SOIL AND GROUNDWATER INVESTIGATION

Guy's Diesel
3820 San Leandro Street
Oakland, California

August 10, 1998
Project No. 581.2

Brunsing Associates, Inc.

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August 10, 1998

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Mr. Kelly Engineer
All Star Inc.
1791 Pine Street
Concord, California 94520

Subject: **Soil and Groundwater Investigation**
Guy's Diesel, 3820 San Leandro Street, Oakland, California

Dear Mr. Engineer:

Please find enclosed the Report of Findings (ROF) prepared on your behalf. This ROF documents the soil and groundwater investigation completed by BACE Environmental, a division of Brunsing Associates, Inc. (BAI), at Guy's Diesel located at 3820 San Leandro Street, Oakland, California.

If you have any questions, please contact Joel Bruxvoort at (415) 391-6840.

Respectfully Submitted,

for

Tom Allan
Staff Environmental Engineer

Attachments:

cc:
Mr. Hernan Gomez, Hazardous Materials Inspector, Oakland Fire Services Agency, 505 Fourteenth Street, Suite 702, Oakland, California 94612

Mr. Barney Chan, Hazardous Materials Specialist, Alameda County Environmental Health Services, 1131 Harbor Bay Parkway, Suite 250, Alameda, California 94502-6577

Mr. Robert F. Chambers, Senior Deputy District Attorney, Consumer Environmental Protection Division, 7677 Oakport Street, Oakland, California 94621

Soil and Groundwater Investigation

Guy's Diesel
3820 San Leandro Street
Oakland, California

prepared for:

Mr. Kelly Engineer
All Star, Inc.
1791 Pine Street
Concord, California 94520

prepared by:

BACE Environmental,
a division of
Brunsing Associates, Inc.
760 Market Street, Suite 344
San Francisco, California 94102
BACE Environmental Project No. 581.2

Author: for
Tom Allan
Staff Environmental Engineer

Reviewer:
Diana M. Dickerson, R.E.A, R.G.
Senior Geologist

REGISTERED GEOLOGIST
DIANA M. DICKERSON
NO. 6013
STATE OF CALIFORNIA

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1.0 INTRODUCTION

BACE Environmental, a division of Brunsing Associates, Inc. (BAI) has prepared this Report of Findings (ROF) on behalf of Guy's Diesel located at 3820 San Leandro Street, Oakland, California. The ROF addresses requirements of the Alameda County Environmental Health Services (ACEHS) that a soil and groundwater investigation at the former underground storage tank (UST) site be performed. This investigation was completed according to a workplan dated April 9, 1998, and workplan addendum dated May 4, 1998, prepared by BAI. The soil sampling plan is intended to comply with the request for additional samples, as specified in a letter dated March 6, 1998, from Mr. Hernan Gomez, Hazardous Materials Inspector for the City of Oakland, Fire Services Agency (OFSA). The plan for monitoring well installation is intended to comply with ACEHS' request for a soil and groundwater investigation, as outlined in the March 11, 1998 letter from Mr. Barney Chan, Hazardous Materials Specialist, and revisions requested in Mr. Chan's letter dated April 23, 1998. A site vicinity map is included as Plate 1.

The trustee of the site is Mr. Kelly Engineer, who can be contacted at 1791 Pine Street, Concord, California 94520, and by telephone at (510) 674-9798.

2.0 UNDERGROUND TANK REMOVAL AND SOIL DISPOSAL

It is our understanding that four UST's (two diesel fuel and two gasoline) were excavated and removed from the site on January 20, 1998. At that time, 5 soil samples were collected for laboratory analysis from the tank excavation. Tank removal and sampling procedures and sampling results are documented in American Consulting Remediation and Construction's (ACRC's) "Tank Closure Report" for the site. Soil sampling locations are shown on the site map (Plate 2). A summary of the analytical results for the soil samples collected during the removal of the tanks are presented in Table 1.

The soil removed from the underground tank excavation was stockpiled on site. Stockpile samples were collected and submitted for analysis to allow for characterization for landfill disposal. It is also our understanding that the soils were transported by Den Beste Transportation, under non-hazardous waste manifest, to Forward Landfill, a licensed Class II facility, for disposal. BAI has advised the site owner to forward copies of the landfill disposal documentation to the OFSA and ACEHS following receipt.

3.0 SCOPE OF WORK

The current investigation included the following:

- Drilling six soil borings (B-1, B-2, B-5, B-6, B-7, and B-8) at the locations shown on Plate 2;
- Installation of three groundwater monitoring wells (MW-1, MW-2 and MW-3) at the locations shown on Plate 2;
- Collection and analysis of soil samples from well and soil boring locations for Total Petroleum Hydrocarbons (TPH) as gasoline, TPH as diesel, benzene, toluene, ethylbenzene and xylenes (BTEX), and methyl tertiary butyl ether (MTBE);
- Development of wells MW-1, MW-2 and MW-3;
- Collection and analysis of groundwater samples from wells MW-1, MW-2, and MW-3 for TPH as gasoline, TPH as diesel, BTEX, and MTBE;
- Collection and analysis of a groundwater sample from a PVC pipe and well screen that was placed in the tank excavation before the excavation was backfilled with pea gravel. Analysis includes TPH as gasoline, TPH as diesel, BTEX, and MTBE.
- Preparation of this Report of Findings documenting the results of the investigation.

4.0 FIELD INVESTIGATION

4.1 Drilling and Soil Sampling

Prior to drilling, BAI staff obtained a drilling permit from the County of Alameda for all wells and borings at the site. In addition, an encroachment and excavation permits were obtained from the City of Oakland for one well (MW-2) located in the 39th Street right-of-way adjacent to the site.

On July 1 and 2, 1998, BAI collected soil samples from soil borings B-1, B-2, B-5, B-6, B-7, and B-8 and from the borings for wells MW-1, MW-2, and MW-3, which were drilled and sampled to evaluate the extent of soil contamination in the vicinity of the former UST locations. Soil borings B-1, B-2, B-5, B-6, B-7, and B-8 were completed to depths of 11.5, 16.5, 16.5, 7.0, 7.0, and 11 feet, respectively. The borings for wells MW-

1, MW-2, and MW-3 were completed to depths of 21.5, 21.5, and 21.0 feet, respectively. The soil borings were drilled by Bayland Drilling, a C-57 licensed driller using a drill rig equipped with eight-inch diameter hollow-stem augers. The borings were logged by a qualified geologist using the Unified Soil Classification System (USCS) to adequately describe the subsurface soils. Boring logs were completed documenting the soil type, sample depths, the depth of the saturated/unsaturated interface, and the presence of any soil odor. The boring logs are included in Appendix A.

All soil samples collected while drilling were collected according to the California State Water Resources Control Board's Leaking Underground Fuel Tank (LUFT) guidelines. Soil samples were collected for logging approximately every five feet. Undisturbed soil samples for chemical analysis were obtained using a split-spoon sampler lined with two-inch diameter brass tubes. The ends of each tube were covered with aluminum foil and polyethylene caps immediately after sampling. The samples were labeled, sealed in individual zip-lock plastic bags, and kept in an insulated cooler containing blue ice. The soil samples were transported under chain-of-custody procedures to BACE Analytical Field Services (BAFS), a State-certified laboratory, for analysis.

All sampling equipment was decontaminated before sampling by either steam cleaning or using the triple rinse procedure described below:

- Water and non-phosphate detergent wash;
- Water rinse;
- Purified water, final rinse.

Borings B-1, B-2, B-5, B-6, B-7, and B-8 were backfilled with a cement/bentonite grout. Drill cuttings from advancing the borings are temporarily stored onsite in six 55-gallon drums labeled according to the ACEHS guidelines. Decontamination water and purged water from well development and sampling was also placed in a sealed drum and left onsite. BAI is arranging drum disposal with Integrated Wastestream Management (IWM), a licensed disposal facility. BAI anticipates the drums will be removed from the site during the month of August 1998.

4.2 Monitoring Well Installation

The locations of monitoring wells MW-1, MW-2, and MW-3 are shown on Plate 2. The monitoring wells were installed according to State and Alameda County guidelines for monitoring well construction. The wells were constructed using two-inch diameter, Schedule 40 PVC, with 0.020 inch slotted screen joined by flush threads. The well screen lengths are 15 feet, and extend from a depth of five to twenty feet below ground surface (bgs). The bottom of each casing was capped with a threaded PVC cap. Sufficient blank PVC casing was used above the well screen to

extend to the ground surface. A filter pack of Lonestar #3 sand was placed around the screen to one foot above the top of the screen. Bentonite pellets were placed on the sand and hydrated to complete a transition seal of approximately one foot. The boring of each well was then grouted to the surface using a cement/bentonite grout. The wells were secured with a locking well cap and finished with a flush-mounted traffic rated utility box, stabilized with cement. The well completion details are included on the boring logs in Appendix A.

The well casing elevations were surveyed relative to mean sea level (MSL) on July 16, 1998 by BAI personnel. The well casing elevations (surveyed at the north edge of the casings) are 27.54, 25.97, and 26.52 feet relative to MSL for wells MW-1, MW-2 and MW-3, respectively. The monument elevations (surveyed at the north edge where the existing grade meets the monument) are 27.84, 26.44, and 26.79 feet relative to MSL for wells MW-1, MW-2, and MW-3, respectively.

4.3 Well Development and Groundwater Sampling Procedures

Wells MW-1, MW-2 and MW-3 were developed on July 6, 1998 using a surge block and bailing. The groundwater was surged and subsequently purged until silting was reduced and pH, conductivity, and temperature measurements were relatively stabile in the purged water.

The wells were allowed to recover for several hours. Wells MW-1 and MW-2 recovered to within ninety percent of the initial water level within two hours. Well MW-3 recovered to within 50 percent of initial water level before sampling. Wells MW-1, MW-2, and MW-3 were sampled on July 6, 1998, several hours after well development. Prior to sampling, the wells were tested for the presence of free product by using a clear bailer; no free product was found in the wells, however, a petroleum hydrocarbon odor was noticed at each well location.

On July 2, a groundwater sample was also collected from a PVC pipe and well screen that was previously placed in the tank excavation before backfilling with pea gravel. This water sample is identified as W-1.

Water samples were transferred from the bailer to the sample containers using a volatile organic compounds (VOCs) sampling port to minimize the disturbance of the water sample and loss of volatile compounds. Sample containers were labeled with the project number, sample number, date, and time using waterproof ink. Immediately following labeling, the samples were placed in a cooler containing frozen blue ice for transportation under chain-of-custody procedures to BAFS.

4.4 Soil and Groundwater Chemical Analysis

The soil and groundwater samples were analyzed for the analytes listed below:

TPH as gasoline	EPA Test Method 5030/8015 (GC/FID);
TPH as diesel	EPA Test Method 5030/8015 (GC/FID);
BTEX	EPA Test Method 8020;
MTBE	EPA Test Method 8020.

In addition, the water sample from well MW-3 was analyzed for MTBE by Method 8260 to confirm the presence of MTBE.

5.0 RESULTS OF SOIL AND GROUNDWATER INVESTIGATION

The analytical results for soil and groundwater samples collected during this investigation are presented in Tables 2 and 3, respectively. A copy of the analytical data reports and chain-of-custody forms are provided in Appendix B.

5.1 Soil Analytical Results

Detectable TPH as gasoline concentrations in soil ranged from 1.0 to 830 milligrams per kilogram (mg/kg). The highest reported soil concentrations of TPH as gasoline were reported in the 11-foot soil samples collected at borings MW-3, B-1, and B-2, at concentrations of 830, 330 and 650 mg/kg, respectively. The maximum concentration of TPH as gasoline in soil at each boring location is shown on Plate 3.

Detectable TPH as diesel concentrations in soil ranged from 6.7 to 3,300 mg/kg. The highest reported concentrations were in soil samples collected from 11 feet below ground surface (bgs) in borings B-2 and MW-3. The maximum concentrations of TPH as diesel in soil at each boring location is shown on Plate 4.

Components of BTEX were reported in all soil samples collected, except the soil samples collected at 11 feet bgs from the borings for wells MW-1 and MW-2. Benzene was reported in all soil samples except the soil samples collected from MW-1 at 11 feet, MW-2 at 11 feet, MW-2 at 16 feet, and B-1 at 6 feet.

Detectable concentrations of MTBE were reported in all soil samples, except the soil samples collected from the borings for wells MW-1 and MW-2, and from borings B-1 at 6 feet, B-5 at 16 feet, and B-6 at 7 feet. Detected MTBE concentrations ranged from 100 to 6,800 micrograms per kilogram (µg/kg).

5.2 Groundwater Analytical Results

Detectable concentrations of TPH as gasoline were reported in all groundwater samples collected, ranging from 1.3 milligrams per liter (mg/l) to 36 mg/l. The highest reported concentration was reported at well MW-3. TPH as gasoline concentrations in groundwater at each location is shown on Plate 3. TPH as diesel was not reported in any of the groundwater samples collected.

Benzene was reported in all groundwater samples collected at concentrations ranging from 36 to 6,700 micrograms per liter (µg/l). The highest reported benzene concentration in groundwater occurred at well MW-3. Other components of BTEX were also reported in all groundwater samples collected.

MTBE was also reported in all of the groundwater samples. Reported MTBE concentrations ranged from 80 to 13,000 µg/l. The highest MTBE concentration in groundwater was reported in the sample from well MW-3. The presence of MTBE in the groundwater sample from well MW-3 was confirmed by analysis using EPA Test Method 8260M.

6.0 EVALUATION OF SITE HYDROGEOLOGY

6.1 Site Soils

The native soils encountered during drilling of the borings generally consisted of low permeable silts and clays to depths of approximately 11 feet. Several of the borings (MW-1, B-2 and B-5) had a more permeable silty sand/gravel or sandy clay zone at an approximate depth of 11 feet and below. Generally, the only permeable soils observed were at a depth of approximately 12 feet where soils appeared to be the wettest.

6.2 Groundwater Flow Direction

The depth to groundwater in wells MW-1, MW-2, and MW-3 were 7.77, 8.15, and 8.42 feet, respectively on July 6, 1998. The calculated groundwater elevations for the three wells indicate a groundwater flow direction to the south, as shown on Plate 7. The groundwater gradient on July 6, 1998 was 0.04 foot per foot.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The results of this investigation indicate that a release of petroleum hydrocarbons from the former UST's has occurred. The area of greatest impact to soil appears to be near the location of well MW-3 and boring B-2. TPH as diesel was not reported in

any of the groundwater samples collected, however, TPH as gasoline was reported in all of the groundwater samples.

BAI recommends initiating a groundwater monitoring program at the site to evaluate the groundwater flow direction and whether additional drilling or well installation is necessary. Analysis of groundwater samples should include TPH as gasoline, TPH as diesel, BTEX, and MTBE.

8.0 STATEMENT OF QUALIFICATIONS

The manager of this project was Mr. Joel Bruxvoort under the direct supervision of Ms. Diana Dickerson, a registered geologist in the State of California. The final report of findings is signed and stamped by Ms. Dickerson.

9.0 DISTRIBUTION

Copies of this document have been submitted to the following individuals and agencies.

Mr. Kelly Engineer — Original plus one copy
All Star Inc.
1791 Pine Street
Concord, California 94520

Mr. Hernan Gomez — 1 copy
Hazardous Materials Inspector
Oakland Fire Services Agency
505 Fourteenth Street, Suite 702
Oakland, California 94612

Mr. Barney Chan — 1 copy
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Mr. Robert F. Chambers — 1 copy
Senior Deputy District Attorney
Consumer Environmental Protection Division
7677 Oakport Street
Oakland, California 94621

TABLES

Table 1
Analytical Results for Tank Removal Samples
Guy's Diesel, 3820 San Leandro Street, Oakland, California

Descriptor	TPH-diesel (mg/kg)	TPH-gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total Lead (mg/kg)
#1	180	34	0.11	<0.05	0.12	0.24	nr
#2	3,200	2,600	34	5.3	47	170	nr
#3	3,700	1,400	5.0	3.5	26	6.5	nr
#4	11	170	0.88	0.48	1.5	0.71	nr
#5	510	130	0.82	0.42	2.2	8.6	nr
Comp. (A,B, C)	1,700	260	0.16	0.40	1.0	4.2	nr
Comp. (D,E,F)	1,200	750	0.14	0.34	1.5	7.0	nr
Comp. (1,2,3,4)	180	2.6	<0.005	<0.005	<0.005	<0.005	3.4
Comp. (5,6,7,8)	500	220	<0.0625	<0.0625	<0.0625	1.4	5.3
Comp. (9,10,11,12)	450	79	<0.125	<0.125	<0.125	0.87	nr

Comp. samples are 4-point composite stockpile samples.
mg/kg = milligrams per kilogram which is essentially equivalent to parts per million (ppm).
nr = Analysis not requested.
TPH = Total Petroleum Hydrocarbons
MTBE = Methyl tert Butyl Ether

Table 2
Current Investigation Soil Analytical Results
Guy's Diesel, 3820 San Leandro Street, Oakland, California

Date	Descriptor	TPH-gasoline (mg/kg)	TPH-diesel (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)
7/2/98	MW-1-11'	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<50
7/2/98	MW-1-16'	<1.0	<1.0	10	<5.0	8.9	<5.0	<50
7/2/98	MW-2-11'	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<50
7/2/98	MW-2-16'	3.0	<1.0	<5.0	8.3	10	15	<50
7/2/98	MW-3-11'	830	2,500	11,000	4,400	19,000	22,000	6,800 ← near GW
7/2/98	MW-3-16'	<1.0	<1.0	170	7.9	24	24	220
7/1/98	B1-6'	<1.0	<1.0	<5.0	<5.0	10	300	<50
7/1/98	B1-11'	330	120	460	2,200	1,800	3,400	2,200
7/1/98	B2-6'	12	230	18	50	87	33	100
7/1/98	B2-11'	650	3300	1,100	5,100	3,800	4,400	1,600
7/1/98	B2-16'	2.3	6.7	9.6	10	13	14	100
7/1/98	B5-7'	<1.0	<1.0	18	<5.0	<5.0	<5.0	100
7/1/98	B5-12'	210	200	470	2,500	2,600	3,000	1,900
7/1/98	B5-16'	1.0	<1.0	100	17	24	38	<50
7/1/98	B6-3'	4.2	<1.0	54	27	6.7	24	300
7/1/98	B6-7'	<1.0	<1.0	14	<5.0	<5.0	7.9	<50
7/1/98	B7-3'	14	110	90	43	10	30	1,000
7/1/98	B7-7'	70	610	92	360	260	1,700	1,300
7/1/98	B8-7'	190	760	1,300	4,000	4,600	22,000	5,400
7/1/98	B8-11'	90	140	1,100	190	1,200	4,700	1,900

B

Notes:

mg/kg = milligrams per kilogram which is essentially equivalent to parts per million (ppm).

µg/Kg = micrograms per kilogram which is essentially equivalent to parts per billion (ppb).

TPH = Total petroleum hydrocarbons.

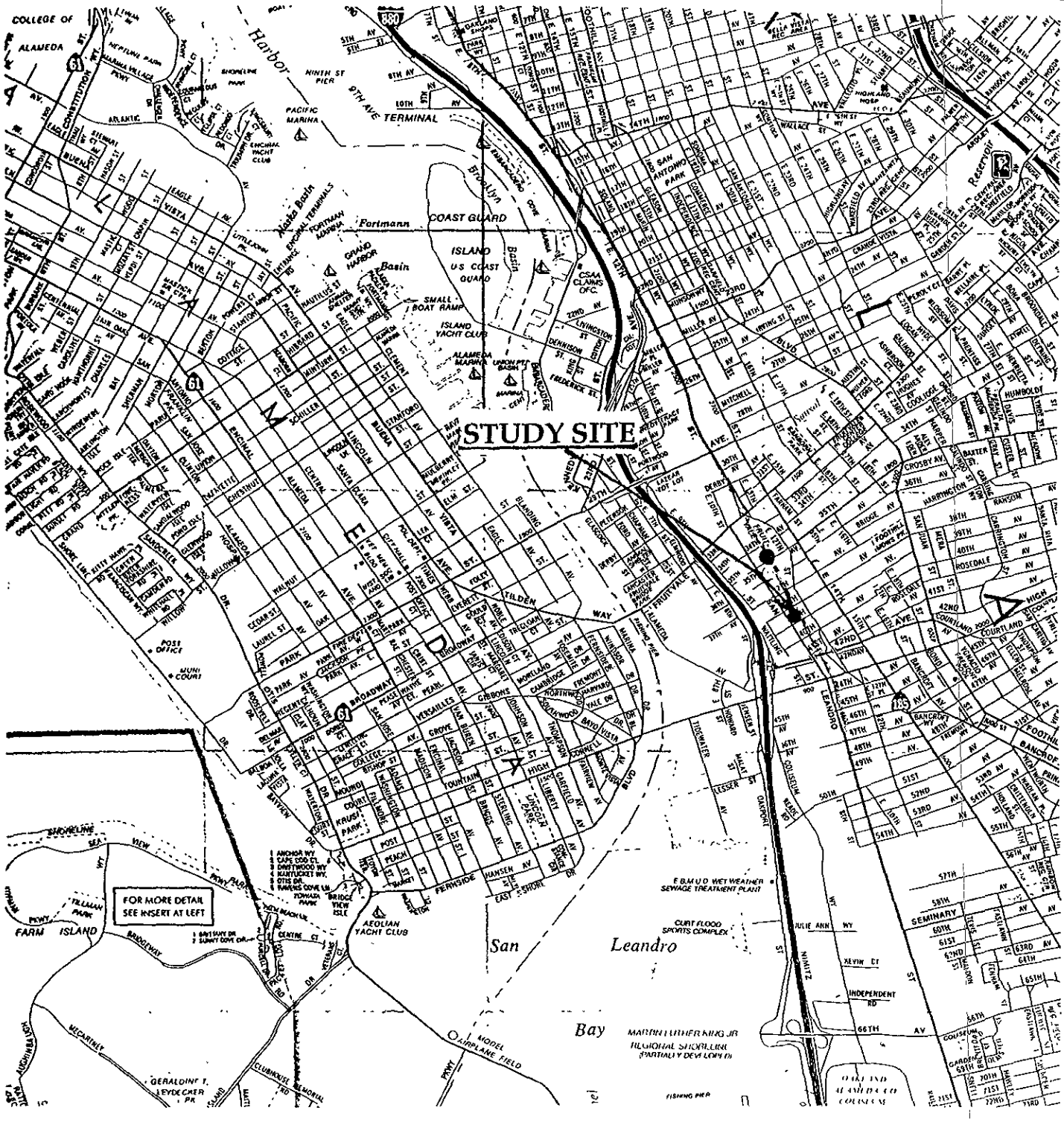
MTBE = Methyl tert butyl ether.

Table 3
Current Investigation Groundwater Analytical Results
Guy's Diesel, 3820 San Leandro Street, Oakland, California

Date	Descriptor	Top of Casing Elevation	Depth to Ground-water	Groundwater Elevation (MSL)	TPH-gasoline (mg/L)	TPH-diesel (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
7/6/98	MW-1	27.54	7.77	19.77	4.1	<0.10	36	53	<5.0	20	80
7/6/98	MW-2	25.97	8.15	17.82	3.4	<0.10	190	14	13	12	210
7/6/98	MW-3	26.52	8.42	18.10	36	<0.10	6,700	72	6.2	530	13,000
7/2/98	W-1	26.00	—	NA	1.3	<0.05	300	3.5	<0.5	2.8	580

Notes:
mg/L = milligrams per liter.
µg/L = micrograms per liter.
TPH = Total petroleum hydrocarbons.
MTBE = Methyl tertiary butyl ether.
— = No analysis performed.
MSL = Relative to Mean Seal Level datum
NA = Not Available

PLATES



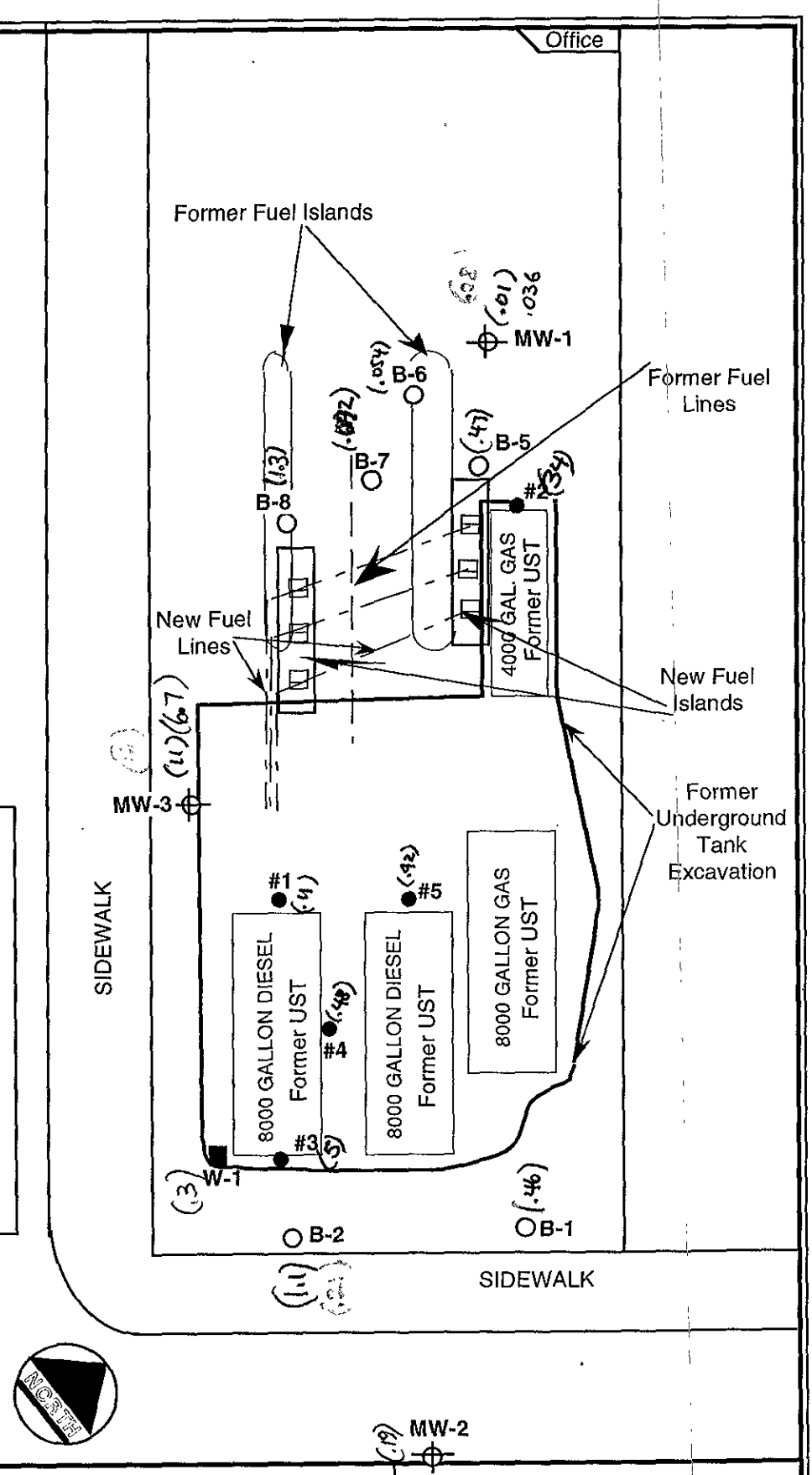
Ref: CSAA Oakland, Berkley, Alameda 1992

APPROXIMATE SCALE
(feet)
0 2640 5280

PROJECT NO.:	581.1	
DRAWN BY:	CES	4/8/98
CHECKED BY:		
APPROVED BY:		

BACE Environmental
A Division Of
Brunsing Associates, Inc.

PLATE 1
SITE LOCATION MAP
Guy's Diesel
3820 San Leandro Street
Oakland, California



Soil ppm
GW mg/l

Groundwater / Soil

LEGEND:

- ● #1 — Soil Sample Collected During Underground Tank Removal
- ○ B-1 — Boring Location advanced on July 1, 1998
- ⊕ MW-1 — Two inch diameter groundwater monitoring well installed on July 2, 1998
- W-1 ■ — Location of PVC pipe screened in the tank pit excavation

APPROXIMATE SCALE
(feet)
0 7.5 15 30

PROJECT NO.: 581.1		
DRAWN BY:	CES	4/3/98
CHECKED BY:		
APPROVED BY:		
REVISED:	TFA	7/24/98

BACE Environmental
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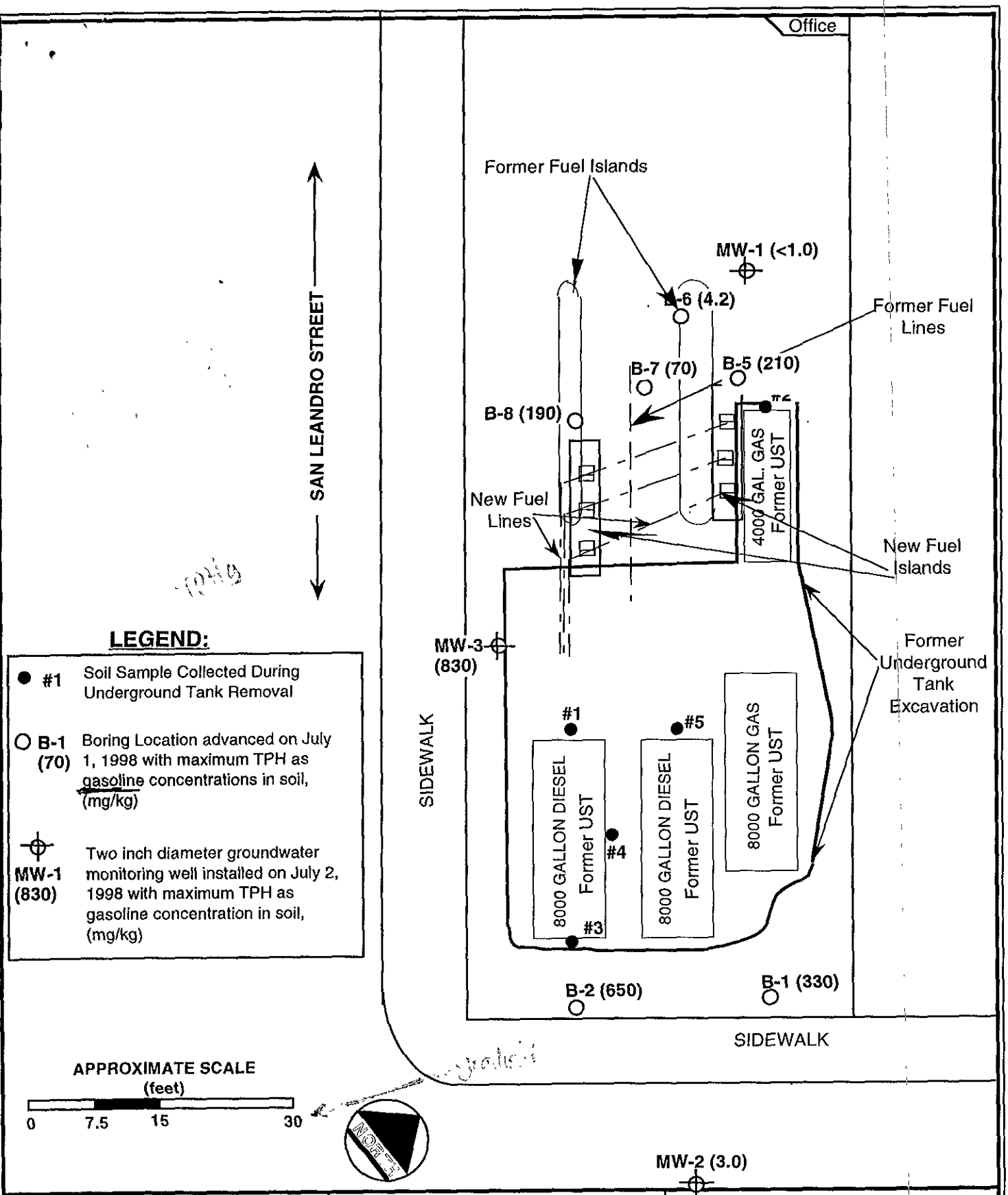
PLATE 2
SITE MAP
Guy's Diesel
3820 San Leandro Street
Oakland, California



LEGEND:

- ● #1 — Soil Sample Collected During Underground Tank Removal
- ○ B-1 (70) — Boring Location advanced on July 1, 1998 with maximum TPH as gasoline concentrations in soil, (mg/kg)
- ⊕ MW-1 (830) — Two inch diameter groundwater monitoring well installed on July 2, 1998 with maximum TPH as gasoline concentration in soil, (mg/kg)

PROJECT NO.:	581.1	
DRAWN BY:	CES	4/3/98
CHECKED BY:		
APPROVED BY:		
REVISED:	TFA	7/24/98

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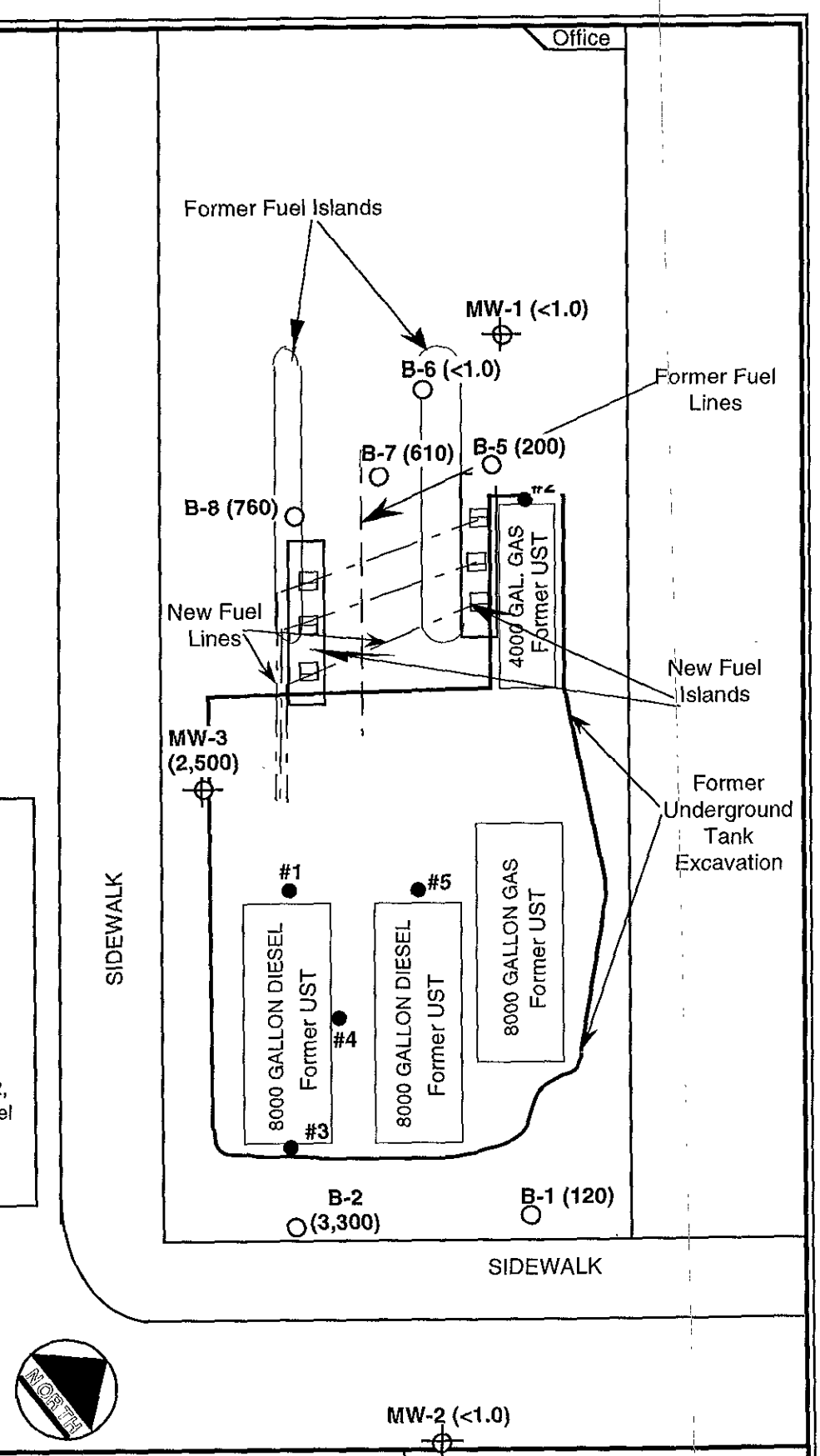
PLATE 3
Maximum TPH as Gasoline in Soil
Guy's Diesel
3820 San Leandro Street
Oakland, California



LEGEND:

- ● #1 — Soil Sample Collected During Underground Tank Removal
- ○ B-1 — Boring Location advanced on July 1, 1998 with maximum TPH as diesel concentrations in soil, (mg/kg)
- ⊕ MW-1 — Two inch diameter groundwater monitoring well installed on July 2, 1998 with maximum TPH as diesel concentration in soil, (mg/kg).

APPROXIMATE SCALE (feet)

0 7.5 15 30

PROJECT NO.: 581.1		
DRAWN BY:	CES	4/3/98
CHECKED BY:		
APPROVED BY:		
REVISED:	TFA	7/24/98

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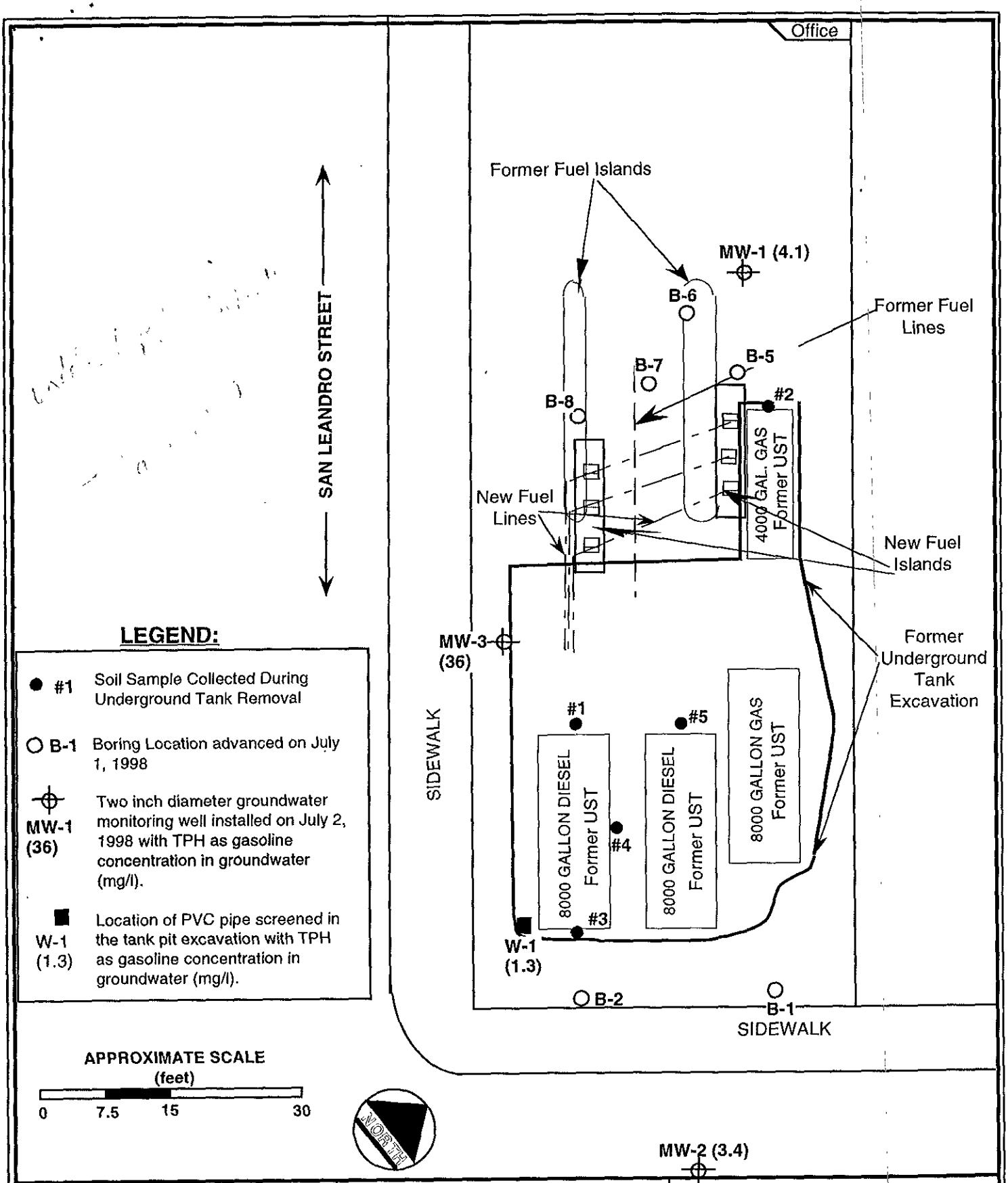
Brunsing Associates, Inc.

PLATE 4
Maximum TPH as Diesel in Soil
Guy's Diesel
3820 San Leandro Street
Oakland, California



LEGEND:

● #1	Soil Sample Collected During Underground Tank Removal
○ B-1	Boring Location advanced on July 1, 1998
⊕ MW-1 (36)	Two inch diameter groundwater monitoring well installed on July 2, 1998 with TPH as gasoline concentration in groundwater (mg/l).
■ W-1 (1.3)	Location of PVC pipe screened in the tank pit excavation with TPH as gasoline concentration in groundwater (mg/l).

APPROXIMATE SCALE
(feet)

0 7.5 15 30

PROJECT NO.: 581.1		
DRAWN BY:	CES	4/3/98
CHECKED BY:		
APPROVED BY:		
REVISED:	TFA	7/24/98

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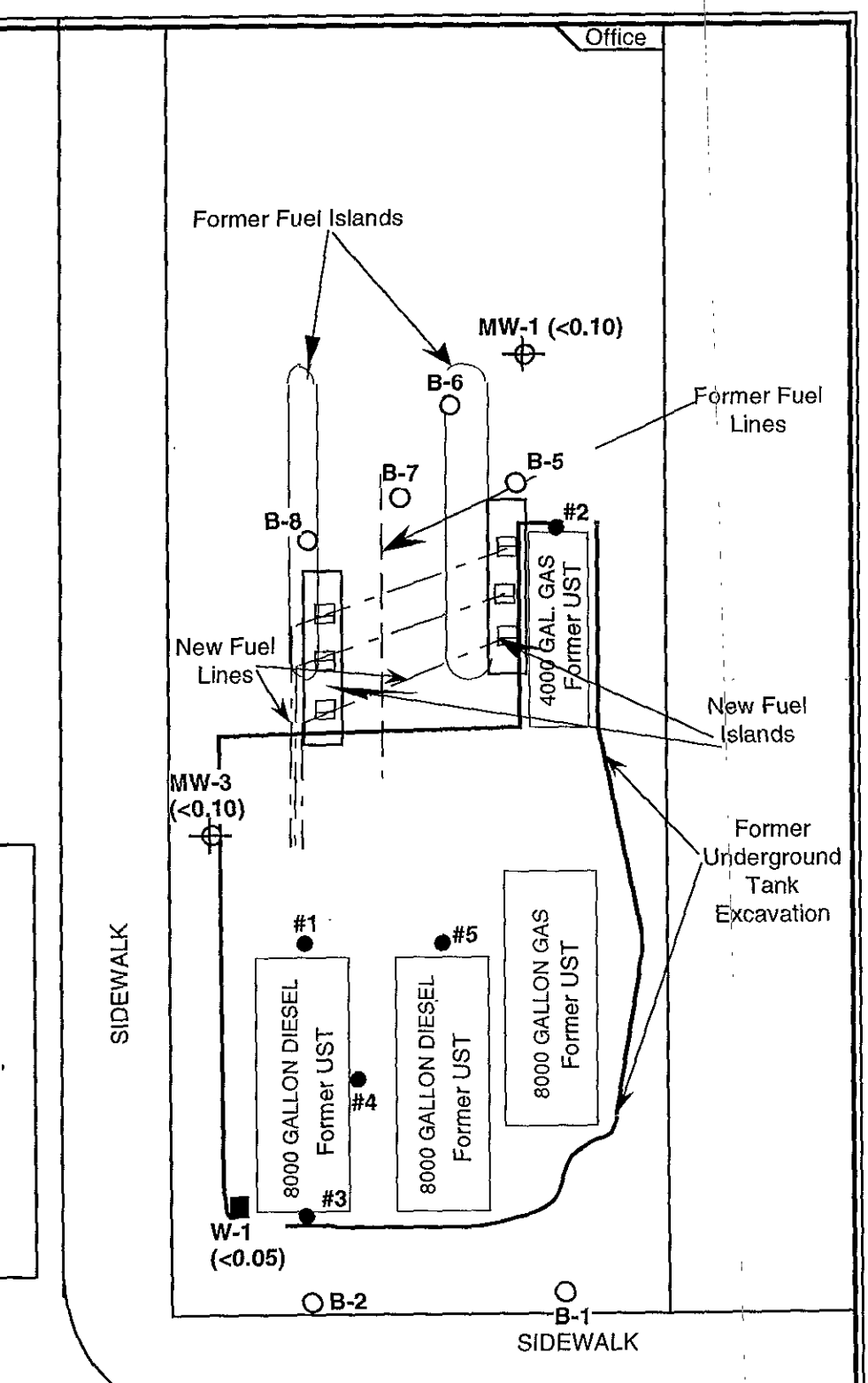
Brunsing Associates, Inc.

PLATE 5
TPH as Gasoline in Groundwater
Guy's Diesel
3820 San Leandro Street
Oakland, California



LEGEND:

- ● #1 — Soil Sample Collected During Underground Tank Removal
- ○ B-1 — Boring Location advanced on July 1, 1998.
- ⊕ MW-1 (<0.1) — Two inch diameter groundwater monitoring well installed on July 2, 1998 with TPH as diesel concentration in groundwater (mg/l).
- ■ W-1 (<0.1) — Location of PVC pipe screened in the tank pit excavation with TPH as diesel concentration in groundwater (mg/l).

APPROXIMATE SCALE
(feet)

0 7.5 15 30

NORTH

PROJECT NO.: 581.1		
DRAWN BY:	CES	4/3/98
CHECKED BY:		
APPROVED BY:		
REVISED:	TFA	7/24/98

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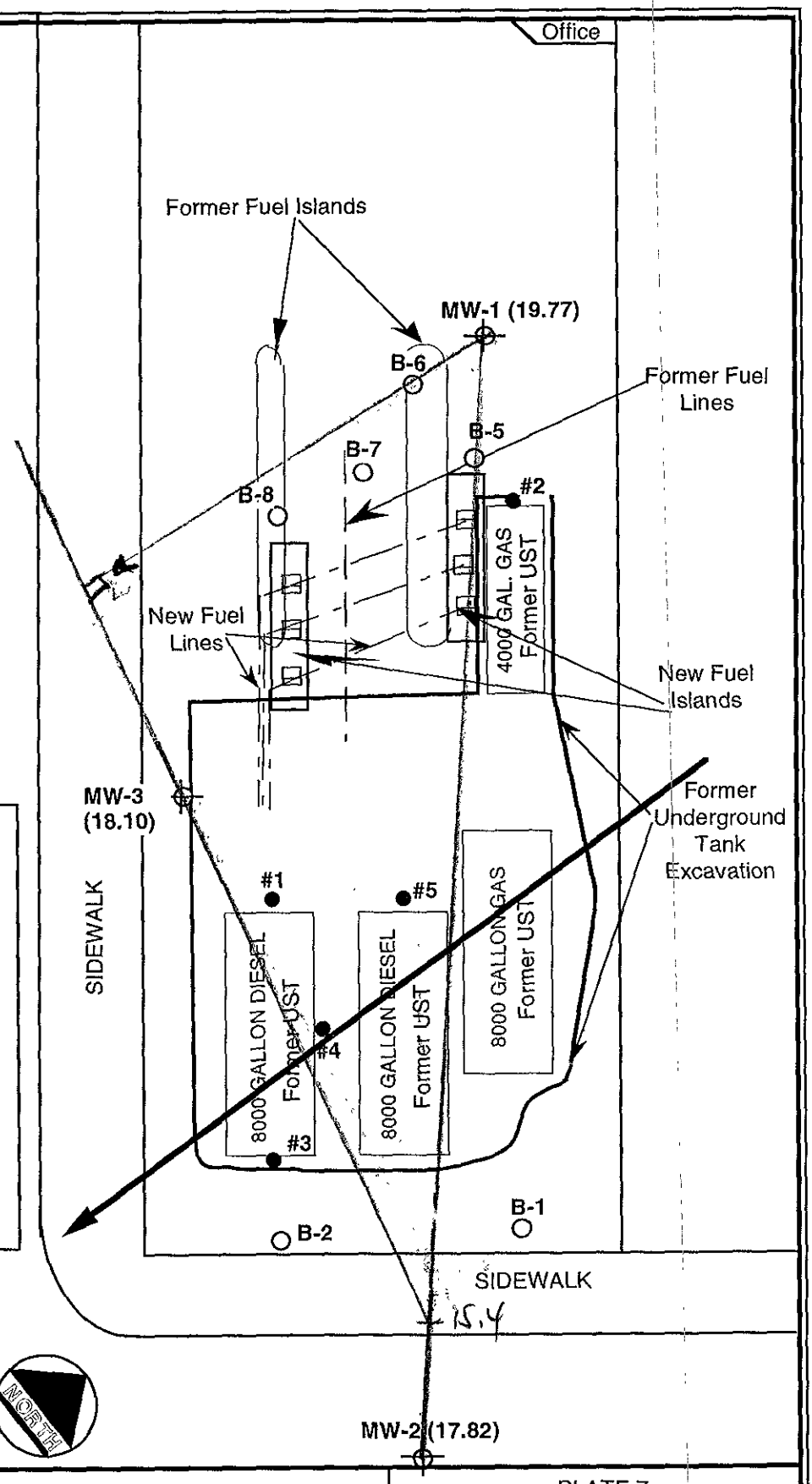
A Division Of
Brunsing Associates, Inc.

PLATE 6
TPH as Diesel in Groundwater
Guy's Diesel
3820 San Leandro Street
Oakland, California



LEGEND:

- ● #1 — Soil Sample Collected During Underground Tank Removal
- ○ B-1 — Boring Location advanced on July 1, 1998.
- Groundwater flow direction on July 6, 1998, based in groundwater elevations at well MW-1, MW-2, and MW-3.
- MW-1 (18.10) — Two inch diameter groundwater monitoring well installed on July 2, 1998 with groundwater elevations measured on July 8, 1998. Groundwater elevations are relative to mean sea level.

APPROXIMATE SCALE (feet)

0 7.5 15 30

PROJECT NO.: 581.1		
DRAWN BY:	CES	4/3/98
CHECKED BY:		
APPROVED BY:		
REVISED:	TFA	7/24/98

BACE Environmental
A Division Of
Brunsing Associates, Inc.

PLATE 7
Groundwater Elevations
Guy's Diesel
3820 San Leandro Street
Oakland, California

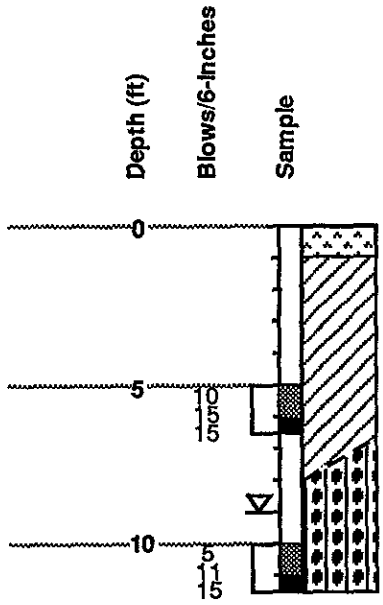
APPENDIX A

Boring Logs and Well Completion Details

Log of Boring B-1

Equipment: 8" Hollow-Stem Auger

Drill Date: 7/1/98 **Logged by:** JB



Concrete

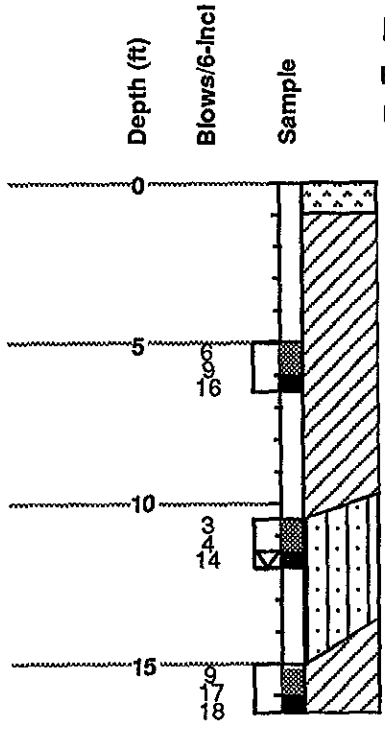
DARK BROWN SILTY CLAY (CL)
very stiff to stiff, moist, some gravel fragments

BROWN SILTY GRAVEL (GM)
medium dense, wet, hydrocarbon odor

Log of Boring B-2

Equipment: 8" Hollow-Stem Auger

Drill Date: 7/1/98 **Logged by:** JB



Concrete

DARK BROWN SILTY CLAY (CL)
medium stiff to stiff, slightly moist, trace sands

BROWN SILTY SAND (SM)
loose to medium dense, wet, fine grained sand, hydrocarbon odor

DARK BROWN SILTY CLAY (CL)
medium stiff to stiff, slightly moist, some sand and gravel

LEGEND:

Length Of Drive
Sample Recovered
Sample Retained

Depth Groundwater First Encountered

PROJECT NO.:	581.2	
DRAWN BY:	KPS	8/3/98
CHECKED BY:	JB	
APPROVED BY:	DMD	
REVISED BY:	KPS	8/7/98

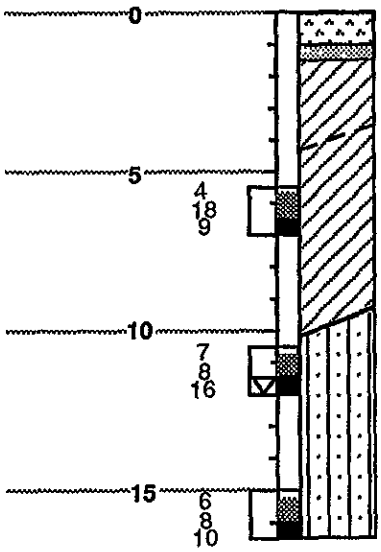
BACE Environmental
A Division Of
Brunsing Associates, Inc.

PLATE A1
LOGS OF BORINGS B-1 AND B-2
Guy's Diesel
3820 San Leandro Street
Oakland, California

Log of Boring B-5

Equipment: 8" Hollow-Stem Auger

Drill Date: 7/1/98 **Logged by:** JB



Concrete
Sand
DARK BROWN BLACK CLAY (CL)
slightly moist, slight hydrocarbon odor

GREEN SILTY CLAY (CL)
medium stiff, slightly moist, hydrocarbon odor, trace sand

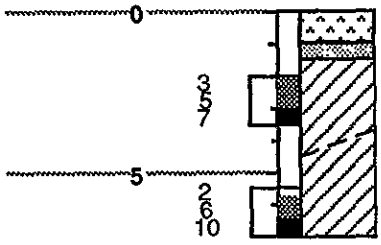
BROWN SILTY SAND (SM)
medium dense to loose, moist to wet, fine grained

MOTTLED GREEN AND BROWN SILTY SAND (SM)
medium dense, moist, hydrocarbon odor, fine grained

Log of Boring B-6

Equipment: 8" Hollow-Stem Auger

Drill Date: 7/1/98 **Logged by:** JB



Concrete
Sand
DARK BROWN-BLACK CLAY (CL)
soft, slightly moist, slight hydrocarbon odor

GREEN SILTY CLAY (CL)
soft to medium stiff, wet, fine grained sand, hydrocarbon odor

LEGEND:

Length Of Drive
Sample Recovered
Sample Retained

Depth Groundwater First Encountered

PROJECT NO.: 581.2		
DRAWN BY:	KPS	8/3/98
CHECKED BY:	JB	
APPROVED BY:	DMD	
REVISED BY:	KPS	8/7/98

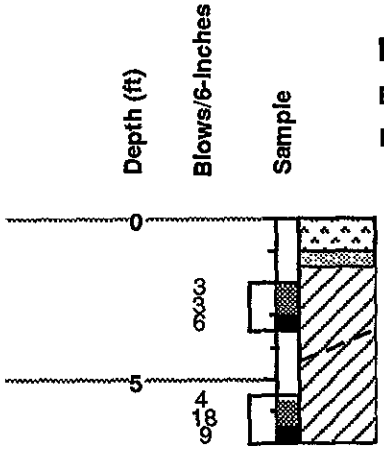
BACE Environmental
A Division Of
Brunsing Associates, Inc.

PLATE A2
LOGS OF BORINGS B-5 AND B-6
Guy's Diesel
3820 San Leandro Street
Oakland, California

Log of Boring B-7

Equipment: 8" Hollow-Stem Auger

Drill Date: 7/1/98 **Logged by:** JB



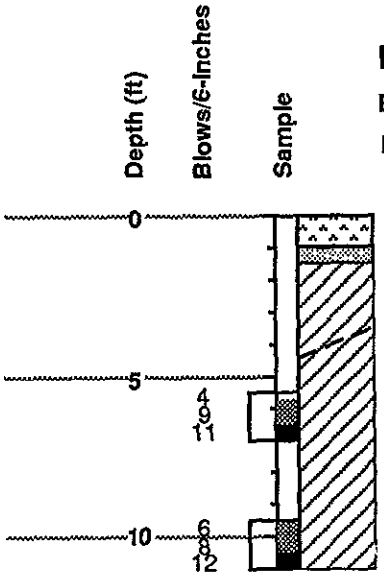
Concrete
Sand
DARK BROWN BLACK CLAY (CL)
soft, slightly moist

GREEN SILTY CLAY (CL)
soft to medium stiff, slightly moist, trace sand

Log of Boring B-8

Equipment: 8" Hollow-Stem Auger

Drill Date: 7/1/98 **Logged by:** JB



Concrete
Sand
DARK BROWN-BLACK CLAY (CL)
soft, slightly moist

GREEN SILTY CLAY (CL)
soft to medium stiff, moist, trace fine grained sand, hydrocarbon odor

some sand, wet

LEGEND:

Length Of Drive
Sample Recovered
Sample Retained

Depth Groundwater First Encountered

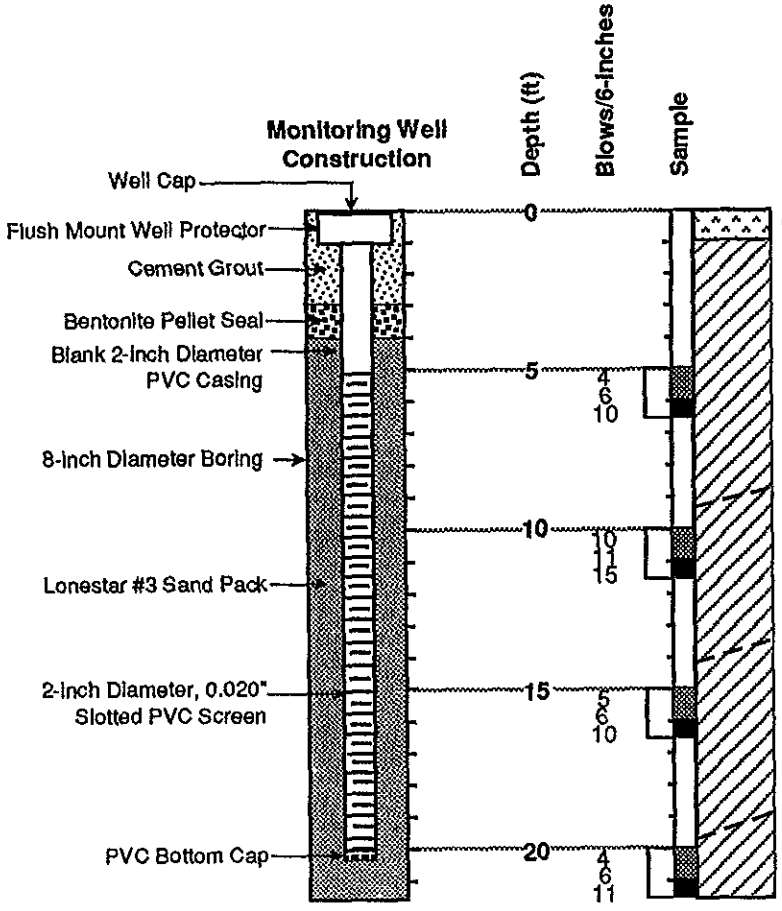
PROJECT NO.: 581.2		
DRAWN BY:	KPS	8/3/98
CHECKED BY:	JB	
APPROVED BY:	DMD	
REVISED BY:	KPS	8/7/98

BACE Environmental
A Division Of
Brunsing Associates, Inc.

PLATE A3
LOGS OF BORINGS B-7 AND B-8
Guy's Diesel
3820 San Leandro Street
Oakland, California

Log of Boring MW-1

Equipment: 8-inch Hollow Stem Auger
Drill Date: 7/2/98 **Logged by:** JB



LEGEND:

Length Of Drive
Sample Recovered
Sample Retained

▽ Depth Groundwater First Encountered

PROJECT NO.: 581.2		
DRAWN BY:	KPS	8/3/98
CHECKED BY:	JB	
APPROVED BY:	DMD	
REVISED BY:	KPS	8/7/98

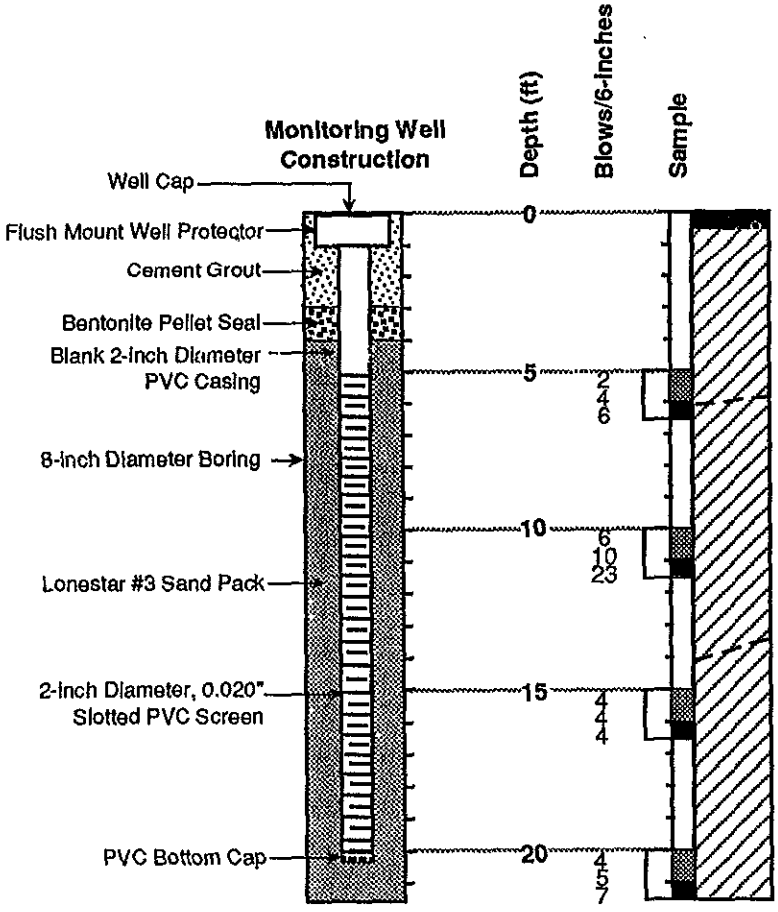
BACE Environmental
A Division Of
Brunsing Associates, Inc.

PLATE A4
Log and Well Construction Details, MW-1
Guy's Diesel
3820 San Leandro Street
Oakland, California

Log of Boring MW-2

Equipment: 8-inch Hollow Stem Auger

Drill Date: 7/2/98 **Logged by:** JB



LEGEND:

Length Of Drive
Sample Recovered
Sample Retained

▽ Depth Groundwater First Encountered

PROJECT NO.: 581.2		
DRAWN BY:	KPS	8/3/98
CHECKED BY:	JB	
APPROVED BY:	DMD	
REVISED BY:	KPS	8/7/98

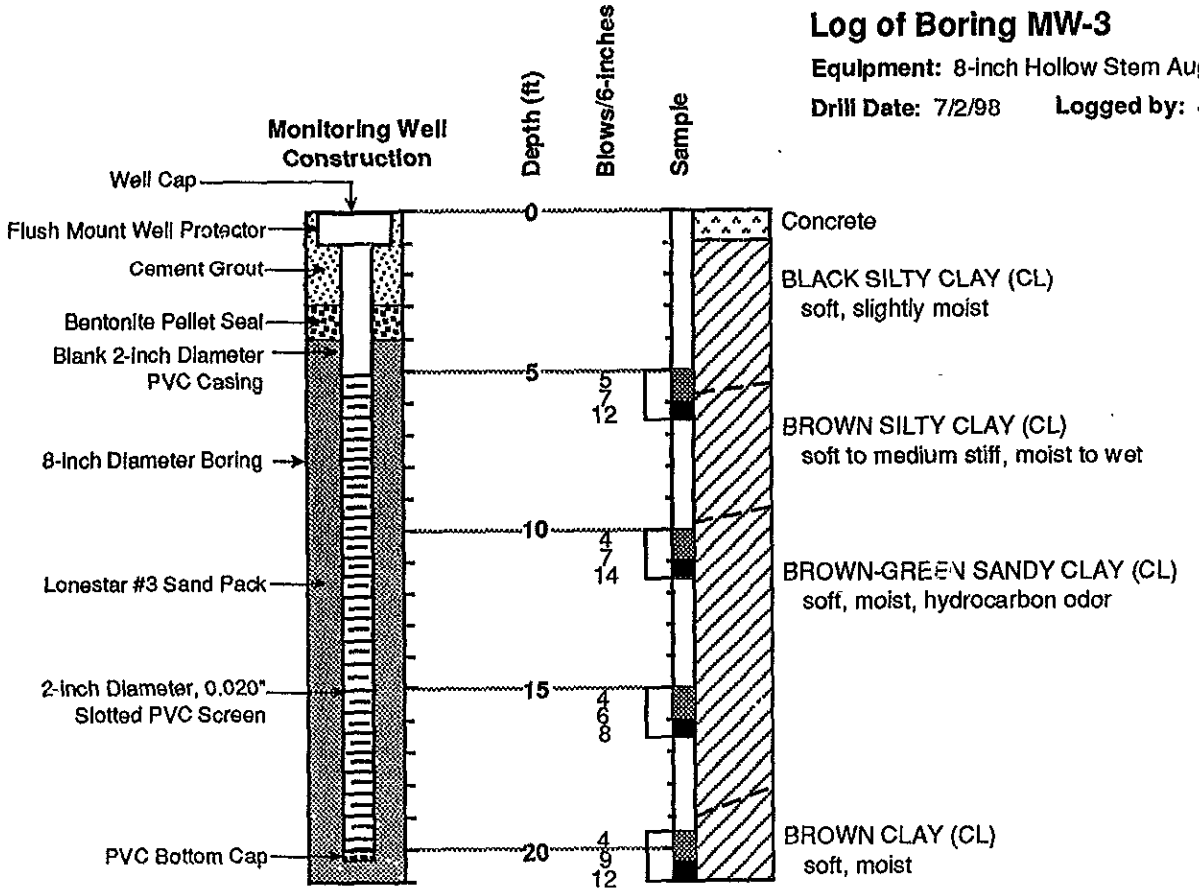
BACE Environmental
A Division Of
Brunsing Associates, Inc.

PLATE A5
Log and Well Construction Details, MW-2
Guy's Diesel
3820 San Leandro Steet
Oakland, California

Log of Boring MW-3

Equipment: 8-inch Hollow Stem Auger

Drill Date: 7/2/98 **Logged by:** JB



moist

LEGEND:

Length Of Drive
Sample Recovered
Sample Retained

▽ Depth Groundwater First Encountered

PROJECT NO.: 581.2		
DRAWN BY:	KPS	8/3/98
CHECKED BY:	JB	
APPROVED BY:	DMD	
REVISED BY:	KPS	8/7/98

BACE Environmental
A Division Of
Brunsing Associates, Inc.

PLATE A6
Log and Well Construction Details, MW-3
Guy's Diesel
3820 San Leandro Street
Oakland, California

APPENDIX B
Analytical Data Reports

BACE Analytical & Field Services
A Division of Brunsing Associates, Inc.

July 6, 1998
Log No: 2931
Laboratory Certificate Number: 1264

BACE Environmental
a division of
Brunsing Associates, Inc.
760 Market Street, Suite 344
San Francisco, CA 94102

ATTN: Joel Bruxvoort

RE: Results of the analyses of soil and groundwater samples obtained for project number 581.3 on July 1 and 2, 1998.

Dear Mr. Bruxvoort,

This letter serves to confirm the analytical results previously communicated to you. Should any questions arise concerning procedure or results, please feel free to contact us.

Sincerely,

William G. Rotz
Director, Mobile Analytical Services

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/1/98
Analysis Date: 7/3 & 4/98

BAFS Log No: 2931

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 2931-1 (B7 7')	2931-2 (B7 3')
Benzene	5.0		92	90
Toluene	5.0		360	43
Ethylbenzene	5.0		260	10
Xylenes (total)	5.0		1700	30
MTBE	50		1300	1000
Dilution Factor			10	1

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-1 (B7 7')	2931-2 (B7 3')
TPH - gasoline	1.0		70	14
Dilution Factor			10	1

METHOD: EPA 3550 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-1 (B7 7')	2931-2 (B7 3')
TPH - diesel	1.0		610	110
Dilution Factor			10	1

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/1/98
Analysis Date: 7/3/98

BAFS Log No: 2931

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 2931-3 (B8 7')	2931-4 (B8 11')
Benzene	5.0		1300	1100
Toluene	5.0		4000	190
Ethylbenzene	5.0		4600	1200
Xylenes (total)	5.0		22000	4700
MTBE	50		5400	1900
Dilution Factor			10	5

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-3 (B8 7')	2931-4 (B8 11')
TPH - gasoline	1.0		190	90
Dilution Factor			10	5

METHOD: EPA 3550 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-3 (B8 7')	2931-4 (B8 11')
TPH - diesel	1.0		760	140
Dilution Factor			10	1

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/1/98
Analysis Date: 7/3/98

BAFS Log No: 2931

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 2931-5 (B5 7')	2931-6 (B5 12')
Benzene	5.0		18	470
Toluene	5.0		ND	2500
Ethylbenzene	5.0		ND	2600
Xylenes (total)	5.0		ND	3000
MTBE	50		100	1900
Dilution Factor			1	5

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-5 (B5 7')	2931-6 (B5 12')
TPH - gasoline	1.0		ND	210
Dilution Factor			1	5

METHOD: EPA 3550 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-5 (B5 7')	2931-6 (B5 12')
TPH - diesel	1.0		ND	200
Dilution Factor			1	1

Note: ND = not detected

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/1/98
Analysis Date: 7/3/98

BAFS Log No: 2931

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 2931-7 (B5 16')	2931-8 (B6 3')
Benzene	5.0		100	54
Toluene	5.0		17	27
Ethylbenzene	5.0		24	6.7
Xylenes (total)	5.0		38	24
MTBE	50		ND	300
Dilution Factor			1	1

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-7 (B5 16')	2931-8 (B6 3')
TPH - gasoline	1.0		1.0	4.2
Dilution Factor			1	1

METHOD: EPA 3550 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-7 (B5 16')	2931-8 (B6 3')
TPH - diesel	1.0		ND	ND
Dilution Factor			1	1

Note: ND = not detected

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/1/98
Analysis Date: 7/2, 3, 4/98

BAFS Log No: 2931

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 2931-9 (B6 7')	2931-10 (B2 6')
Benzene	5.0		14	18
Toluene	5.0		ND	50
Ethylbenzene	5.0		ND	87
Xylenes (total)	5.0		7.9	33
MTBE	50		ND	100
Dilution Factor			1	1

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-9 (B6 7')	2931-10 (B2 6')
TPH - gasoline	1.0		ND	12
Dilution Factor			1	1

METHOD: EPA 3550 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-9 (B6 7')	2931-10 (B2 6')
TPH - diesel	1.0		ND	230
Dilution Factor			1	1

Note: ND = not detected

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/1/98
Analysis Date: 7/2 & 3/98

BAFS Log No: 2931

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 2931-11 (B2 11')	2931-12 (B2 16')
Benzene	5.0		1100	9.6
Toluene	5.0		5100	10
Ethylbenzene	5.0		3800	13
Xylenes (total)	5.0		4400	14
MTBE	50		1600	100
Dilution Factor			10	1

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-11 (B2 11')	2931-12 (B2 16')
TPH - gasoline	1.0		650	2.3
Dilution Factor			10	1

METHOD: EPA 3550 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-11 (B2 11')	2931-12 (B2 16')
TPH - diesel	1.0		3300	6.7
Dilution Factor			20	1

Note: ND = not detected

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/1/98
Analysis Date: 7/2 & 3/98

BAFS Log No: 2931

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 2931-13 (B1 6′)	2931-14 (B1 11′)
Benzene	5.0		ND	460
Toluene	5.0		ND	2200
Ethylbenzene	5.0		10	1800
Xylenes (total)	5.0		300	3400
MTBE	50		ND	2200
Dilution Factor			1	5

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-13 (B1 6′)	2931-14 (B1 11′)
TPH - gasoline	1.0		ND	330
Dilution Factor			1	5

METHOD: EPA 3550 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2931-13 (B1 6′)	2931-14 (B1 11′)
TPH - diesel	1.0		ND	120
Dilution Factor			1	1

Note: ND = not detected

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/2/98
Analysis Date: 7/3/98/98

BAFS Log No: 2931

METHOD: EPA 5030/8020

Matrix: Water

Parameter	Reporting Limit µg/L	Lab No: / Descriptor:	Results - µg/L 2931-15 (W-1)
Benzene	0.5		300[A]
Toluene	0.5		3.5
Ethylbenzene	0.5		ND
Xylenes (total)	0.5		2.8
MTBE	5.0		580[A]
Dilution Factor			1

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/L	Lab No.: / Descriptor:	Results - mg/L 2931-15 (W-1)
TPH - gasoline	0.05		1.3
Dilution Factor			

METHOD: EPA 3510 / GC FID

Parameter	Reporting Limit mg/L	Lab No.: / Descriptor:	Results - mg/L 2931-15 (W-1)
TPH - diesel	0.05		ND
Dilution Factor			1

Note: *ND = not detected*
^= Dilution Factor is 10

QUALITY CONTROL SUMMARY

Client: BACE Environmental
Client Contact: Joel Bruxvoort
Sample Date: 7/1/98
Analysis Date:7/2, 3, 4/98

BAFS Log No. : 2931

Matrix: Soil

Parameter	% RECOVERY				
	CCV%*	Blank	Spike	Spike Dup	RPD
Gasoline	92	ND	88	96	8.7
Diesel	95	ND	90	90	<1
Benzene	93	ND	93	90	3.3
Toluene	103	ND	101	97	4.0
Ethylbenzene	100	ND	103	101	2.0
Xylenes	99	ND	110	95	12
MTBE	93	ND	93	85	9.0

Sample Date: 7/2/98
Analysis Date:7/3/98

Matrix: Water

Parameter	% RECOVERY				
	CCV%*	Blank	Spike	Spike Dup	RPD
Gasoline	102	ND	97	90	7.5
Diesel	95	ND	108	106	1.9
Benzene	103	ND	90	90	<1
Toluene	106	ND	93	92	1.1
Ethylbenzene	110	ND	95	92	3.2
Xylenes	106	ND	94	90	4.3
MTBE	105	ND	110	99	11

* Continuous Calibration Verification Standard

PROJ. NO.	PROJECT NAME
581.3	Guy's Diesel
L.P. NO.	SAMPLERS: (Signature)

№ 2931

DATE	SAMPLE I.D.	TYPE	NO. OF CONTAINERS	ANALYSIS: TPH-gas / TPH-diesel / BTEX+MTBE	REMARKS
7/1/98	B7 7'	Soil	1	X X X	2931-1
	B7 3'			X X X	2931-2
	B8 7'			X X X	2931-3
	B8 11'			X X X	2931-4
	B5 7'			X X X	2931-5
	B5 12'			X X X	2931-6
	B5 16'			X X X	2931-7
	B6 3'			X X X	2931-8
	B6 7'			X X X	2931-9
	B2 6'			X X X	2931-10
	B2 11'			X X X	2931-11
	B2 16'			X X X	2931-12
	B1 6'			X X X	2931-13
	B1 11'			X X X	2931-14
~~7/2/98~~	W-1	W		X X X	-15

LABORATORY: BAFS

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	7/2/98 1010	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Remarks
Immediate TAT
Part 1 of 2
Second part arrives 7/4

BRUNSING ASSOCIATES, INC.

Offices:

PO Box 588
Windsor CA 95492
707-838-3027

760 Market St., Ste. 344
San Francisco CA 94102
415-391-6840

1215 Elk St., Ste. B
Rock Springs WY 82901
307-362-9277

BACE Analytical & Field Services
A Division of Brunsing Associates, Inc.

July 20, 1998
Log No: 2933
Laboratory Certificate Number: 1264

BACE Environmental
a division of
Brunsing Associates, Inc.
760 Market Street, Suite 344
San Francisco, CA 94102

ATTN: Joel Bruxvoort

RE: **Results of the analyses of soil samples obtained for project number 581.3 on July 2, 1998.**

Dear Mr. Bruxvoort,

This letter serves to confirm the analytical results previously communicated to you. Should any questions arise concerning procedure or results, please feel free to contact us.

Sincerely,

William G. Rotz
Director, Mobile Analytical Services

Tami Hucke Norgrove
Laboratory Manager

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/2/98
Analysis Date: 7/9&10/98

BAFS Log No: 2933

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 2933-2 (MW-1 11')	2933-3 (MW-1 16')
Benzene	5.0		ND	10
Toluene	5.0		ND	ND
Ethylbenzene	5.0		ND	8.9
Xylenes (total)	5.0		ND	ND
MTBE	50		ND	ND
Dilution Factor			1	1

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2933-2 (MW-1 11')	2933-3 (MW-1 16')
TPH - gasoline	1.0		ND	ND
Dilution Factor			1	1

METHOD: EPA 3550 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2933-2 (MW-1 11')	2933-3 (MW-1 16')
TPH - diesel	1.0		ND	ND
Dilution Factor			1	1

Note: ND = not detected

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/2/98
Analysis Date: 7/9&10/98

BAFS Log No: 2933

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 2933-6 (MW-2 11')	2933-7 (MW-2 16')
Benzene	5.0		ND	ND
Toluene	5.0		ND	8.3
Ethylbenzene	5.0		ND	10
Xylenes (total)	5.0		ND	15
MTBE	50		ND	ND
Dilution Factor			1	1

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2933-6 (MW-2 11')	2933-7 (MW-2 16')
TPH - gasoline	1.0		ND	3.0
Dilution Factor			1	1

METHOD: EPA 3550 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2933-6 (MW-2 11')	2933-7 (MW-2 16')
TPH - diesel	1.0		ND	ND
Dilution Factor			1	1

Note: ND = not detected

Client: BACE Environmental
Client Contact: Joel Bruxvoort

Sample Date: 7/2/98
Analysis Date: 7/4&9/98

BAFS Log No: 2933

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 2933-10 (MW-3 11')	2933-11 (MW-3 16')
Benzene	5.0		11000	170
Toluene	5.0		4400	7.9
Ethylbenzene	5.0		19000	24
Xylenes (total)	5.0		22000	24
MTBE	50		6800	220
Dilution Factor			50	1

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2933-10 (MW-3 11')	2933-11 (MW-3 16')
TPH - gasoline	1.0		830	ND
Dilution Factor			50	1

METHOD: EPA 3550 / GC FID

Parameter	Reporting Limit mg/kg	Lab No.: Descriptor:	Results - mg/kg 2933-10 (MW-3 11')	2933-11 (MW-3 16')
TPH - diesel	1.0		2500	ND
Dilution Factor			10	1

Note: ND = not detected

QUALITY CONTROL SUMMARY

Client: BACE Environmental
Client Contact: Joel Bruxvoort
Sample Date: 7/2/98
Analysis Date: 7/4, 9, & 10/98

BAFS Log No. : 2933

Matrix: Soil

Parameter	% RECOVERY				
	CCV%*	Blank	Spike	Spike Dup	RPD
Gasoline	92	ND	88	96	8.7
Diesel	95	ND	90	90	<1
Benzene	93	ND	93	90	3.3
Toluene	103	ND	101	97	4.0
Ethylbenzene	100	ND	103	101	2.0
Xylenes	99	ND	110	98	12
MTBE	93	ND	93	85	9.0

* Continuous Calibration Verification Standard

PROJ. NO.	PROJECT NAME
581.3	Guy's Diesel
L.P. NO.	SAMPLERS: (Signature)

№ 2932

DATE	SAMPLE I.D.	TYPE	NO. OF CONTAINERS	ANALYSIS: TPH Diesel	TPH gas	BTEX + MTBE	REMARKS
7/2/98	MW-1 6'	Soil	1				Hold 2933-1
	MW-1 11			X	X	X	2933-2
	MW-1 16			X	X	X	2933-3
	MW-1 21						Hold 2933-4
	MW-2 6						Hold 2933-5
	MW-2 11			X	X	X	2933-6
	MW-2 16			X	X	X	2933-7
	MW-2 21						Hold 2933-8
	MW-3 6						Hold 2933-9
	MW-3 11			X	X	X	2933-10
	MW-3 16			X	X	X	2933-11
	MW-3 21						Hold 2933-12
7/2/98	W-1	Water	3	X	X	X	TRANSFER to Log 2931
							VIA C of C #2931

LABORATORY: BAES

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	7/3/98 1430	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
	7/3/98 1430	

Remarks: Immediate TAT

BRUNSING ASSOCIATES, INC.

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BACE Analytical & Field Services
A Division of Brunsing Associates, Inc.

July 27, 1998
Log No: 2934
Laboratory Certificate Number: 1264

BACE Environmental
a division of
Brunsing Associates, Inc.
760 Market Street, Suite 344
San Francisco, CA 94102

ATTN: Tom Allan

RE: **Results of the analyses of groundwater samples obtained for project number 581.2 on July 6, 1998.**

Dear Mr. Allan,

This letter serves to confirm the analytical results previously communicated to you. Should any questions arise concerning procedure or results, please feel free to contact us.

Sincerely,

William G Rotz

William G. Rotz
Director, Mobile Analytical Services

Client: BACE Environmental
Client Contact: Tom Allan

Sample Date: 7/6/98
Analysis Date: 7/8 & 9/98

BAFS Log No: 2934

METHOD: EPA 5030/8020

Matrix: Water

Parameter	Reporting Limit µg/L	Lab No: Descriptor:	Results - µg/L 2934-1 (MW-1)	2934-2 (MW-2)
Benzene	0.5		36	190
Toluene	0.5		53	14
Ethylbenzene	0.5		ND	13
Xylenes (total)	0.5		20	12
MTBE	5.0		80[A]	210
Dilution Factor			10	1

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/L	Lab No.: Descriptor:	Results - mg/L 2934-1 (MW-1)	2934-2 (MW-2)
TPH - gasoline	0.05		4.1	3.4
Dilution Factor			10	1

METHOD: EPA 3510 / GC FID

Parameter	Reporting Limit mg/L	Lab No.: Descriptor:	Results - mg/L 2934-1 (MW-1)	2934-2 (MW-2)
TPH - diesel	0.05		ND	ND
Dilution Factor			2	2

Note: *ND = Not Detected*
[A]=Dilution Factor is 2

Client: BACE Environmental
Client Contact: Tom Allan

Sample Date: 7/6/98
Analysis Date: 7/8 & 9/98

BAFS Log No: 2934

METHOD: EPA 5030/8020

Matrix: Water

Parameter	Reporting Limit µg/L	Results - µg/L Lab No: 2934-3 Descriptor: (MW-3)
Benzene	0.5	6700
Toluene	0.5	72[B]
Ethylbenzene	0.5	6.2[B]
Xylenes (total)	0.5	530
MTBE	5.0	13000[C]
Dilution Factor		25

METHOD: EPA 5030 / GC FID

Parameter	Reporting Limit mg/L	Results - mg/L Lab No.: 2934-3 Descriptor: (MW-3)
TPH - gasoline	0.05	36
Dilution Factor		25

METHOD: EPA 3510 / GC FID

Parameter	Reporting Limit mg/L	Results - mg/L Lab No.: 2934-3 Descriptor: (MW-3)
TPH - diesel	0.05	ND
Dilution Factor		2

Note: *ND = Not Detected*
[B]=Dilution Factor is 1
[C]= Dilution Factor is 100

QUALITY CONTROL SUMMARY

Client: BACE Environmental
Client Contact: Tom Allan
Sample Date: 7/6/98
Analysis Date: 7/8 & 9/98

BAFS Log No. : 2934

Matrix: Water

Parameter	% RECOVERY				
	CCV%*	Blank	Spike	Spike Dup	RPD
Gasoline	94	ND	90	98	8.5
Diesel	98	ND	93	96	3.3
Benzene	93	ND	97	92	5.3
Toluene	103	ND	98	95	3.1
Ethylbenzene	110	ND	105	109	3.7
Xylenes	106	ND	110	112	1.8
MTBE	97	ND	104	110	5.6

* Continuous Calibration Verification Standard

PROJ. NO.	PROJECT NAME
581.2	Guy's Diesel
L.P. NO.	SAMPLERS: (Signature) Tom Allan

№ 2936

DATE	SAMPLE I.D.	TYPE	NO. OF CON-TAINERS	ANALYSIS: TPH-Gasoline	TPH-Diesel	BTEX	MTBE		REMARKS
7/6/98	MW-1	Water	4	X	X	X	X	2934-1	3 Ea 40 ml VOA's
↓	MW-2	↓	4	X	X	X	X	2934-2	1 Ea 1-Liter Amber
↓	MW-3	↓	4	X	X	X	X	2934-3	Highest MTBE Concentration shall be submitted to Sequoia Analytical for MTBE confirmation analysis only by EPA TEST METHOD 8260M.

LABORATORY: BAFS

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tom Allan	7/7/98 1200	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time 7/8/98 1000	Received for Laboratory by: (Signature)

Remarks: 3 day TAT

Results to Joel Brunnoost

BRUNSING ASSOCIATES, INC.

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August 3, 1998

Bill Rotz
Brunsing Associates, Inc.
PO Box 588
Windsor, CA 95492

RE: Guy's Diesel/P807091

Dear Bill Rotz

Enclosed are the results of analyses for sample(s) received by the laboratory on July 14, 1998. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Scott Forbes

Scott Forbes
Project Manager

CA ELAP Certificate Number 2245

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unsing Associates, Inc.	Project:	Guy's Diesel	Sampled: 7/6/98
O Box 588	Project Number:	581.2	Received: 7/14/98
Windsor, CA 95492	Project Manager:	Bill Rotz	Reported: 8/3/98

ANALYTICAL REPORT FOR P807091

mple Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW-3	P807091-01	Water	7/6/98

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unsing Associates, Inc.	Project:	Guy's Diesel	Sampled: 7/6/98
O Box 588	Project Number:	581.2	Received: 7/14/98
Windsor, CA 95492	Project Manager:	Bill Rotz	Reported: 8/3/98

Volatile Organic Compounds by EPA Method 8260B
Sequoia Analytical - Petaluma

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
MW-3			**P807091-01**				**Water**	
ethyl tert-butyl ether	8070176	7/15/98	7/15/98		1000	**14200**	ug/l	
Surrogate: Dibromofluoromethane	"	"	"	-		*96.0*	%	
Surrogate: 1,2-Dichloroethane-d4	"	"	"	-		*96.8*	"	
rrogate: Toluene-d8	"	"	"	-		*103*	"	
rrogate: 4-Bromofluorobenzene	"	"	"	-		*99.0*	"	

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[redacted]nsing Associates, Inc.	Project: Guy's Diesel	Sampled:	7/6/98
[redacted] Box 588	Project Number: 581.2	Received:	7/14/98
Windsor, CA 95492	Project Manager: Bill Rotz	Reported:	8/3/98

Volatile Organic Compounds by EPA Method 8260B/Quality Control
Sequoia Analytical - Petaluma

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
[redacted]tch: 8070176	**Date Prepared: 7/14/98**					**Extraction Method: EPA 5030 waters**				
[redacted]ank	**8070176-BLK1**									
Gasoline	7/14/98			ND	ug/l	50.0				
Methyl tert-butyl ether	"			ND	"	1.00				
[redacted]enzene	"			ND	"	1.00				
[redacted]luene	"			ND	"	1.00				
1,2-Dibromoethane (EDB)	"			ND	"	1.00				
[redacted]thylbenzene	"			ND	"	1.00				
[redacted]p-Xylene	"			ND	"	1.00				
[redacted]-Xylene	"			ND	"	1.00				
Surrogate: Dibromofluoromethane	"	*5.00*		*5.18*	"		*104*			
[redacted]rrogate: 1,2-Dichloroethane-d4	"	*5.00*		*5.35*	"		*107*			
[redacted]rrogate: Toluene-d8	"	*5.00*		*5.00*	"		*100*			
Surrogate: 4-Bromofluorobenzene	"	*5.00*		*5.20*	"		*104*			
[redacted]lank	**8070176-BLK2**									
[redacted]asoline	7/15/98			ND	ug/l	50.0				
Methyl tert-butyl ether	"			ND	"	1.00				
[redacted]enzene	"			ND	"	1.00				
[redacted]oluene	"			ND	"	1.00				
Ethylbenzene	"			ND	"	1.00				
m,p-Xylene	"			ND	"	1.00				
[redacted]Xylene	"			ND	"	1.00				
[redacted]urrogate: Dibromofluoromethane	"	*5.00*		*5.34*	"		*107*			
Surrogate: 1,2-Dichloroethane-d4	"	*5.00*		*5.59*	"		*112*			
[redacted]urrogate: Toluene-d8	"	*5.00*		*4.92*	"		*98.4*			
[redacted]urrogate: 4-Bromofluorobenzene	"	*5.00*		*5.03*	"		*101*			
LCS	**8070176-BS1**									
[redacted]enzene	7/14/98	5.00		4.78	ug/l		95.6			
[redacted]oluene	"	5.00		4.76	"		95.2			
Surrogate: Dibromofluoromethane	"	*5.00*		*4.98*	"		*99.6*			
[redacted]urrogate: 1,2-Dichloroethane-d4	"	*5.00*		*5.28*	"		*106*			
[redacted]urrogate: Toluene-d8	"	*5.00*		*4.88*	"		*97.6*			
[redacted]urrogate: 4-Bromofluorobenzene	"	*5.00*		*5.09*	"		*102*			
[redacted]CS	**8070176-BS2**									
[redacted]enzene	7/15/98	5.00		4.43	ug/l		88.6			
Toluene	"	5.00		4.48	"		89.6			
Surrogate: Dibromofluoromethane	"	*5.00*		*5 30*	"		*106*			
[redacted]urrogate: 1,2-Dichloroethane-d4	"	*5 00*		*5 67*	"		*113*			
[redacted]urrogate: Toluene-d8	"	*5.00*		*4.89*	"		*97.8*			

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nsing Associates, Inc.	Project:	Guy's Diesel	Sampled: 7/6/98
O Box 588	Project Number:	581.2	Received: 7/14/98
Windsor, CA 95492	Project Manager:	Bill Rotz	Reported: 8/3/98

Volatile Organic Compounds by EPA Method 8260B/Quality Control
Sequoia Analytical - Petaluma

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
CS (continued)	**8070176-BS2**									
rrogate: 4-Bromofluorobenzene	*7/15/98*	*5.00*		*5.25*	*ug/l*		*105*			
Matrix Spike	**8070176-MS1**		**P807083-01**							
nzene	7/14/98	5.00	ND	4.44	ug/l		**88.8**			
luene	"	5.00	ND	4.45	"		**89.0**			
Surrogate: Dibromofluoromethane	"	*5.00*		*5.09*	"		*102*			
rrogate: 1,2-Dichloroethane-d4	"	*5.00*		*5.21*	"		*104*			
rrogate: Toluene-d8	"	*5.00*		*4.78*	"		*95.6*			
Surrogate: 4-Bromofluorobenzene	"	*5.00*		*5.06*	"		*101*			
atrix Spike Dup	**8070176-MSD1**		**P807083-01**							
nzene	7/14/98	5.00	ND	4.49	ug/l		**89.8**	**1.12**		
Toluene	"	5.00	ND	4.51	"		**90.2**	**1.34**		
Surrogate: Dibromofluoromethane	"	*5.00*		*5.09*	"		*102*			
rrogate: 1,2-Dichloroethane-d4	"	*5.00*		*5.22*	"		*104*			
Surrogate: Toluene-d8	"	*5.00*		*4.90*	"		*98.0*			
Surrogate: 4-Bromofluorobenzene	"	*5.00*		*5.11*	"		*102*			

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[illegible]unsing Associates, Inc.	Project:	Guy's Diesel	Sampled: 7/6/98
[illegible] Box 588	Project Number:	581.2	Received: 7/14/98
Windsor, CA 95492	Project Manager:	Bill Rotz	Reported: 8/3/98

Notes and Definitions

Note	
DET	Analyte DETECTED
[illegible]D	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
[illegible]	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

P807091

№ 2857

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	ANALYSIS: EPA 8260 MTBE ONLY	REMARKS
581.2	GUY'S DIESEL			
L.P. NO.	SAMPLERS: (Signature) TOM ALLAN (WSB)			

DATE	SAMPLE I.D.	TYPE	NO. OF CONTAINERS	EPA 8260 MTBE ONLY	REMARKS
7-6-98	MW-3	W	2	X	P807091-01

LABORATORY: Sequoia

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
William [signature]	7/14/98 8:45	[signature]
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Remarks

FAX RESULTS TO BILL ROTZ @ 707 838 4420 WHEN COMPLETED

BRUNSING ASSOCIATES, INC.

Offices:

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