Received:	4/8/93	Project:	300174
Prep:	4/14/93	Field:	6900
Analyzed:	4/14/93	Matrix:	Aqueous
Method:	HS	Batch:	I0416
By:	LM	Lab ID:	930408A-1

Compound	Conc. Found		Percent Recovery			Reporting Limit	Units
	Sample	Blank	Spike 1	Spike 2	LCS		
			930408B-1	930408B-1			
Benzene	BRL	ND	129	134	124	1	ug/L
Toluene	BRL	ND	113	124	109	1	ug/L
Chlorobenzene	BRL	ND	123	129	117	1	ug/L
Ethylbenzene	BRL	ND	109	113	101	1	ug/L
Xylene (para + meta)	BRL	ND	104	108	107	1	ug/L
Xylene (ortho)	BRL	ND	114	120	108	1	ug/L
1,3-Dichlorobenzene	BRL	ND	100	103	94	1	ug/L
1,4-Dichlorobenzene	BRL	ND	88	96	87	1	ug/L
1,2-Dichlorobenzene	BRL	ND	111	114	102	1	ug/L
Surrogate Recovery %							
Trifluorotoluene		115	114	112	122	110	

Notes: LCS - Laboratory Control Standard, ND - Not Detected, BRL - Below Reporting Limit

Comments:

Approved: *Robert A. Rangel* 4/15/93  
 Laboratory Director Date

\_\_\_\_\_  
 QA Coordinator Date

Will continue purge until parameters stabilize or facility closes for the day, whichever comes first. (3 well volumes is obviously out of the question if this is to be a 1-day daylight operation.) Will bail a gallon, then measure water level - if it's ~~68.17~~ <sup>68.17</sup> > 68', will wait until it's recovered to that level.

Time	total gal.	cond	T	pH	comments
1314	8	1383	74.2	7.69	suspended fines
1316	-	-	-	-	WL = 68.28'
1341	9	1422	71.9	7.51	suspended fines
1346	-	-	-	-	WL = 68.34'

If well is to reach 90% recovery before it is sampled, the water level will have to rise to 67.38', a net increase of 0.96'. At current recovery rates, the desired level will take roughly 2 hours to attain. The facility will close at 5 pm; what with local gang & drug activity, I doubt the employees here will stay late for me (nor do I want to stay late under these circumstances). Purge must end @ 14:30 at the latest.

1417	10	1444	72.8	7.63	suspended fines
1422	-	-	-	-	WL = 68.33'

535 WL = 67.47'  
 ) WL = 67.42' - 0.05' recharge in 4.46 minutes  

$$\frac{0.05 \text{ ft}}{4.46 \text{ min}} \times \frac{60 \text{ min}}{\text{hr}} = \text{recharge rate of } 0.67 \text{ ft/hr}$$
 (or 0.01 ft/min)

554 Recovery rate is greater than that measured @ 1043 this morning (0.5 ft/hr).  
 → WL = 67.30' - proceed w/ sampling.

558 Sample 6:00 collected. Conductivity (1515 μS/cm), temp. (75.9°F) & pH (6.39) measured on first ("rinse") bailerful. Disposable bailer being used. Water appears clear.

631 Imhoff cone w/ water from first small bailerful (12:23) - 2.5 ml sediment, 0.3 ml of which is silt/fine sand - rest is clay. Some suspended fines still present in the water (total ~ 750 ml)

646 I leave site.

m Page No. \_\_\_\_\_

0910 I arrive @ site. Manual (?) shows me the well location & drums. One of the drums is not full yet; Manuel brings it over to well on a pallet. I set up for sampling & decon. (Decon is wash in Alconox/water solution, two tap-water rinses & final distilled-water rinse.)

0938 WL = 65.95' from notch in top of casing } No odor or sheen noted on well  
 TD = 80.23' " " " " " } sounding tape or probe

WATER COLUMN 14.28'  
 20% drawdown @ 11.42' (WL 68.81')

Well volume =  $\pi \frac{(0.33)^2}{4} (14.28') \times \frac{7.48 \text{ gal}}{\text{ft}^3} = 9.14 \text{ gal}$

3 well volumes = 27.42 gal

1002 pH meter calibrated to standards 7 & 10

1007 First bailerful collected in clear bailer - no floating product, sheen, or odor noted.

gal	cond (µS/cm)	T (°F)	pH	comments
0	1098	68.5	6.05	clear water

1014 pH meter recalibrated to standards 7 & 4.

1030 3" ID bailer used to continue purge - WL afterwards @ 66.80'

gal	cond	T	pH	comments
1	1292	68.2	5.74	ENC 4/7/93 some suspended mat'l

1043 Continue purge - WL 66.65'; measure recovery rate 0.05' / 6 min.

gal	cond	T	pH	comments
2	1359	71.4	6.17	turbid; WL afterwards 67.13'
3	1328	70.0	6.54	turbid; WL afterwards 67.58'
4	1312	67.2	6.73	turbid; WL afterwards 67.98'
5	ENC 4/7/93 1299	66.8	6.86	" " " 68.41'

1122 Halt purge to allow for well recovery. Purge will resume w/a PVC bailer 3' x 1.5". (3" Teflon bailer used before removed roughly 1 gal. @ a time. Capacity of smaller bailer is about 0.275 gal - well should "keep up" w/ slower purge rate that will result from using this bailer, plus smaller bailer will reduce surging action that could increase turbidity.

1223 WL = 67.55' - 0.86' recovery in 1 hour. Resume purging.

gal	cond	T	pH	comments
6	1324	73.3	7.64	still turbid but less murky than before - WL 67.88'
7	1324	68.6	7.77	slightly more turbid than @ 6 gal - WL 68.27'

16 Halt purge to allow for well recovery.

1304 WL = 68.00'

To Page No. \_\_\_\_\_

Witnessed & Understood by me, 	Date 4/7/93	Invented by	Date
		Recorded by Karan Kähler	

30 July 1993

Please Reference: 93/9030

Project No.: 300174A

RECEIVED  
AUG 5 1993  
RE OPERATIONS  
DEPT.

Mr. Philip Chandler  
California Regional Water Quality Control Board  
Los Angeles Region  
101 Centre Plaza Drive  
Monterey Park, CA 91754-2156

RE: Second Quarter 1993 groundwater sampling and monitoring at 15006 Nelson Avenue, City of Industry, California

Dear Mr. Chandler:

Enclosed are the results for the June 1993 groundwater monitoring and sampling at 15006 Nelson Avenue in the City of Industry, California. This is the third of four quarterly monitoring and sampling rounds and is part of a year-long program evaluating whether petroleum hydrocarbons discharged from a diesel underground storage tank (removed 1988) have impacted groundwater at the site. The evaluation is being conducted under the direction of the California Regional Water Quality Control Board (CRWQCB), Los Angeles Region. This letter report includes our field observations, a description of the monitoring and sampling procedures, a summary of the laboratory analytical results, and our conclusions.

On 30 June 1993, AeroVironment obtained field measurements of groundwater and collected a groundwater sample for laboratory analysis from Monitoring Well MW-1. Before purging began, a sounding device was used to measure the depth to groundwater and total depth of the well from a notch on the north side of the wellhead. The depth to groundwater was measured at 63.64 feet, and the total well depth was measured at 80.77 feet. No odor, film, or sheen was noted on the well sounding tape or probe after measurement, nor was any odor noted from downhole when the well first was opened.

Well purging began with a check for floating product using a clear bailer. No floating product, sheen, or odor was noted. Purging continued thereafter with a 1.5-inch diameter polyvinyl chloride hand bailer. The purge water was emptied into a 55-gallon drum for storage pending disposal by Northern Trust Bank of California. Approximately 19 gallons were purged from the well over a 5.5-hour period. At no time did drawdown exceed 20 percent of the height of the water column. Purging was halted after 19 gallons so that the well could have time to attain the required 90 percent recovery before the facility closed for the evening.

The table below is a record of parameters measured in the field during the well purge. These parameters include the drawdown (in feet), conductivity (in microsiemens per centimeter, or  $\mu\text{S}/\text{cm}$ ), temperature (in degrees Fahrenheit, or  $^{\circ}\text{F}$ ), and pH (in pH units).

Gallons Purged	Drawdown (feet)	Conductivity ( $\mu\text{S}/\text{cm}$ )	Temperature ( $^{\circ}\text{F}$ )	pH (units)	Comments
0	0.00	1272	72.5	6.13	Clear
1.4	0.95	1237	71.3	6.71	Suspended fines observed throughout purge
2.8	1.66	1234	71.8	6.74	
4.1	2.40	1234	71.9	6.85	
5.5	2.93	1240	72.0	6.84	
6.9	2.86	1242	72.0	6.97	
8.3	2.85	1258	73.4	7.02	
9	2.38	1273	74.5	7.09	
10	2.80	1272	75.0	7.12	
11	3.10	1263	73.8	7.03	
12	2.91	1317	77.8	7.20	
13	2.04	1342	76.4	7.53	
14	2.34	1306	75.8	7.57	
15	2.71	1293	75.0	7.30	
16	3.05	1291	74.4	7.06	
17	3.09	1294	74.6	7.16	
18	3.19	1289	74.9	7.49	
19	3.29	1332	76.2	7.69	

The well recharged at an average rate of 1.7 feet per hour. After the well had recharged to 90 percent of its original level, the groundwater sample was collected with a disposable bailer. A bottom-emptying device was used to decant the groundwater sample into four 40-milliliter glass vials (two vials for each organics analysis) and one 250-milliliter polyethylene bottle (for turbidity analysis). Each of the glass vials had a Teflon-lined septum fitted into its screw cap, and contained hydrochloric acid as a preservative. Each vial was carefully filled until a meniscus formed at its mouth. The container then was capped, inverted, and tapped to check for air bubbles. No bubbles were noted in any of the filled vials. A label that included a unique sample identification number and the date and time of sample collection was attached to each sample container. Immediately after being labeled, the sample was placed in a chilled ice chest. Before leaving the site, AeroVironment personnel placed the well cap and flush-mounted cover back on the well.

With the exception of the disposable bailer, all equipment that came into contact with the groundwater was first scrubbed in a solution of Alconox, double rinsed with tap water, and

Mr. Philip Chandler  
93/9030  
page 3 of 3

given a final rinse with distilled water. The disposable bailer was kept clean by leaving it in its factory packaging until immediately before use.

The chilled sample was transported under standard chain-of-custody protocols to TBD Environmental Laboratories, a state-certified laboratory, for analysis. The sample was analyzed for volatile aromatic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 602, for total petroleum hydrocarbons (TPH) by USEPA Method 8015 (modified for diesel), and for turbidity by USEPA Method 180.1. No VOCs or TPH were detected at concentrations above the analytical reporting limits (1 microgram per liter for VOCs and 1 milligram per liter for TPH). The turbidity level was found to be 70 nephelometric turbidity units (NTUs) when measured immediately after the sample was agitated and 0.1 NTU after the sample was allowed to settle. As the 70 NTU turbidity level exceeds the 50 NTU maximum you have requested in past, the results of this sampling round should be considered a low estimate.

Attached you will find copies of the chain-of-custody form, laboratory report, and field notes. If you have any questions regarding this data submittal or this project, please do not hesitate to call me or Mr. Bill Wyman at (818) 357-9983.

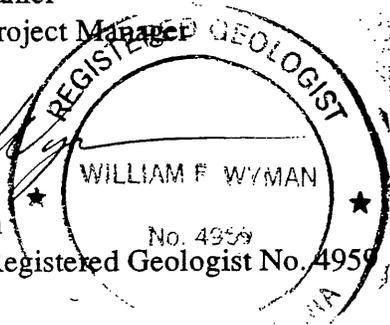
Sincerely,



Karen N. Kahler  
Geologist/Project Manager



Bill Wyman  
California Registered Geologist No. 4959



KNK/BW/ljs  
Attachments

cc: Jeffrey Eisenberg, Northern Trust Bank of California

**ATTACHMENTS**

930704

CHAIN-OF-CUE Y RECORD

**Aero Vironment Inc.**  
 222 East Huntington Drive, P.O. Box 5031  
 Monrovia, California 91017-7131  
 Telephone 818/357-9983  
 FAX 818/359-9628

Send report to the attention of: Karen Kähler NO 0366

AV Project No. 300174A  
 P.O. # 93-0721  
 Sampled by Karen Kähler

Lab Sample Number	AV Sample Number	Date sampled	Time sampled	Type* see key below	Number of containers	Analyses Required										Remarks
						Halogen Volatiles 601/8010	Aromatic Volatiles 602/8020 (C.C. 2)	Purgeables GC/MS 624/8240	TPH 418.1	TPFH Modified 8015 (desd)	Base/Neutral/Acids GC/MS 625/8270	Pesticides/PCB 608/8080	Turbidity 180.1	Hazardous sample Special handling required		
30701A-1	5774	6/30/93	1534	GW	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Perform turbidity analysis first & phone results to Karen Kähler ASAP before proceeding w/ 602 & 8015 M. (818) 357-9980 x326	

Signature	Print Name	Company	Date	Time	*KEY
	Karen Kähler	AV	7/1/93	1205	AQ-Aqueous
	Dodge McArthur	Flod	7.1.93	1206	NA-Nonaqueous
					SL-Sludge
					GW-Groundwater
					SO-Soil
					OT-Other
					PE-Petroleum







tdb environmental laboratories  
2261 Federal Avenue  
Los Angeles, California 90064-1403

Telephone: (310) 478-4050 Fax: (310) 478-8604

**Analytical Laboratory Report**  
**Method 602 - Volatile Aromatics by GC**

Job No. 930701A Client: AeroVironment, Inc.  
Sampled: 6/30/93 Project: 300174A  
Type: Field ID: 5774  
Recvd.: 7/1/93 Matrix: Groundwater  
Prep: 7/6/93 Batch: P484B/PC064  
Method: PAT Dilution: None  
Analyzd: 7/6/93  
By: NG  
Lab ID: 930701A-01

Compound	Concn. Found		Percent Recovery			Reporting Limit	Units
	Sample	Blank	Spike 1	Spike 2	LCS		
	.23R	.13R	930701A-01 .27R	930701A-01 .28R	.33R		
Benzene	BRL	0.10	90	101	94	1	ug/L
Toluene	BRL	0.70	93	105	98	1	ug/L
Ethyl benzene	BRL	0.23	93	107	101	1	ug/L
m,p-Xylene	BRL	0.81	93	107	100	1	ug/L
o-Xylene	BRL	0.23	91	106	96	1	ug/L
Chlorobenzene	BRL	0.11	89	103	96	1	ug/L
1,3-Dichlorobenzene	BRL	ND	91	103	96	1	ug/L
1,4-Dichlorobenzene	BRL	0.95	89	106	112	1	ug/L
1,2-Dichlorobenzene	BRL	0.25	97	108	101	1	ug/L
<b>Surrogate Recovery %</b>							
Fluorobenzene	78	88	72	83	73		
1-Chloro-2-fluorobenzene	68	79	71	81	69		

Notes: LCS - Laboratory Control Standard, ND - Not Detected, BRL - Below Reporting Limit

Comments:

Approved:   
Laboratory Director Date 7/7/93

From Page No.         

0754 I arrive @ site & meet w/ Manual - he'll set up drum by well. I start equipment decom.  
 0809 WL = 63.64' from notch @ t.o.c. } No odor, sheen, or film on tape or probe; no  
 TD = 80.77' " " " " " } chemical odor noted downhole when well first opened  
 WATER COLUMN 17.13'  
 20% drawdown @ 13.70' (WL 67.01') 90% recovery @ 15.42' (WL 65.35')

$$WELL\ VOLUME = \frac{\pi (0.33)^2}{4} (17.13') \times \frac{7.48\ gal}{ft^3} = 11.07\ gal$$

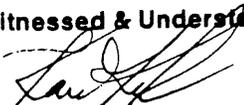
3 WELL VOLUMES = 33.22 gal

0837 pH meter calibrated to standards 7 & 4

0841 First (clear) bailerful - no floating product, sheen, or odor noted

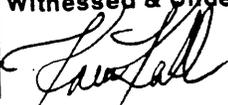
Time	gal	cond (µS/cm)	temp (°F)	pH	comments	WL
0855	0	1272	72.5	6.85	clear	
0902	1.4	1237	71.3	6.71	clear	
0905						64.59
0911	2.75	1234	71.8	6.74	susp. (micaceous?) fines	
0912						65.30
0918	4.1	1234	71.9	6.85	" " "	
0920						66.04
0926	5.5	1240	72.0	6.84	" " "	
0929					Halt purge to allow well recovery	66.57'
0947					Well has recovered to 66.00" - resume purge	
0955	6.9	1242	72.0	6.97	" " "	
0957					Allow recovery	66.50'
1009					Well recovery timed @ 0.05' over 2 minutes = 1.5'/hr. This is considerably faster than last sampling round, but this higher recharge rate is consistent with recovery observed so far today.	
1018					Well recovered to 66', resume purge	
1022	8.25	1258	73.4	7.02	" " "	
1025					Allow recovery	66.49'
1043					Well recovered to 66', resume purge. Have been considering 5 bailerful to be approx. 1 gal, but calculations from last round indicate 4 bailers/gal is more accurate. Purge volumes above changed accordingly; will continue w/ 4 bailers/gal hereafter.	
1057	9	1273	74.5	7.09	" " "	
1100						66.02'
1105	10	1292	75.0	7.12	" " "	
1107						66.44'

To Page No. 12

Witnessed & Understood by me, 	Date 6/30/93	Invented by	Date
		Recorded by Karen Kähler	

From Page No.	gal	EC	temp	pH	comments	wt	
1114	11	1263	73.8	7.03	suspended (micaceous?) fines; w/ will not purge		
1116	Allow recovery					→	66.74
1137	Well has recharged to 66.20'; resume purge						
1145	12	1317	77.8	7.20	" " "		
1147							66.55
1153	Almost 13 gal - on 4 <sup>th</sup> bailer, lost it downhole.						
1158	I leave site for hardware store						
1238	I return w/ "fishing supplies" & try to retrieve bailer - YES!						
1240	13	1342	76.4	7.53	" " "		
1243							65.68'
1258	14	1306	75.8	7.57	" " "		
1300							65.98'
1309	15	1293	75.0	7.30	" " "		
1310							66.35'
1316	16	1291	74.4	7.06	" " "		
1317	Allow recovery					→	66.69'
1327	Well has recovered to 66.50'; resume purge						
1333	17	1294	74.6	7.16	" " "		
1335	Allow recovery					→	66.73'
1339	Recharge rate measured @ 0.05' / 100 sec = 1.8' / hr.						
1343	Well has recovered to 66.60'; resume purge.						
1350	18	1289	74.9	7.49	" " "		
1352	Allow recovery					→	66.83'
1400	Well has recovered to 66.60'; resume purge.						
1411	19	1332	76.2	7.69	" " "		
1413	If purge stops now, recovery will reach 90% by approx 15:06.						66.93'
END PURGE (need to sample, decon & leave before gates are locked @ 16:00)							
1522	Well has recovered to 65.30' (> 90%) - collect sample. Fines still precipitating from Imhoff core sample. Approx 650ml water w/ 0.5ml clay w/ trace silt.						
1534	Sample collected from MW-1. Conductivity (1397 $\mu$ S/cm), temp (77.9 °F), & pH (7.48) measured on first ("rinse") bailer fill. Disposable bailer being used. Suspended fines still present.						
1556	I leave site.						

To Page No. \_\_\_\_\_

Witnessed & Understood by me, 	Date 6/30/93	Invented by Karen Kähler	Date _____
	Recorded by Karen Kähler		

14 October 1993

Please Reference: 93/9035  
Project No.: 300174A

Mr. Philip Chandler  
California Regional Water Quality Control Board  
Los Angeles Region  
101 Centre Plaza Drive  
Monterey Park, CA 91754-2156

RE: Third Quarter 1993 groundwater sampling and monitoring at 15006 Nelson Avenue, City of Industry, California

Dear Mr. Chandler:

Enclosed are the results for the September 1993 groundwater monitoring and sampling at 15006 Nelson Avenue in the City of Industry, California. This is the fourth of four quarterly monitoring and sampling rounds and is part of a year-long program evaluating whether petroleum hydrocarbons discharged from a diesel underground storage tank (removed 1988) have impacted groundwater at the site. The evaluation is being conducted under the direction of the California Regional Water Quality Control Board (CRWQCB), Los Angeles Region. This letter report includes our field observations, a description of the monitoring and sampling procedures, a summary of the laboratory analytical results, and our conclusions.

On 24 September 1993, AeroVironment obtained field measurements of groundwater and collected a groundwater sample for laboratory analysis from Monitoring Well MW-1. Before purging began, a sounding device was used to measure the depth to groundwater and total depth of the well from a notch on the north side of the wellhead. The depth to groundwater was measured at 63.02 feet, and the total well depth was measured at 80.80 feet. No odor, film, or sheen was noted on the well sounding tape or probe after measurement, nor was any odor noted from downhole when the well first was opened.

Well purging began with a check for floating product using a clear bailer. No floating product, sheen, or odor was noted. Purging continued thereafter with a 1.5-inch diameter polyvinyl chloride hand bailer. The purge water was emptied into a 55-gallon drum for storage pending disposal by Northern Trust Bank of California. Approximately 35 gallons (just over 3 well volumes) were purged from the well over a 4.5-hour period. At no time did drawdown exceed 20 percent of the height of the water column. Purging was halted after 35 gallons so that the well

could have time to attain the required 90 percent recovery before the facility closed for the afternoon.

The table below is a record of parameters measured in the field during the well purge. These parameters include the drawdown (in feet), conductivity (in microsiemens per centimeter, or  $\mu\text{S}/\text{cm}$ ), temperature (in degrees Fahrenheit, or  $^{\circ}\text{F}$ ), and pH (in pH units).

Gallons Purged	Drawdown (feet)	Conductivity ( $\mu\text{S}/\text{cm}$ )	Temperature ( $^{\circ}\text{F}$ )	pH (units)	Comments
0	0.00	1269	67.0	7.89	
1	0.46	1199	67.2	7.68	
2	0.96	1223	67.9	7.21	
3	1.48	1241	68.3	7.04	
4	1.94	1213	68.2	6.93	
5	2.42	1211	68.8	6.92	
6	2.86	1229	69.5	6.89	
7	3.31	1239	69.6	6.84	
8	3.63	1258	70.6	6.86	Increasing micaceous fines
9	3.18	1277	72.0	6.96	Suspended micaceous fines
10	3.47	1287	70.0	6.83	Suspended micaceous fines
11	3.60	1318*	69.7	6.82	Suspended micaceous fines
12	3.73	1334*	69.4	6.79	Suspended micaceous fines
13	3.86	1327*	70.5	6.87	Suspended micaceous fines
14	2.71	1339*	72.3	7.03	Suspended micaceous fines
15	2.91	1342*	70.6	7.07	Suspended micaceous fines
20	3.53	1366*	70.2	7.00	Bailer tagged bottom-- turbid
25	1.08	1520*	71.7	6.97	Suspended fines
30	1.54	1465*	70.7	7.06	Suspended fines
35	1.69	1527*	70.9	7.03	Suspended fines, clearing

\* Instrument readings fluctuating, presumably due to suspended material

The well recharged at an average rate of 4.2 feet per hour. After the well had recharged to its original level, the groundwater sample was collected with a disposable bailer. A bottom-emptying device was used to decant the groundwater sample into four 40-milliliter glass vials (two vials each for volatile aromatics and turbidity analyses) and one 1-liter amber glass bottle (for total petroleum hydrocarbons (TPH) analysis). Each of the glass vials had a Teflon-lined septum fitted into its screw cap. Hydrochloric acid was added as a preservative to the vials intended for volatile aromatics analysis. Each container was carefully filled until

Mr. Philip Chandler

93/9035

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a meniscus formed at its mouth. The container then was capped, inverted, and tapped to check for air bubbles. No bubbles were noted in any of the filled containers. A label that included a unique sample identification number and the date and time of sample collection was attached to each sample container. Immediately after being labeled, the sample was placed in a chilled ice chest. Before leaving the site, AeroVironment personnel placed the well cap and flush-mounted cover back on the well.

With the exception of the disposable bailer, all equipment that came into contact with the groundwater was first scrubbed in a solution of Alconox, double rinsed with tap water, and given a final rinse with distilled water. The disposable bailer was kept clean by leaving it in its factory packaging until immediately before use.

The chilled sample was transported under standard chain-of-custody protocols to TBD Environmental Laboratories, a state-certified laboratory, for analysis. The sample was analyzed for volatile aromatic compounds by United States Environmental Protection Agency (USEPA) Method 602, for TPH by USEPA Method 8015 (modified for diesel), and for turbidity by USEPA Method 180.1. No volatile aromatics or TPH were detected at concentrations above the analytical reporting limits (1 microgram per liter ( $\mu\text{g/L}$ ) for volatile aromatics and 0.1 milligram per liter ( $\text{mg/L}$ ) for TPH). The turbidity level was found to be 130 nephelometric turbidity units (NTU) when measured immediately after the sample was agitated. As the 130 NTU turbidity level exceeds the 50 NTU maximum you have requested in past, the results of this sampling round should be considered a low estimate.

This sampling round represents the conclusion of one year of quarterly monitoring at the Nelson Avenue site. A summary of the analytical results from the four sampling rounds:

#### Analytical Results

Sample Number	Date Sampled	Turbidity (NTU)	Volatile Aromatics ( $\mu\text{g/L}$ )	TPH as Diesel ( $\text{mg/L}$ )
7620	11/9/92	24	<1	<1
6900	4/7/93	77	<1	<1
5774	6/30/93	70	<1	<1
5769	9/24/93	130	<1	<0.1

No volatile aromatic compounds or diesel hydrocarbons have been detected in samples from any of the quarterly sampling rounds. We would appreciate your expeditious response concerning the future disposition of this monitoring well.

Mr. Philip Chandler  
93/9035  
page 4 of 4

Attached you will find copies of the chain-of-custody form, laboratory report, and field notes. If you have any questions regarding this data submittal or this project, please do not hesitate to call me or Mr. Bill Wyman at (818) 357-9983.

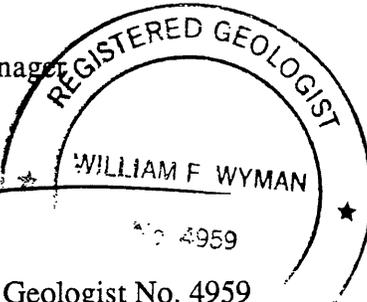
Sincerely,



Karen N. Kahler  
Geologist/Project Manager



Bill Wyman  
California Registered Geologist No. 4959



KNK/BW/ljs  
Attachments

cc: Jeffrey Eisenberg, Northern Trust Bank of California  
Nicole Long, Los Angeles County Department of Public Works

**ATTACHMENTS**

9304245

CHAIN-OF-CUS RECORD

**Aero Vironment Inc.**  
 222 East Huntington Drive, P.O. Box 5031  
 Monrovia, California 91017-7131  
 Telephone 818/357-9883  
 FAX 818/359-9628

Send report to the attention of: Karen Kähler

No: 0600

AV Project No. 300174A  
 P.O. # 93-146  
 Sampled by Karen Kähler

Lab Sample Number	AV Sample Number	Date Sampled	Depth	Flow	Number of containers	Analyses Required										Remarks
						Halogen Volatiles 601/8010	Aromatic Volatiles 607/8000	Purgeables GC/MS 624/8240	TPH 418.1	TPFH Modified 8015 (dield)	Base/Neutrals/GC/MS 625/8270	Pesticides/PCB 608/8080	Turbidity 180.1	Hazardous sample required	Special handling required	
30024D-1	5769	9/24/93		SW	56	X	X	X	X	X	X	X	X			Perform turbidity analysis first of phone results to Karen Kähler ASAP before proceeding w/ 602 & 8015m. (818)357-9980 x326
-2																
-3																
3 Du																

Preserved w/ HCl  
 9/24/93 PUC

Signature	Print Name	Company	Date	Time	*KEY
	Karen Kähler	AV	9/24/93	1330	AQ-Aqueous
	Dodge Maguire	TBD	9.24.93	1357	NA-Nonaqueous
					SL-Sludge
					GW-Groundwater
					SO-Soil
					OT-Other
					PE-Petroleum







tbd environmental laboratories  
 2261 Federal Avenue  
 Los Angeles, California 90064-1403

Telephone: (310) 478-4050 Fax: (310) 478-8604

**Analytical Laboratory Report**  
**Method 602 - Volatile Aromatics by GC**

Job No. 930924D Client: AeroVironment, Inc.  
 Sampled: 9/24/93 Project: 300174A  
 Type: Field ID: 5769  
 Recvd.: 9/24/93 Matrix: Aqueous  
 Prep: 9/30/93 Batch: P543F  
 Method: PAT  
 Analyzd: 9/30/93 Dilution: None  
 By: NG  
 Lab ID: 930924D-01

Compound	Concn. Found		Percent Recovery			Reporting Limit	Units
	Sample	Blank	Spike 1	Spike 2	LCS		
	030F3001	026F2601	930923C-01 032F3201	930923C-01 033F3301	027F2701		
Benzene	BRL	ND	80	99	75	1	ug/L
Toluene	BRL	0.22	80	93	80	1	ug/L
Ethyl benzene	BRL	0.17	83	95	81	1	ug/L
m,p-Xylene	BRL	0.23	83	96	83	1	ug/L
o-Xylene	BRL	ND	82	93	80	1	ug/L
Chlorobenzene	BRL	ND	80	91	77	1	ug/L
1,3-Dichlorobenzene	BRL	ND	84	93	82	1	ug/L
1,4-Dichlorobenzene	BRL	ND	85	97	85	1	ug/L
1,2-Dichlorobenzene	BRL	0.18	88	96	86	1	ug/L
<b>Surrogate Recovery %</b>							
Fluorobenzene	96	70	82	100	94		
1-Chloro-2-fluorobenzene	89	68	83	98	92		

Notes: LCS - Laboratory Control Standard, ND - Not Detected, BRL - Below Reporting Limit

Comments:

Approved: *Robert. [Signature]* 9/30/93  
 Laboratory Director Date

Form Page No. 12

0706 I arrive @ site. Gates unlocked but I don't see anybody else here. I begin equipment down.  
 0730 WL = 63.02' from notch @ t.o.c. } No odor, sheen, or film noted on top or probe;  
 TD = 80.80' " " " " } no chemical odor noted downhole when well first opened  
 Water column 17.78'  
 20% drawdown @ 13.70' (WL = 67.10')  
 90% recovery @ 16.00' (WL = 64.8')  
 Well volume =  $\frac{\pi (0.33)^2}{4} (17.78') \cdot \frac{7.48 \text{ gal}}{\text{ft}^3} = 11.37 \text{ gal}$   
 3 well volume = 34.11 gal.

0796 pH meter calibrated to standards 7 & 10.

0800 First (clear) bailerful - no floating product sheen, or odor noted. Imhoff cone collected.

Time	gal	cond. (µS/cm)	temp (°F)	pH	comments
0809	0	1269	67.0	7.89	clear
0813	1	$\frac{9249 + 215}{9} = 1199$	67.2	7.68	clear
0814					WL = 63.48'
0819	2	1223	67.9	7.21	clear
0821					WL = 63.98'
0825	3	1241	68.3	7.04	clear
0827					WL = 64.50'
0833	4	1213	68.2	6.93	clear
0835					WL = 64.96'
0840	5	1211	68.8	6.92	clear
0842					WL = 65.44'
0847	6	1229	69.5	6.89	clear
0849					WL = 65.88'
0854	7	1239	69.6	6.84	clear
0856					WL = 66.33'
0900	8	1258	70.6	6.86	increasing micaceous fines
0902					allow recovery → WL = 66.65'
0918					WL @ 66.0' - resume purge
0923	9	1277	72.0	6.96	suspended micaceous fines
0925					WL = 66.20'
0929	10	1287	70.0	6.83	suspended micaceous fines
0931					WL = 66.49'
0935	11	1318*	69.7	6.82	suspended micaceous fines
0938					WL = 66.62' To Page No. _____

Witnessed & Understood by me.

*[Signature]*

Date 9/24/93

Invented by

Recorded by Karen Kähler

Date

Time	Volume (gal)	Cond	T	pH	Comments
0943	12	1334*	69.4	6.79	suspended micaceous fines
0945					WL = 66.75'
0949	13	1327*	70.5	6.87	suspected micaceous fines
0951	Allow recovery				WL = 66.88'
1004	WL @ 66.0' - resume purge. (Current recovery rate approx. 0.05' over 42 seconds, or 0.07'/min = 4.2 ft/hr - much faster recharge than previously.)				
1015	14	1339*	72.3	7.03	suspended micaceous fines
1017					WL = 65.73'
1022	15	1342*	70.6	7.07	susp. mic. fines
1024					WL = 65.93'
With the improved recharge rate, it should be possible to purge 3 well volumes before the facility closes this afternoon (3:30 pm). Frequency of WL measurements during purge will be reduced - less concern that well will exceed 20% drawdown. ec/T/pH measurements will be conducted w/ same frequency as WL check (every 5 gal.)					
1052	20	1366	70.2	7.00	turbid (bailer free-fell during purge of 20th gal., stirred up silt in well)
1054	Allow recovery				WL = 66.55'
<lunch break>					
1122	End break - WL = 63.20'. Resume purge.				
1143	25	1520*	71.1	6.97	suspended fines
1145					WL = 64.10'
1202	30	1465*	70.7	7.06	suspended fines
1205					WL = 64.56'
1222	35	1527*	70.9	7.03	suspended fines clearing
1224					WL = 64.71'
End purge - just over 3 well volumes purged & drum's full (didn't anticipate almost threefold increase in recovery rate, so didn't bring additional containment for purge water). Recovery is already sufficient for sampling. Call lab to arrange new pickup time/location					
1245	Well's reached 100% recovery. Had lab pickup @ 13:30.				
1313	Sample 5769 collected from M/W-1. Conductivity (1350 $\mu\text{S}/\text{cm}^*$ ) temp. (73.4°F) & pH (7.09) measured on first ("rinse") bailful. Disposable bailer being used. Susp. micaceous fins in sample.				
Sample picked up by TBD Lab courier.					
1414	Decon complete. No fines settled out of Imhoff cone sample. I leave site.				

\* Conductivity reading not stabilizing

To Page No. \_\_\_\_\_

Witnessed &amp; Understood by me,

Date

Invented by

Date



9/24/93

Recorded by

Karen Kähler