

Groundwater Monitoring Well Installation Report

**MTA Division 6
100 Sunset Avenue
Venice, California**

Prepared for:



**Metropolitan Transportation
Authority**

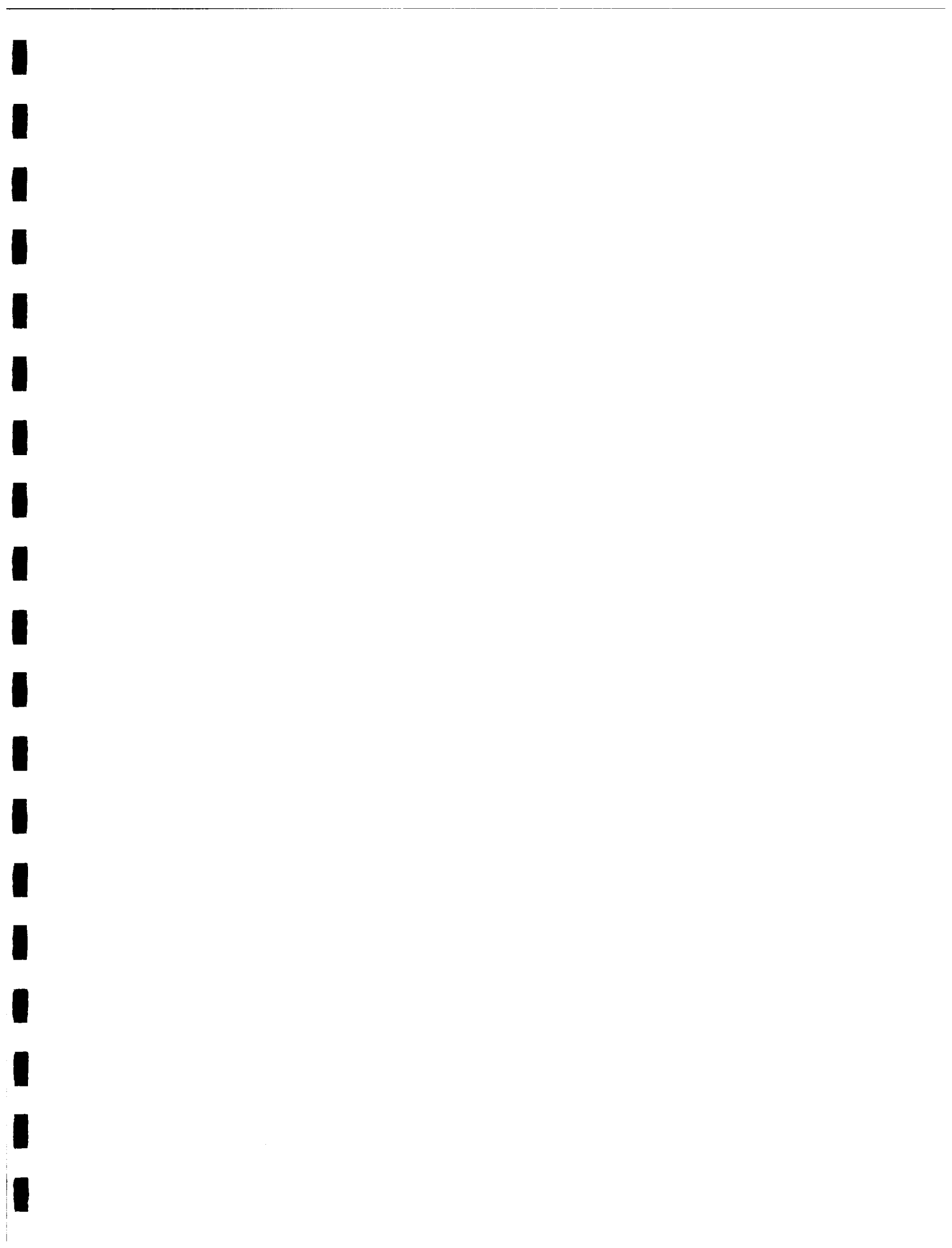


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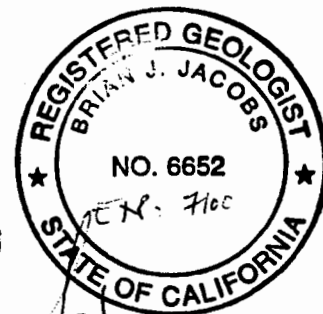
September 28, 1999



**GROUNDWATER MONITORING WELL INSTALLATION REPORT
METROPOLITAN TRANSPORTATION AUTHORITY
DIVISION 6
100 SUNSET AVENUE
VENICE, CALIFORNIA**

**SEPTEMBER 28, 1999
PROJECT NO. 57.09970022.01**

This report presents the results of groundwater monitoring well installation activities conducted at the Metropolitan Transportation Authority Division 6. Work activities were conducted in general accordance with the scope of work described in the "Scope of Services, Contract No. PS 85100532 dated July 15, 1999.



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URS Greiner Woodward Clyde (URSGWC) was retained by the Los Angeles Metropolitan Transportation Authority (MTA) to conduct a subsurface soil and groundwater investigation at the MTA Division 6 bus fueling and maintenance facility (the "Site"). The MTA Bus Yard is located at 100 Sunset Avenue in Venice, California. Refer to Figure 1 for site location. The investigation included collection and analysis of soil samples, the installation of four groundwater monitoring wells, and the collection and analysis of groundwater samples.

This report presents the details of field activities and soil investigation results. The details of groundwater sample collection and groundwater analytical results will be presented in a separate groundwater monitoring report. Well installation and soil sampling activities performed for this investigation were conducted in general accordance with the scope of work included in the proposal dated April 30, 1999; and from the approved workplan by Holguin, Fahan & Associates, Inc. (HFA) dated September 10, 1997. An explanation of the activities performed for this subsurface investigation is presented in this report.

1.1 PURPOSE

The purpose of this investigation was to assess the extent of total petroleum hydrocarbons (TPH) in soil in the vicinity of four former underground storage tanks (USTs) located at the northern portion of the site. The four single-walled steel USTs (two 10,000-gallon diesel, one 8,000-gallon motor oil, and one 6,000-gallon gasoline) were removed on February 23, 1998. The four removed USTs have since been replaced by dual-wall fiberglass USTs. Specific objectives of the investigation included the following:

- Installation of four 4-inch groundwater monitoring wells,
- Evaluate the extent of impacted soil near the former USTs, and
- Characterize the subsurface lithology.

1.2 SCOPE OF WORK

The scope of work for this investigation was completed in accordance with the approved workplan submitted to the Los Angeles Regional Water Quality Control Board (LARWQCB) by HFA on September 10, 1997. The subsurface investigation scope of work is summarized below.

- Preplanning activities included obtaining permits for the installation of the monitoring wells and contacting Underground Service Alert (USA).
- Field activities included the installation of four 4-inch groundwater monitoring wells and the collection of soil samples for laboratory analysis. Soil samples were analyzed for

SECTION ONE

Introduction

total petroleum hydrocarbons as gasoline (TPH-g) and diesel (TPH-d); benzene, toluene, ethylbenzene, and xylenes (BTEX); and methyl-tertiary-butyl ether (MTBE).

- Monitoring wells were developed by surging and removing three borehole volumes of groundwater from each monitoring well.
- Monitoring wells were surveyed for vertical elevations and horizontal coordinates.
- Preparation of this report detailing groundwater monitoring well installation activities and soil laboratory analytical results.

2.1 SITE LOCATION AND SETTING

The site is located at 100 Sunset Avenue, Venice, in Los Angeles County, California at the southeast corner of the intersection of Sunset Avenue and Main Street. The site location is illustrated in Figure 1. The surrounding area is primarily commercial and residential. The surface elevation of the site is approximately 27 feet above mean sea level.

MTA Division 6 operates as a bus maintenance and fueling yard. Until February 28, 1998, the northern portion of the site contained four single-walled steel USTs (two 10,000-gallon diesel, one 8,000-gallon motor oil, and one 6,000-gallon gasoline) used for fueling buses. The USTs were removed on February 23, 1998, and were eventually replaced with four dual-wall fiberglass USTs (two 20,000-gallon diesel, one 8,000-gallon motor oil, and one 6,000-gallon gasoline).

2.2 REGIONAL GEOLOGY AND HYDROGEOLOGY

The site lies within the Ballona Gap region of the Santa Monica Basin. The Ballona gap forms an east-west trending trough that is filled by recent alluvial deposits. The alluvium is composed of interbedded sand, sandy clay, and gravelly sand and has a maximum thickness of 50 feet bgs (CDWR, 1961). The alluvium is underlain by the San Pedro Formation which is composed of stratified sand with beds of fine gravel, silty sand, and silt (CDWR, 1961).

The site is located in the Santa Monica Groundwater Basin. The aquifers found beneath the site are the Ballona and Silverado Aquifers. The Ballona Aquifer is commonly known as the "50-foot gravel" and is composed of gravel and coarse sand. The stratigraphic thickness of the Ballona Aquifer ranges from approximately 10 feet near the coast to approximately 40 feet near Beverly Hills (CDWR, 1961). In the vicinity of the site, the Ballona Aquifer is encountered at an approximate depth of 30 feet bgs (CDWR, 1961). Beneath the site, the Ballona Aquifer is underlain by the Silverado Aquifer which is composed of sand and gravel with small amounts of clay. The Silverado Aquifer ranges in thickness from 100 feet to 280 feet and is found at depths down to 420 feet bgs to 450 feet bgs (CDWR, 1961).

2.3 SITE GEOLOGY AND HYDROGEOLOGY

Soils classification range from silty clay to gravelly sand. Five primary soil types were encountered during groundwater well installation activities and are summarized below:

The uppermost soil type encountered at site is composed predominately of backfill material in the vicinity of the USTs. The backfill material is composed of moist, poorly graded sand in the general area, and pea gravel material in the immediate vicinity of the UST piping. The sandy backfill material extends from the surface to approximately 8 feet bgs.

The soil types encountered below the fill material included silty clay with sand, fine grained silty sand, medium to coarse grained poorly graded sand, and well graded gravelly sand.

Groundwater beneath the site was encountered approximately 24 feet bgs in gravelly sand in wells MW-2, MW-3, and MW-4, and in poorly graded sand in well MW-1.

2.4 PREVIOUS INVESTIGATIONS

Previous environmental site assessments and soil investigations were performed at the MTA Division 6 Bus Yard. A summary of the findings is presented below.

2.4.1 Bentley Company

In January 1996, MTA contracted Bentley Company to perform soil and groundwater sampling at 16 locations near the USTs at the northern portion of the site. The purpose of the investigation was to determine if petroleum hydrocarbons had been released to the subsurface.

Concentrations of TPH-g were detected in soil from the subsurface as high as 1,690 milligrams per kilogram (mg/kg). Benzene was detected in groundwater at a maximum concentration of 0.083 milligrams per liter (mg/L).

2.4.2 Holquin, Fahan and Associates, Inc.

In July 1997, Holquin, Fahan and Associates, Inc. (HFA) performed an additional groundwater investigation. Groundwater samples were collected, via hydropunch, at five locations near the fuel USTs. Groundwater samples had detectable concentrations of TPH-g which ranged from not detected above laboratory limits up to 160,000 micrograms per liter ($\mu\text{g/L}$). Concentrations of benzene were also detected and ranged from 0.5 to 2,900 $\mu\text{g/L}$. MTBE was also detected and ranged from non-detect to 27,000 $\mu\text{g/L}$.

2.4.3 The Tyree Organization, Ltd.

In 1998, The Tyree Organization, Ltd. (Tyree) was contracted by MTA to remove and replace eight USTs at the site. On February 23, 1998, two 10,000-gallon diesel USTs, one 8,000-gallon motor oil UST, and one 6,000 gallon gasoline UST were removed from the northern portion of

SECTION TWO

Site Description

the site. On March 18, 1998, two 300-gallon diesel USTs and one 2,000-gallon used oil LUST were removed from the site. On June 30, 1998, a 500-gallon used oil UST was removed from the site.

At the northern UST portion of the site, soil samples were collected approximately 2 feet below each UST under the supervision of the Los Angeles County Fire Department (LACFD) inspector. Soil samples collected below the diesel tanks were analyzed for TPH-d and BTEX. Soil samples collected below the gasoline tank were analyzed for TPH-g, BTEX, and MTBE. The soil samples collected below the oil tanks were analyzed for total recoverable petroleum hydrocarbons (TRPH) and BTEX. According to the Tyree UST removal report, the majority of the soil samples collected were also analyzed for lead.

Laboratory analysis of the soil samples collected from beneath the USTs at the northern portion of the site detected measurable concentrations of TPH-d, TPH-g, TRPH, toluene, ethylbenzene, xylenes, MTBE, and total lead. TPH-d was detected at the southern ends of the 10,000-gallon diesel tanks at concentrations of 1,740 mg/kg and 5,000 mg/kg. TPH-g was detected in soil samples collected below the gasoline tank at concentrations of 16.3 mg/kg (southern end) and 1,390 mg/kg (northern end). TRPH concentrations of 472 mg/kg (southern end) and 23,600 mg/kg (northern end) were detected in the two samples collected below the 8,000-gallon motor oil UST.

Benzene was not detected in any of the soil samples collected below the USTs. Five of the soil samples collected below the USTs contained detectable concentrations of toluene, ethylbenzene, and xylene components. MTBE was detected in four soil samples collected ranging from 0.492 mg/kg to 46.8 mg/kg.

Total lead concentrations ranging from 45.8 mg/kg to 302 mg/kg were detected in soil samples obtained from beneath the USTs at the northern portion of the site.

SECTION THREE

Field Activities

The groundwater monitoring well installation activities were performed August 9, and 10, 1999. A discussion of the drilling, soil sampling, and well construction activities conducted for this investigation are presented in the following sections.

3.1 PRE-INVESTIGATION ACTIVITIES

Pre-investigation activities conducted prior to mobilizing to the field are described in this section.

3.1.1 Underground Services Alert

USA was contacted on August 4, 1999, to request utility clearance (Ticket No. 511818) by parties with underground utilities adjacent to the site. Thirteen underground utility companies were notified by USA with requests for utility clearance. Utilities in the street were marked. USA did not identify conflicts with the proposed drilling locations and existing utilities.

3.1.2 Permits

URSGWC submitted a monitoring well installation permit package on August 4, 1999, to the LADHS. The permit application was approved on August 10, 1999. A copy of the permit is provided in Appendix A.

3.2 WELL INSTALLATION

The locations of wells installed during this investigation are shown on Figure 2. Groundwater monitoring well boring logs are provided in Appendix B.

3.2.1 Well Soil Borings and Sampling Activities

Well installation activities commenced on August 9 with saw-cutting the concrete pavement at each groundwater monitoring well location (Appendix C, Photo 1). BC2 Environmental Corporation (BC2) of Fullerton, California advanced four well borings (MW-1 through MW-4) at the site on August 9, and 10, 1999. The first 10 feet of each boring was advanced by using a hand-auger drill to clear the boring location of underground utilities and/or underground obstructions. The borings were completed to depths of approximately 47 feet bgs by using a CME-75 drill rig equipped with 10.25-inch outside diameter hollow-stem augers. Photographs 2 through 8 in Appendix C document well installation activities. All drilling and sampling activities were conducted under the direct supervision of a URSGWC, California Registered Geologist (Mr. Brian J. Jacobs, California Registered Geologist No. 6652).

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Each well was constructed by suspending the well casing and screen approximately two feet above the bottom of the borehole (45 feet bgs) to ensure a plumb casing. The filter pack (0/30

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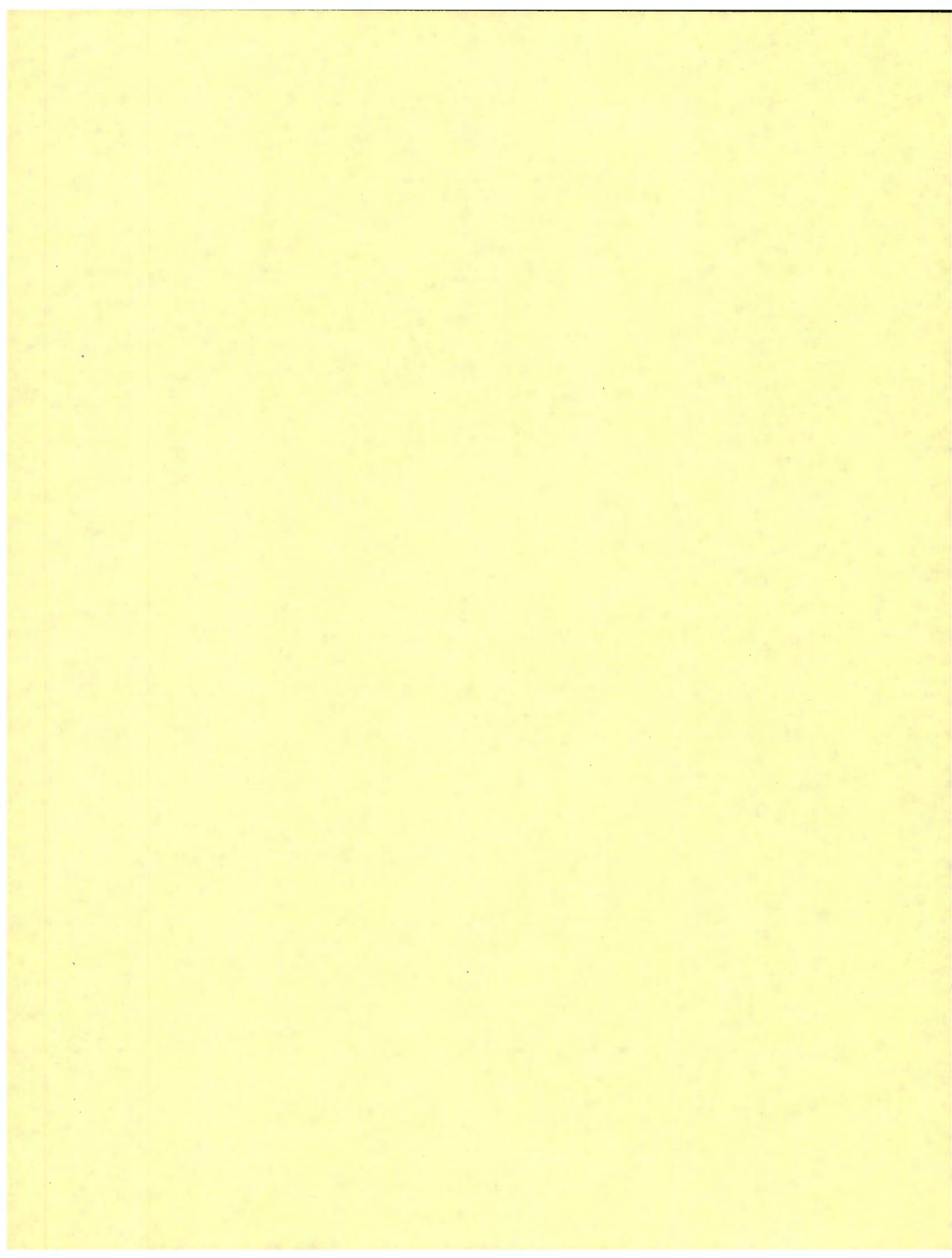


Table 1

**Groundwater Monitoring Well Construction Details
MTA Division 6
August 1999**

Well	Date Installed	Well Diameter (inches)	Casing Elevation (feet, msl)	Total Depth (feet)	Screen Interval (feet, bgs)
MW-1	8/10/99	4	27.07	45	15-45
MW-2	8/10/99	4	27.69	45	15-45
MW-3	8/10/99	4	27.24	45	15-45
MW-4	8/9/99	4	25.96	45	15-45

Table 2

**Summary of Soil Analytical Results
MTA Division 6
August 1999**

Sample Number	Date	Depth (feet, bgs)	TPH-d (mg/kg)	TPH-g (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)
MW-1-10'	8/10/99	10	2500	790	ND	ND	ND	940	ND
Dup-1	8/10/99	10	ND	0.83	ND	ND	ND	5.8	ND
MW-1-15'	8/10/99	15	ND	ND	ND	ND	ND	ND	27
MW-1-20'	8/10/99	20	ND	ND	ND	ND	ND	ND	32
MW-1-23'	8/10/99	23	ND	ND	ND	ND	ND	ND	17
MW-2-10'	8/10/99	10	930	ND	ND	ND	ND	ND	ND
MW-2-15'	8/10/99	15	ND	ND	ND	ND	ND	ND	ND
MW-2-20'	8/10/99	20	ND	ND	ND	ND	ND	ND	ND
MW-2-23'	8/10/99	23	ND	ND	ND	ND	ND	ND	ND
MW-3-10'	8/10/99	10	ND	ND	ND	ND	ND	ND	ND
MW-3-15'	8/10/99	15	ND	ND	ND	ND	ND	ND	ND
MW-3-20'	8/10/99	20	ND	ND	ND	ND	ND	ND	ND
MW-3-23'	8/10/99	23	ND	ND	ND	ND	ND	ND	ND
MW-4-10'	8/9/99	10	ND	ND	ND	ND	ND	6.4	9.5
MW-4-15'	8/9/99	15	ND	ND	ND	ND	ND	ND	6.5
MW-4-20'	8/9/99	20	ND	ND	ND	ND	ND	ND	ND
MW-4-23'	8/9/99	23	ND	ND	ND	ND	ND	ND	ND
Reporting Limit			5	0.5	5	5	5	5	5

Notes:

TPH-d = Total petroleum hydrocarbons as diesel by EPA Method 8015 modified in milligrams per kilogram (mg/kg).

TPH-g = Total petroleum hydrocarbons as gasoline by EPA Method 8015 modified in mg/kg.

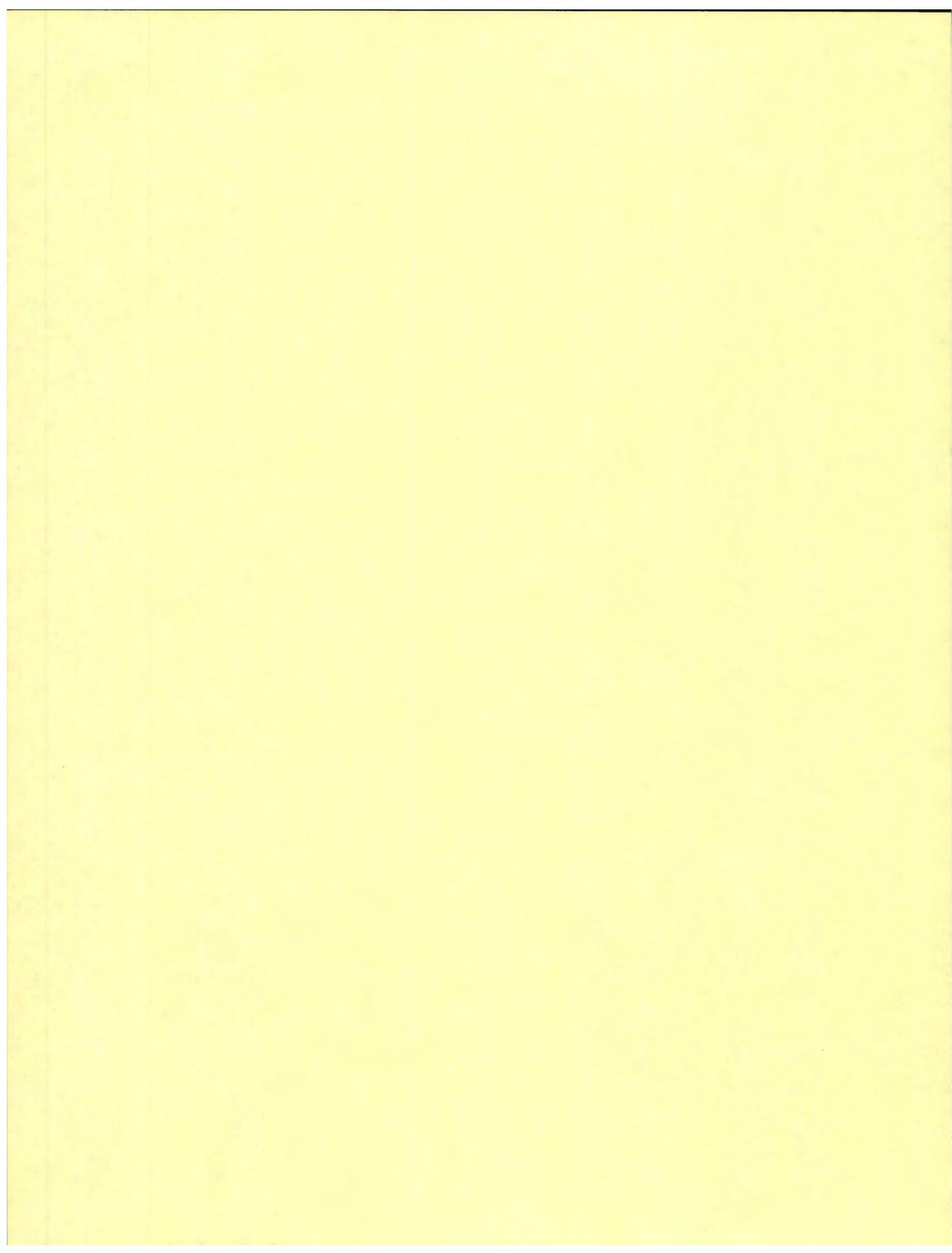
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes by EPA Method 8260B in micrograms per kilogram (µg/kg).

MTBE = methyl tert-butyl ether by EPA Method 8260B in µg/kg.

bgs = below ground surface.

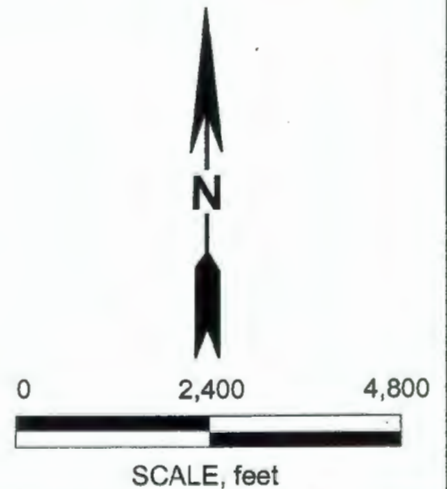
Dup-1 = Field duplicate sample of MW-1-10

ND = Not detected.





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SITE LOCATION MAP - 100 SUNSET AVENUE, VENICE, CA

Project No.: 5709970022	Date: SEPTEMBER 1999	Project: MTA - DIVISION 6	Fig. 1
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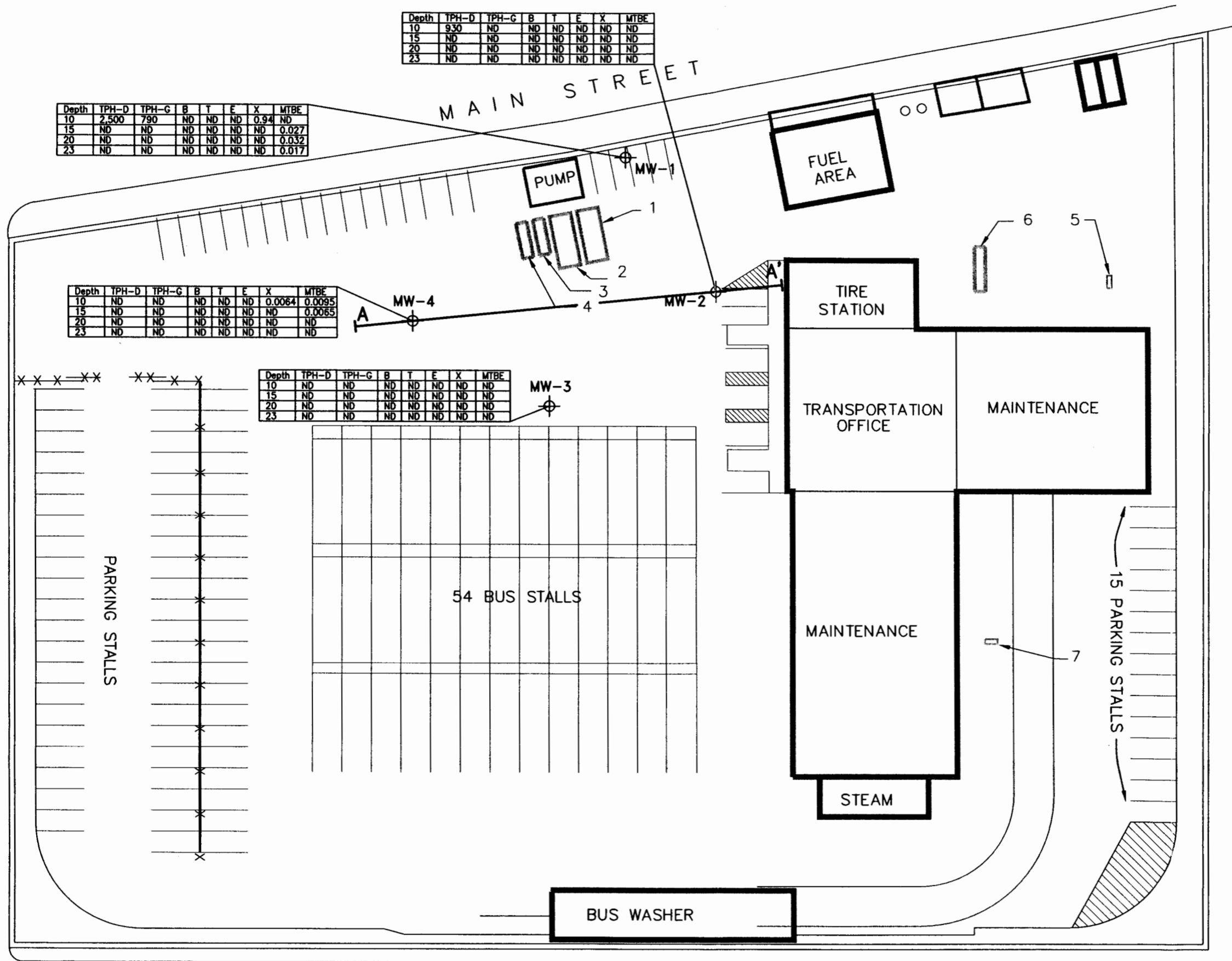
SUNSET AVE.

Depth	TPH-D	TPH-G	B	T	E	X	MTBE
10	930	ND	ND	ND	ND	ND	ND
15	ND	ND	ND	ND	ND	ND	ND
20	ND	ND	ND	ND	ND	ND	ND
23	ND	ND	ND	ND	ND	ND	ND

Depth	TPH-D	TPH-G	B	T	E	X	MTBE
10	2,500	790	ND	ND	ND	0.94	ND
15	ND	ND	ND	ND	ND	0.027	ND
20	ND	ND	ND	ND	ND	0.032	ND
23	ND	ND	ND	ND	ND	0.017	ND

Depth	TPH-D	TPH-G	B	T	E	X	MTBE
10	ND	ND	ND	ND	ND	0.0064	0.0095
15	ND	ND	ND	ND	ND	ND	0.0065
20	ND	ND	ND	ND	ND	ND	ND
23	ND	ND	ND	ND	ND	ND	ND

Depth	TPH-D	TPH-G	B	T	E	X	MTBE
10	ND	ND	ND	ND	ND	ND	ND
15	ND	ND	ND	ND	ND	ND	ND
20	ND	ND	ND	ND	ND	ND	ND
23	ND	ND	ND	ND	ND	ND	ND



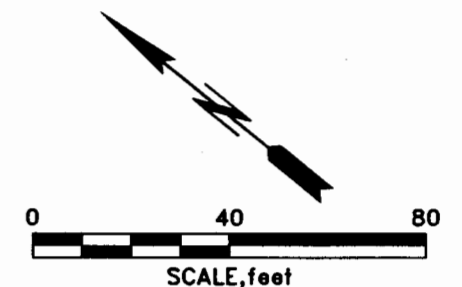
TANK DESCRIPTION

- ① DIESEL TANK =20,300 GAL.
- ② DIESEL TANK =20,300 GAL.
- ③ MOTOR OIL =8,000 GAL.
- ④ UNLEADED GAS=6,000 GAL.
- ⑤ WASTE OIL =2,000 GAL.
- ⑥ DIESEL TANK =20,300 GAL.
- ⑦ WASTE OIL =2,000 GAL.

LEGEND

- MW-1 LOCATION OF MONITORING WELLS
- DEPTH DEPTH OF SAMPLE IN FEET BELOW GROUND SURFACE
- A A' GEOLOGIC CROSS SECTION INTERPRETATION, REFER TO FIGURE 3
- TPH-D TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY EPA METHOD 8015 MODIFIED IN MILLIGRAMS PER KILOGRAMS (mg/kg)
- TPH-G TOTAL PETROLEUM HYDROCARBONS AS GASOLINE BY EPA METHOD 8015 MODIFIED IN MILLIGRAMS PER KILOGRAMS (mg/kg)
- BTEX ENZENE, TOLUENE, ETHYLBENZENE AND XYLENES BY EPA METHOD 8260B IN MILLIGRAMS PER KILOGRAMS (mg/kg)
- MTBE METHYL-TERTIARY- BUTYL- ETHER BY EPA METHOD 8260B IN MILLIGRAMS PER KILOGRAMS (mg/kg)
- ND NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT

THORNTON P.L.



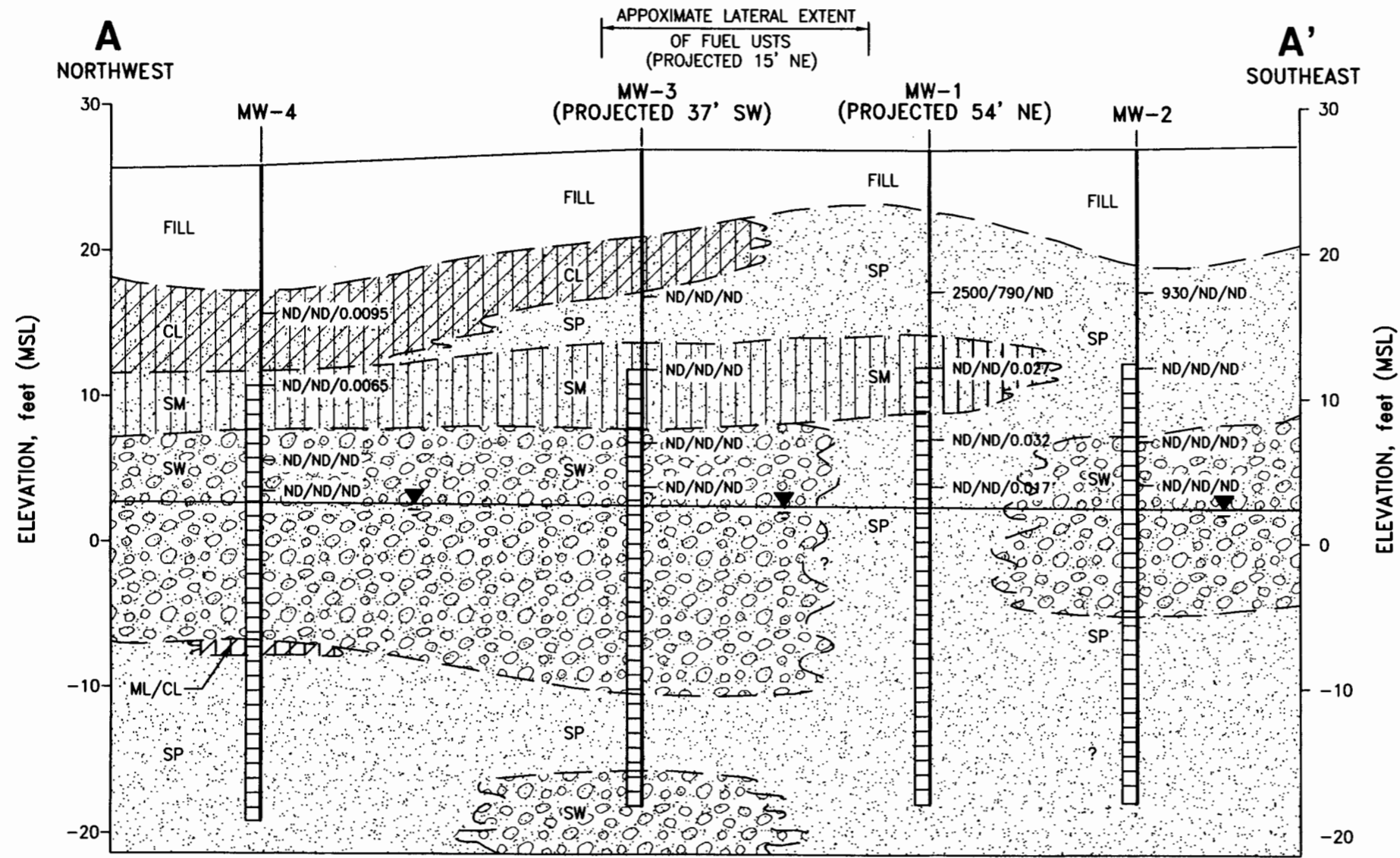
URS Greiner Woodward Clyde

SITE PLAN WITH SOIL ANALYTICAL RESULTS
 MTA - DIVISION 8
 100 SUNSET AVE., VENICE CA.

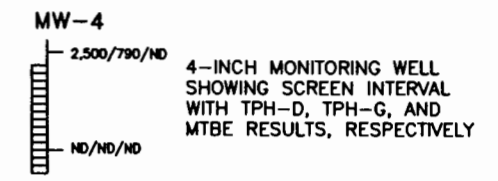
Proj. No.: 5709970022.01	Date: SEPT. 1999
Project:	CAD ID.: SO-REPORT
MTA - DIV 8	Figure: 2

PACIFIC AVENUE

FILE NAME: I:\99\9970022\SECTION\GEO-XAA.dwg DATE: 09/24/99 TIME: 12:43



LEGEND



▽ GROUNDWATER POTENTIOMETRIC SURFACE (8/12/99)

TPH-D TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY EPA METHOD 8015 MODIFIED IN MILLIGRAMS PER KILOGRAMS (mg/kg)

TPH-G TOTAL PETROLEUM HYDROCARBONS AS GASOLINE BY EPA METHOD 8015 MODIFIED IN MILLIGRAMS PER KILOGRAMS (mg/kg)

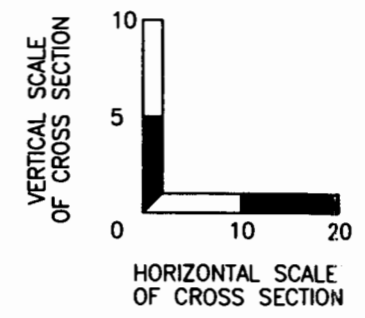
MTBE METHYL-TERTIARY-BUTYL-ETHER BY EPA METHOD 8260B IN MILLIGRAMS PER KILOGRAMS (mg/kg)

ND NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT

? INFERED

- FILL (SAND, PEA GRAVEL)
- CL (SANDY SILTY CLAY)
- SM (SILTY SAND)
- SP (SAND)
- ML/CL (SILTY CLAY)
- SW (GRAVELLY SAND)

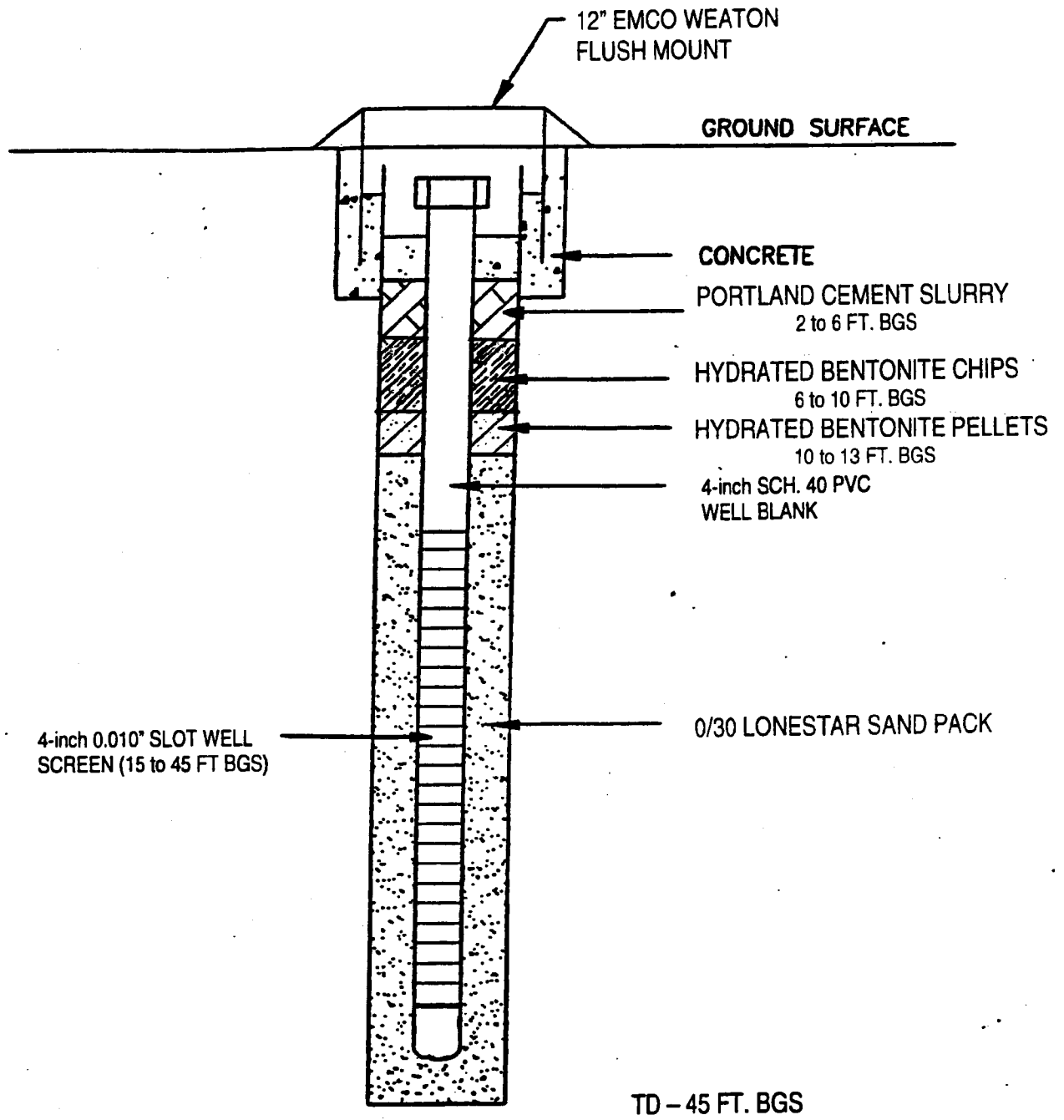
NOTE: MONITORING WELLS COMPLETED WITH 4 INCH SCHEDULE 40 PVC



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GEOLOGIC CROSS SECTION A - A'
 MTA - DIVISION 6
 100 SUNSET AVE., VENICE CA.

Proj. No.: 5709970022.01	Date: SEPT. 1999
Project: MTA - DIV 6	CAD ID.: GEO-XAA
	Figure: 3



NOT TO SCALE

MONITORING WELL DETAIL

Project No.: 57.09970022.01

Date: SEPT 1999

Project: MTA - DIVISION 6

Figure 4

Appendix A
Groundwater Well Installation Permit

FOR FOUR MONITORING WELLS CONSTRUCTION

APPLICATION FOR WELL PERMIT

ENVIRONMENTAL HEALTH 2525 Corporate Place Monterey Park, Ca 91754

COUNTY OF LOS ANGELES DEPARTMENT OF HEALTH SERVICES

DATE 8/3/99

DESCRIPTION	TYPE OF PERMIT (CHECK)	TYPE OF WELL	
	<input checked="" type="checkbox"/> NEW WELL CONSTRUCTION	<input type="checkbox"/> PRIVATE DOMESTIC	<input type="checkbox"/> CATHODIC
	<input type="checkbox"/> RECONSTRUCTION OR RENOVATION	<input type="checkbox"/> PUBLIC DOMESTIC	<input type="checkbox"/> INDUSTRIAL
	<input type="checkbox"/> DESTRUCTION	<input type="checkbox"/> IRRIGATION	<input type="checkbox"/> GRAVEL PACK
		<input checked="" type="checkbox"/> OBSERVATION/MONITORING	<input type="checkbox"/> TEST
	TYPE OF CASING		
	<u>2 1/2 inch schedule 40 PVC - (4 - GROUNDWATER MONITORING WELLS)</u>		
	METHOD OF SEALING OF CASING		
	<u>2 to 3 feet of hydrated bentonite PELLETS, Hydrated bentonite chips to 2 to 3' below SURFACE, CONCRETE + Wall Box AT SURFACE</u>		
	METHOD OF DESTRUCTION		
	/		

ADDRESS (NUMBER, STREET, AND NEAREST INTERSECTION)	CITY
<u>100 SUNSET AVE.</u>	<u>VENICE</u>

DIAGRAM (SHOW PROPERTY LINES, STREET, ADDRESS, WELL SITE, SEWERS, AND PRIVATE SEWAGE DISPOSAL SYSTEMS ALONG WITH LABELS AND DIMENSIONS)

SEE ENCLOSED MAP

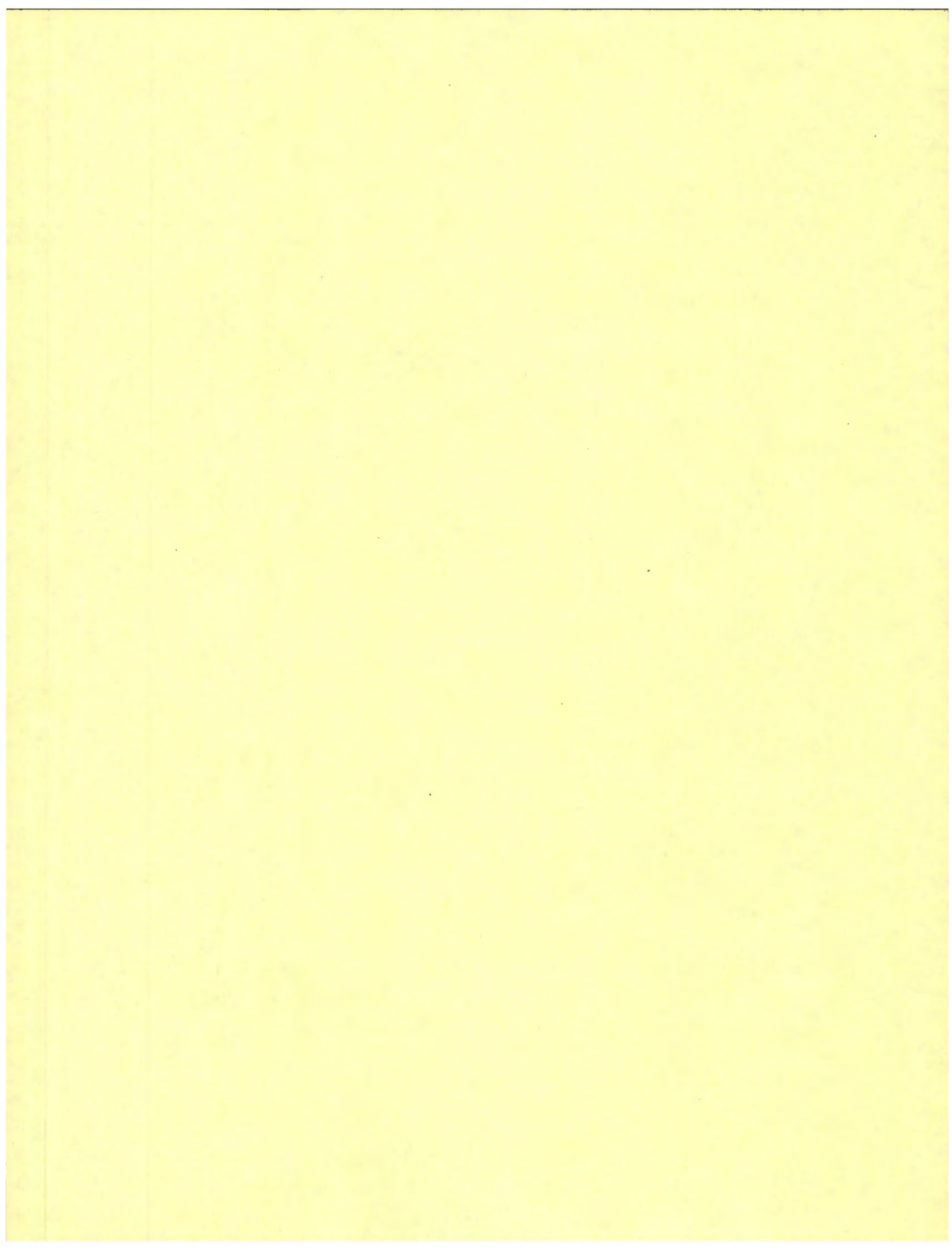
TD 45'
Screen 15-45
WT. 23'

NAME OF WELL DRILLER (PRINT)	NAME OF WELL OWNER (PRINT)
<u>BC2 ENVIRONMENTAL CORP - SAMUELSON</u> ^{KURT}	<u>L.A. COUNTY METROPOLITAN TRANSPORTATION AUTHORITY</u>
TRADE NAME	MAILING ADDRESS
<u>BC2 ENVIRONMENTAL CORP</u>	<u>ONE GATEWAY PLAZA, 12th FLOOR</u>
BUSINESS ADDRESS	CITY
<u>1635 EAST DAWNS WAY FULLERTON</u>	<u>LOS ANGELES CA 90012-2952</u>

APPLICANT	<p>I hereby agree to comply in every respect with all regulations of the County Preventive/Public Health Services and with all ordinances and laws of the County of Los Angeles and of the State of California pertaining to well construction, reconstruction and destruction. Upon completion of well and within ten days thereafter, I will furnish the County Preventive/Public Health Services with a complete log of the well, giving date drilled, depth of well, all perforations in casing, and any other data deemed necessary by such County Preventive/Public Health Services.</p> <p style="text-align: center;"><u>[Signature]</u> Applicant's Signature</p>	DISPOSITION OF APPLICATION: (For Sanitarians Use Only)
		<input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> DENIED <input type="checkbox"/> APPROVED WITH CONDITIONS
		If denied or approved with conditions, report reason or conditions here: <u>Done on 8/9/99 & 8/10/99</u> <u>GAVE permit - to Jeff ENGELS</u> <u>in person</u>
		DATE <u>Aug 10, 99</u> SANITARIAN <u>Michael Lin</u> SECTION CHIEF

ENTERED

When signed by Section Chief, this application is a permit.



Appendix B
Groundwater Monitoring Well Boring Logs

Project: MTA Division 6
 Project Location: 100 Sunset Avenue, Venice, California
 Project Number: 57-09970022.01

Key to Log of Boring

Sheet 1 of 1

Elevation, feet	Depth, feet	SAMPLES				Graphic Log	MATERIAL DESCRIPTION	Well Completion Schematic	Headspace OVA, ppm	Background OVA, ppm	Drilling Progress, 24-hour clock	REMARKS
		Type	Number	Sampling Resistance, blows/foot								
1	2	3	4	5	6	7	8	9	10	11	12	

COLUMN DESCRIPTIONS

- 1 Elevation:** Elevation in feet relative to mean sea level (MSL).
- 2 Depth:** Depth in feet below the ground surface.
- 3 Sample Type:** Type of soil sample collected at depth interval shown; sampler symbols are explained below.
- 4 Sample Number:** Sample identification number; [R]=retained.
- 5 Sampling Resistance:** Number of blows required to advance driven sampler 12 inches beyond the first 6-inch drive interval, or distance noted, using a 140-lb hammer with a 30-inch drop. "NA" indicates data not available.
- 6 Graphic Log:** Graphic depiction of subsurface material encountered; typical symbols are explained below.

- 7 Material Description:** Description of material encountered; may include color, moisture, grain size, and density/consistency.
- 8 Well Completion Schematic:** Schematic depiction of well installation; materials are listed in header block; graphic symbols are explained below.
- 9 Headspace OVA:** Organic vapor analyzer field sample headspace reading in parts per million (ppm).
- 10 Background OVA:** Organic vapor analyzer background reading in parts per million (ppm).
- 11 Drilling Progress:** Time (in 24-hour clock) at sampling and other events during downhole advance.
- 12 Remarks:** Comments and observations regarding drilling or sampling made by driller or field personnel.

TYPICAL SOIL GRAPHIC SYMBOLS

	SAND (SP)		SAND (SW)		SAND with silt (SP-SM)		Silty SAND (SM)
	CLAY (CL)		CLAY (CH)		Silty CLAY (CL)		Clayey SAND (SC)
	SILT (ML)		Clayey SILT (ML)		GRAVEL (GP)		GRAVEL (GW)

TYPICAL WELL GRAPHIC SYMBOLS

	Blank casing in concrete		Blank casing in hydrated bentonite pellets
	Blank casing Portland cement slurry		Blank casing in filter sand
	Blank casing in bentonite chips		Slotted casing in filter sand

TYPICAL SAMPLER GRAPHIC SYMBOLS

	Modified California split spoon (2-inch-ID)		Hand auger sampler (tube-lined)
	SPT split spoon (1.5-inch-ID, unlined)		No recovery for sampled interval
	Geoprobe Macrocore sampler		Grab sample

OTHER GRAPHIC SYMBOLS

- First water encountered at time of drilling (ATD)
- Static water level measured in well
- Change in material properties within a stratum
- Inferred contact between strata or gradational change in lithology

GENERAL NOTES

- Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive; actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
- Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

Project: MTA Division 6
 Project Location: 100 Sunset Avenue, Venice, California
 Project Number: 57-09970022.01

Log of Boring / Well MW-1
 Sheet 1 of 2

Date(s) Drilled	8/9/99 and 8/10/99	Logged By	J. Engels	Checked By	C. Wasteney
Drilling Method	Hollow-Stem Auger	Drilling Contractor	BC ² Environmental Corp.	Total Depth of Borehole	47.0 feet
Drill Rig Type	CME 75	Drill Bit Size/Type	10-1/4-inch-OD auger bit	Surface Elevation	27.35 feet MSL
Groundwater Level and Date	23.5 feet during drilling; 24.41 feet after 24 hrs	Sampling Method(s)	Modified California split spoon	Top of PVC Elevation	27.07 feet MSL
Diameter of Hole (inches)	10-1/4	Diameter of Well (inches)	4	Type of Well Casing	Schedule 40 PVC
Type of Sand Pack	Gordon Sand Co. #0/30 Lonestar	Type and Depth of Seal(s)	Hydrated bentonite pellets 13-10 ft, Pure Gold bentonite chips 10-6 ft, Portland cement grout 6-2 ft, concrete 2 ft to surface with well box		
Comments	Flushmount completion; cemented well box at surface.				

Elevation, feet	Depth, feet	SAMPLES		MATERIAL DESCRIPTION	Well Completion Schematic	Headspace OVA, ppm	Background OVA, ppm	Drilling Progress, 24-hour clock	REMARKS
		Type Number	Sampling Resistance, blows/foot						
0	0			Concrete 10 inches thick					Hand auger to 10 ft on 8/9/99.
25	5			Moist, light brown, poorly graded GRAVEL (GP), pea-size [Fill]					
20	10	1 [R]	36	Moist, dark brown, poorly graded SAND (SP), fine- to medium-grained, trace gravel; strong hydrocarbon odor		190	0	1245	Hydrocarbon odor at 4 ft.
15	15	2 [R]	43	Dense, with trace silt, no gravel; strong hydrocarbon odor		260	0	1615	Begin drilling with HSA rig on 8/10/99. Duplicate sample DUP-1 also collected at 10 ft.
10	20	3 [R]	41	Dense, moist, dark brown, silty SAND (SM), fine- to medium-grained, trace coarse-grained sand and gravel to 1/4 inch; strong hydrocarbon odor		120	0	1620	
5	25	4 [R]	43	Dense, moist, dark brown, poorly graded SAND (SP), medium- to coarse-grained, with gravel to 1/2 inch; hydrocarbon odor		22	0	1624	
0	30			Increase in coarse-grained sand Becomes wet; slight hydrocarbon odor		63	0	1627	Groundwater encountered at 23.5 ft.

Report: ENV_1W_SNA; File: MTADIV06.GPJ; 9/14/99

Project: MTA Division 6
 Project Location: 100 Sunset Avenue, Venice, California
 Project Number: 57-09970022.01

Log of Boring / Well MW-1

Sheet 2 of 2

Elevation, feet	Depth, feet	SAMPLES			MATERIAL DESCRIPTION	Well Completion Schematic	Headspace OVA, ppm	Background OVA, ppm	Drilling Progress, 24-hour clock	REMARKS
		Type	Number	Sampling Resistance, blows/foot						
30	5	44		Dense, wet, brown, poorly graded SAND, increase in coarse-grained sand, gravel to 1 inch; strong hydrocarbon odor		290	0	1632		
-5	35	6		Wet, grades finer, trace gravel to 1/4 inch; hydrocarbon odor		40	0	1639	Heaving sands.	
-10	40	7		Wet, grades finer, trace gravel; hydrocarbon odor		38	0	1645		
-15	45	NR	NA			--	--	1650	No recovery in drive interval 45-46.5 ft.	
-20	Boring sampled to 46.5 feet, reamed to 47 feet									
50										
-25										
55										
-30										
60										
-35										
65										
-40										
70										

Report: ENV_1W_SNA; File: MTADIV06.GPJ; 9/14/99

Project: MTA Division 6
 Project Location: 100 Sunset Avenue, Venice, California
 Project Number: 57-09970022.01

Log of Boring / Well MW-2

Sheet 1 of 2

Date(s) Drilled	8/9/99 and 8/10/99	Logged By	J. Engels	Checked By	C. Wasteneys
Drilling Method	Hollow-Stem Auger	Drilling Contractor	BC ² Environmental Corp.	Total Depth of Borehole	47.0 feet
Drill Rig Type	CME 75	Drill Bit Size/Type	10-1/4-inch-OD auger bit	Surface Elevation	27.80 feet MSL
Groundwater Level and Date	23.5 feet during drilling; 25.02 feet after 24 hrs	Sampling Method(s)	Modified California split spoon	Top of PVC Elevation	27.69 feet MSL
Diameter of Hole (inches)	10-1/4	Diameter of Well (inches)	4	Type of Well Casing	Schedule 40 PVC
Type of Sand Pack	Gordon Sand Co. #0/30 Lonestar	Type and Depth of Seal(s)	Hydrated bentonite pellets 13-10 ft, Pure Gold bentonite chips 10-6 ft, Portland cement grout 6-2 ft, concrete 2 ft to surface with well box		
Comments	Flushmount completion; cemented well box at surface.				

Elevation, feet	Depth, feet	SAMPLES		Graphic Log	MATERIAL DESCRIPTION	Well Completion Schematic	Headspace OVA, ppm	Background OVA, ppm	Drilling Progress, 24-hour clock	REMARKS
		Type	Number							
0					Concrete 7 inches thick					
					Moist, light brown, poorly graded SAND (SP), trace gravel and asphalt fragments [Fill]				1130	Hand auger to 10 ft on 8/9/99.
25										
	5									
	20				Dense, moist, dark brown, poorly graded SAND (SP), fine- to medium-grained, trace silt; no odor				1230	
	10	1 [R]	34				1	0	1326	Begin drilling with HSA rig on 8/10/99.
	15									
	15	2 [R]	35		Grades coarser, with coarse-grained sand and gravel 1/4 to 1/2 inch diameter; hydrocarbon odor		70	0	1330	
	20									
	20	3 [R]	36		Dense, moist, dark brown, gravelly well-graded SAND (SW), fine- to coarse-grained sand, gravel 1/4 to 1 inch; hydrocarbon odor		30	0	1338	
	5									
	5	4 [R]	40		Grades finer, increase in fine-grained sand, decrease in gravel		20	0	1342	
					Becomes wet; slight hydrocarbon odor					Groundwater encountered at 23.5 ft.
	25									
	0									
	30									

Report: ENV-1W_SNA, File: MTADIV06.GPJ, 9/14/99

Project: MTA Division 6
 Project Location: 100 Sunset Avenue, Venice, California
 Project Number: 57-09970022.01

Log of Boring / Well MW-2

Sheet 2 of 2

Elevation, feet	Depth, feet	SAMPLES			Graphic Log	MATERIAL DESCRIPTION	Well Completion Schematic	Headspace OVA, ppm	Background OVA, ppm	Drilling Progress, 24-hour clock	REMARKS
		Type	Number	Sampling Resistance, blows/foot							
30		5	30		<p>▼ Becomes light brown, coarser-grained, with trace fines</p> <p>Dense, wet, light brown, well-graded SAND (SW) with gravel, trace fines, hydrocarbon odor (continued)</p>		4	0	1350		
-5					Dense, wet, light brown, poorly graded SAND (SP), medium- to coarse-grained, trace gravel to 1/4 inch						
35		6	50				2	0			
-10		NR	NA				-	-		Heaving sands. No recovery in drive interval 40-41.5 ft.	
40		NR	NA				-	-		No recovery in drive interval 45-46.5 ft.	
-15											
45		NR	NA				-	-			
-20											
					Boring sampled to 46.5 feet, reamed to 47 feet						
50											
-25											
55											
-30											
60											
-35											
65											
-40											
70											

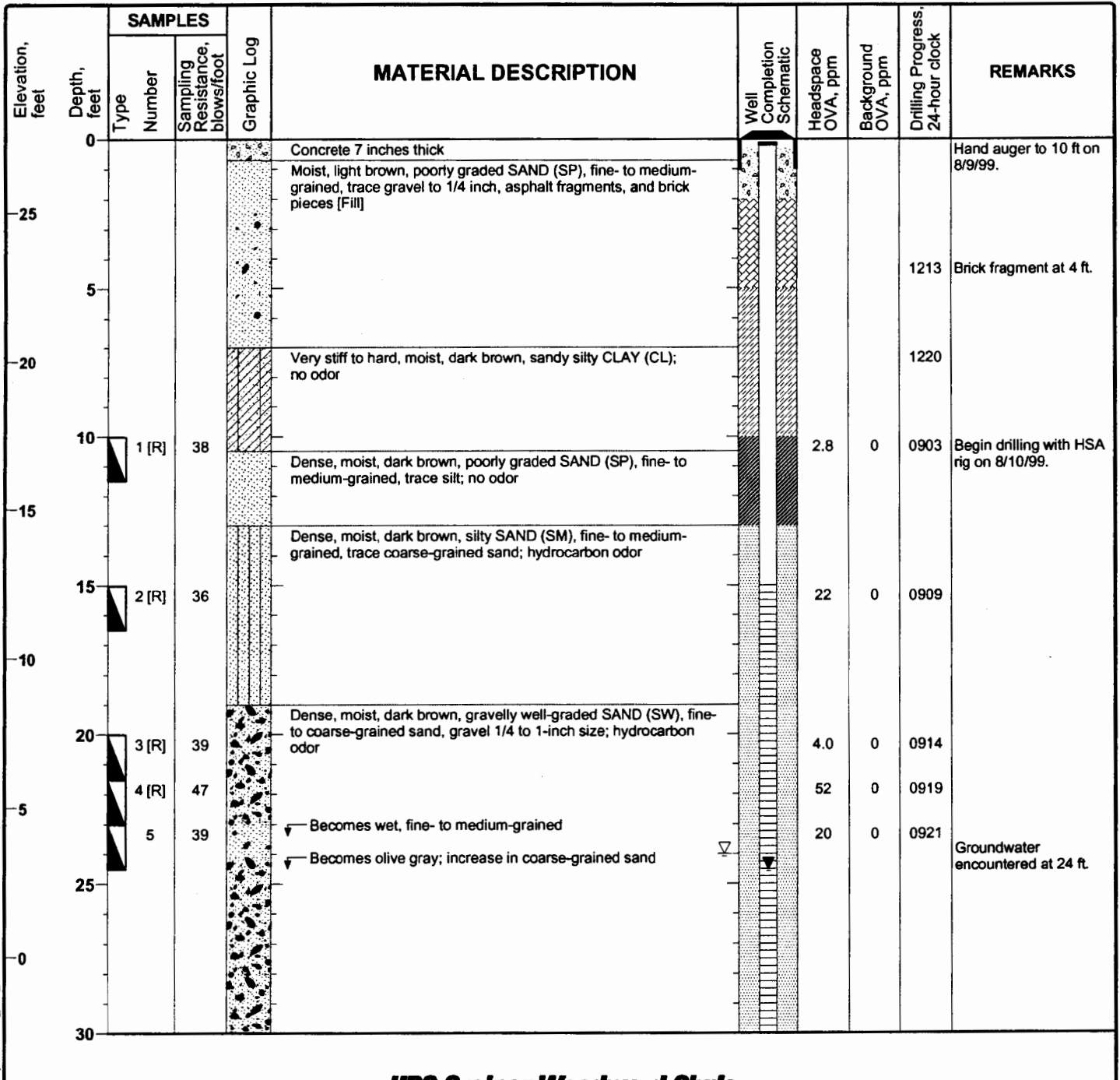
Report: ENV_1W_SNA; File: MTADIV06.GPJ; 9/14/99

Project: MTA Division 6
 Project Location: 100 Sunset Avenue, Venice, California
 Project Number: 57-09970022.01

Log of Boring / Well MW-3

Sheet 1 of 2

Date(s) Drilled	8/9/99 and 8/10/99	Logged By	J. Engels	Checked By	C. Wasteneys
Drilling Method	Hollow-Stem Auger	Drilling Contractor	BC ² Environmental Corp.	Total Depth of Borehole	47.0 feet
Drill Rig Type	CME 75	Drill Bit Size/Type	10-1/4-inch-OD auger bit	Surface Elevation	27.45 feet MSL
Groundwater Level and Date	24 feet during drilling; 24.51 feet after 24 hrs	Sampling Method(s)	Modified California split spoon	Top of PVC Elevation	27.24 feet MSL
Diameter of Hole (inches)	10-1/4	Diameter of Well (inches)	4	Type of Well Casing	Schedule 40 PVC
Type of Sand Pack	Gordon Sand Co. #0/30 Lonestar	Type and Depth of Seal(s)	Hydrated bentonite pellets 13-10 ft, Pure Gold bentonite chips 10-5 ft, Portland cement grout 5-2 ft, concrete 2 ft to surface with well box		
Comments	Flushmount completion; cemented well box at surface.				



Project: MTA Division 6
 Project Location: 100 Sunset Avenue, Venice, California
 Project Number: 57-09970022.01

Log of Boring / Well MW-3

Sheet 2 of 2

Elevation, feet	Depth, feet	SAMPLES		Graphic Log	MATERIAL DESCRIPTION	Well Completion Schematic	Headspace OVA, ppm	Background OVA, ppm	Drilling Progress, 24-hour clock	REMARKS
		Type	Number							
30	6	36			Dense, wet, brown, well-graded SAND (SW), fine- to coarse-grained, trace gravel; no odor		2.4	0	0926	
-5										
35	7	41			Increase in gravel, 1/4 to 1 inch diameter		4.0	0	0931	
-10										
40	8	52			Very dense, wet, light brown, poorly graded SAND (SP), fine- to medium-grained, trace silt and coarse-grained sand		2.4	0	0935	
-15										
45	9	40			Dense, wet, light brown, well-graded SAND (SW), fine- to coarse-grained, trace gravel to 1/4 inch		3.5	0	0938	
-20					Boring sampled to 46.5 feet, reamed to 47 feet					
50										
-25										
55										
-30										
60										
-35										
65										
-40										
70										

Report: ENV_1W_SNA; File: MTADIV06.GPJ; 9/14/99

Project: MTA Division 6
 Project Location: 100 Sunset Avenue, Venice, California
 Project Number: 57-09970022.01

Log of Boring / Well MW-4

Sheet 2 of 2

Elevation, feet	Depth, feet	SAMPLES			MATERIAL DESCRIPTION	Well Completion Schematic	Headspace OVA, ppm	Background OVA, ppm	Drilling Progress, 24-hour clock	REMARKS
		Type	Number	Sampling Resistance, blows/foot						
30			13	40	Dense, wet, light gray, well-graded SAND (SW) with gravel; no odor (continued) ↙ Increase in fines, decrease in gravel		0	0	1505	
-5			14	40						
			15	36	Hard, moist, brown, clayey SILT to silty CLAY (ML/CL); no odor				1514	
	35		16	38	Dense, wet, light brown, poorly graded SAND (SP), fine- to medium-grained; no odor ↙ Becomes medium- to coarse-grained, with gravel to 1/4 inch		0	0	1520	Heaving sands.
-10			17	31						
			18	30	↙ With gravel to 1/2 inch				1534	
	40		19	40	↙ With gravel 1/2 to 1 inch diameter		0	0	1538	
-15			20	30						
			21	41	↙ Becomes less coarse, fine- to coarse-grained sand, fine gravel				1550	
45										
-20					Boring sampled to 44.5 feet, reamed to 47 feet					
	50									
-25										
	55									
-30										
	60									
-35										
	65									
-40										
	70									

Report: ENV_1W_SNA; File: MTADIV06.GPJ; 9/14/99

Appendix C
Photo Log



Photo 1

Date: 8/9/99

Comments:

**Saw-cutting
the concrete
pavement at
monitoring
well MW-4
location.**



Photo 2

Date: 8/9/99

Comments:

**Soil sampling
with the
hollow-stem
auger drill rig
at monitoring
well MW-4
location.**



Photo 3

Date: 8/9/99

Comments:

**Installing
monitoring
well MW-4.**



Photo 4

Date: 8/9/99

Comments:

**Applying sand
filter pack
around
monitoring
well MW-4.**



Photo 5

Date: 8/10/99

Comments:

Installing monitoring well MW-3.

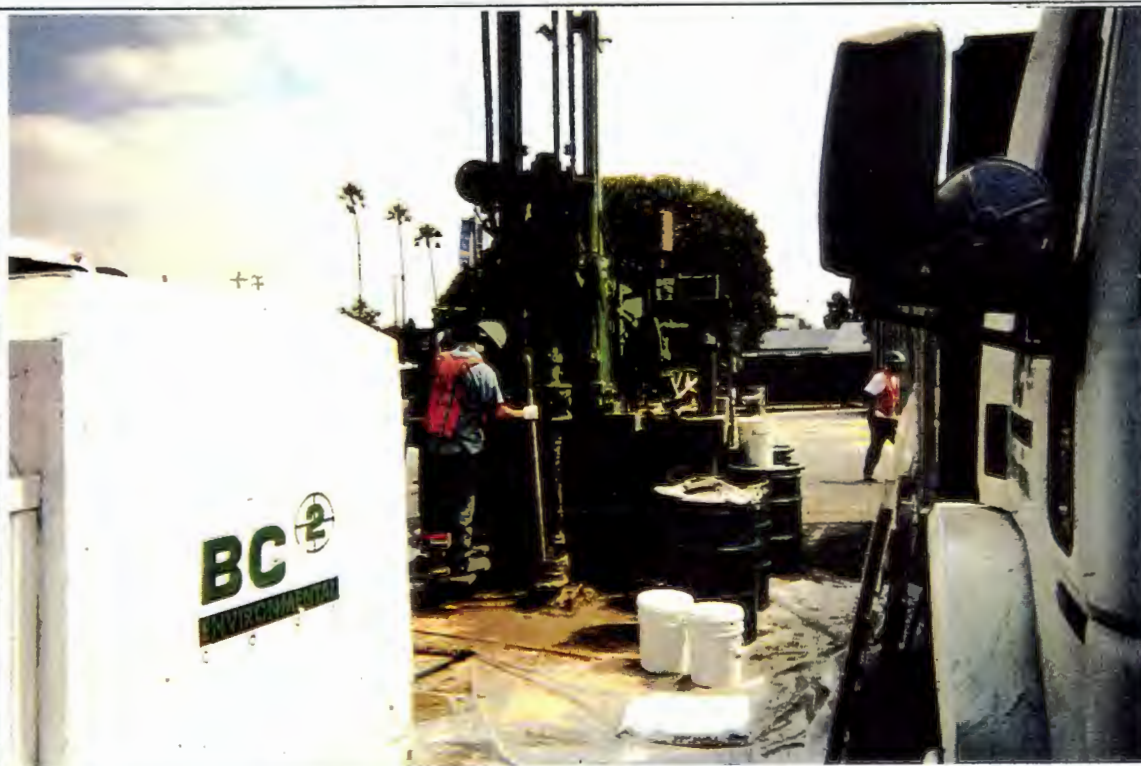


Photo 6

Date: 8/10/99

Comments:

Using the drill rig to oscillate a surge block inside MW-3 to pack filter sand around the outside of the well casing.



Photo 7

Date: 8/10/99

Comments:

Applying bentonite pellets to seal well MW-3.



Photo 8

Date: 8/10/99

Comments:

Soil sampling with the hollow-stem auger drill rig at monitoring well MW-1 location.



Photo 9

Date: 8/10/99

Comments:

Using ½ inch rebar dowels and Portland cement with concrete mix to patch pavement.



Photo 10

Date: 8/10/99

Comments:

Finished monitoring well location at MW-1.

Appendix D
Non-Hazardous Waste Manifests

TPS Technologies Soil Recycling
Non-Hazardous Soils

Date of Shipment: _____ Responsible for Payment: _____ Transporter Truck #: _____ Facility #: **07** Given by TPS: _____ Load #: _____

Generator's Name and Billing Address:
L.A. Co. MTA
100 Sunset Ave.
Venice, CA 90291

Generator's Phone #: _____
Person to Contact: _____
FAX#: _____

Generator's US EPA ID No.: _____
Customer Account Number with TPS: _____

Consultant's Name and Billing Address:
URS Greiner Woodward Clyde
2020 E. First St, Ste 400
Santa Ana, CA 92705

Consultant's Phone #: **(714) 835-6886**
Person to Contact: **Jeff Engels**
FAX#: _____

Customer Account Number with TPS: _____

Generation Site (Transport from): (name & address)
L.A. Co. MTA
100 Sunset Ave.
Venice, CA 90291

Site Phone #: () -
Person to Contact: _____
FAX#:) -

BTEX Levels: _____
TPH Levels: _____
AVG. Levels: _____

Designated Facility (Transport to): (name & address)
TPS Technologies Inc.
1232B Hibiscus Avenue
Adelanto, California 92301

Facility Phone #: **(800) 862-8001**
Person to Contact: **Darren Bartlett/**
FAX: **(760) 246-8004**

Facility Permit Numbers: **DELLENA BENTON**

Transporter Name and Mailing Address:
W.A. Woods Industries
10120 W. Frontage Rd.
South Gate, CA 90280

Transporter's Phone #: **(562) 927-1367**
Person to Contact: **Ron Benson**
FAX: **(562) 806-1857**

Transporter's US EPA ID No.: _____
Transporter's DOT No.: _____
Customer Account Number with TPS: **100023B**

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>	0 - 10% <input type="checkbox"/> 10 - 20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>	14 AM'S 10		15200		
Sand <input type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>	0 - 10% <input type="checkbox"/> 10 - 20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>					

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator Consultant Signature and date: **KATHLEEN KETCHER** Month **8** Day **31** Year **97**

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: **RAUL CANTIERO** Signature and date: **Raul Cantiero** Month **9** Day **8** Year **97**

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: **Darren Bartlett/Dellena Benton** Signature and date: _____

Generator and/or Consultant

Transporter

Recycling Facility

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 92762

2. Page 1 of 1

08/27/99

3. Generator's Name and Mailing Address

LOS ANGELES CO. METRO. TRANS. AUTHORITY
160 SUNSET AVE.
VENICE, CA 90291

4. Generator's Phone (714) 835-6886

5. Transporter 1 Company Name

ISLAND ENVIRONMENTAL SERVICES

6. US EPA ID Number

CAR000053405

A. Transporter's Phone

(909) 598-4449

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

DEMENNO/KERDOON
2000 N. ALAMEDA ST.
COMPTON, CA 90222

10. US EPA ID Number

CAT080013352

C. Facility's Phone

(310) 537-7100

11. Waste Shipping Name and Description

NON HAZARDOUS WELL WATER

12. Containers

No. Type

13. Total Quantity

14. Unit Wt/Vol

1 M 115.50 G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) #170570

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

WEAR APPROPRIATE PROTECTIVE GEAR. 24 HOUR PHONE 909) 598-4449
BILL: ISLAND CLIENT: WOODWARD CLYDE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name
KATHLEEN LEICHER

Signature
Kathleen Leicher

Month Day Year
08/31/99

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name
Karl [Signature]

Signature
Karl [Signature]

Month Day Year
09/04/99

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year

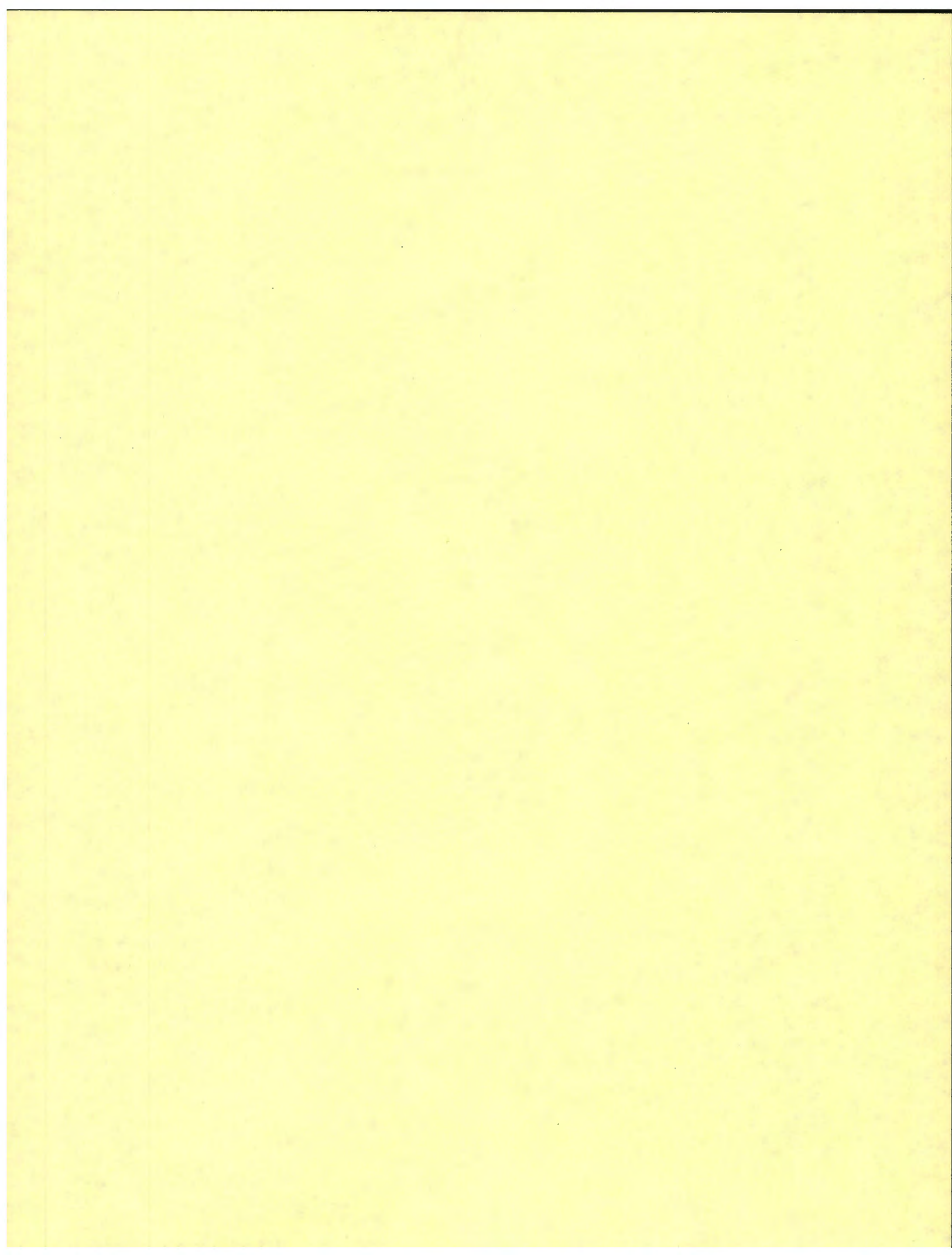
GENERATOR

TRANSPORTER

FACILITY

GENERATOR'S COPY

Appendix E
Groundwater Monitoring
Well Development Logs



Appendix F
Groundwater Monitoring
Well Survey Data

URS Greiner Woodward Clyde

MTA FACILITY
100 Sunset Avenue
Venice, California

<u>WELL</u>	<u>ELEVATION (FEET)</u>		<u>DESCRIPTION</u>	<u>NAD83 SPC CA05 (FEET)</u>	
	<u>NAVD88</u>	<u>NGVD29</u>		<u>NORTH</u>	<u>EAST</u>
MW-1	27.07	24.61	4" PVC (N)	1820475.2	6417433.1
MW-1	27.37	24.91	RIM		
MW-1	27.35	24.89	CONCRETE		
MW-2	27.69	25.23	4" PVC (N)	1820433.7	6417398.3
MW-2	27.86	25.40	RIM		
MW-2	27.80	25.34	CONCRETE		
MW-3	27.24	24.78	4" PVC (N)	1820452.9	6417343.4
MW-3	27.49	25.03	RIM		
MW-3	27.45	24.99	CONCRETE		
MW-4	25.96	23.50	4" PVC (N)	1820513.9	6417335.7
MW-4	26.46	24.00	RIM		
MW-4	26.41	23.95	CONCRETE		

BENCHMARK:

NGS STATION DY1251 - SURVEY DISK STAMPED 23 W 9.03
IN VENICE AT THE INTERSECTION OF MAIN ST AND GRAND BLVD
NEAR NE EDGE OF CONCRETE ROOF OF A STORM DRAIN
PUMPING STATION NEAR THE CENTER OF A TRAFFIC CIRCLE.

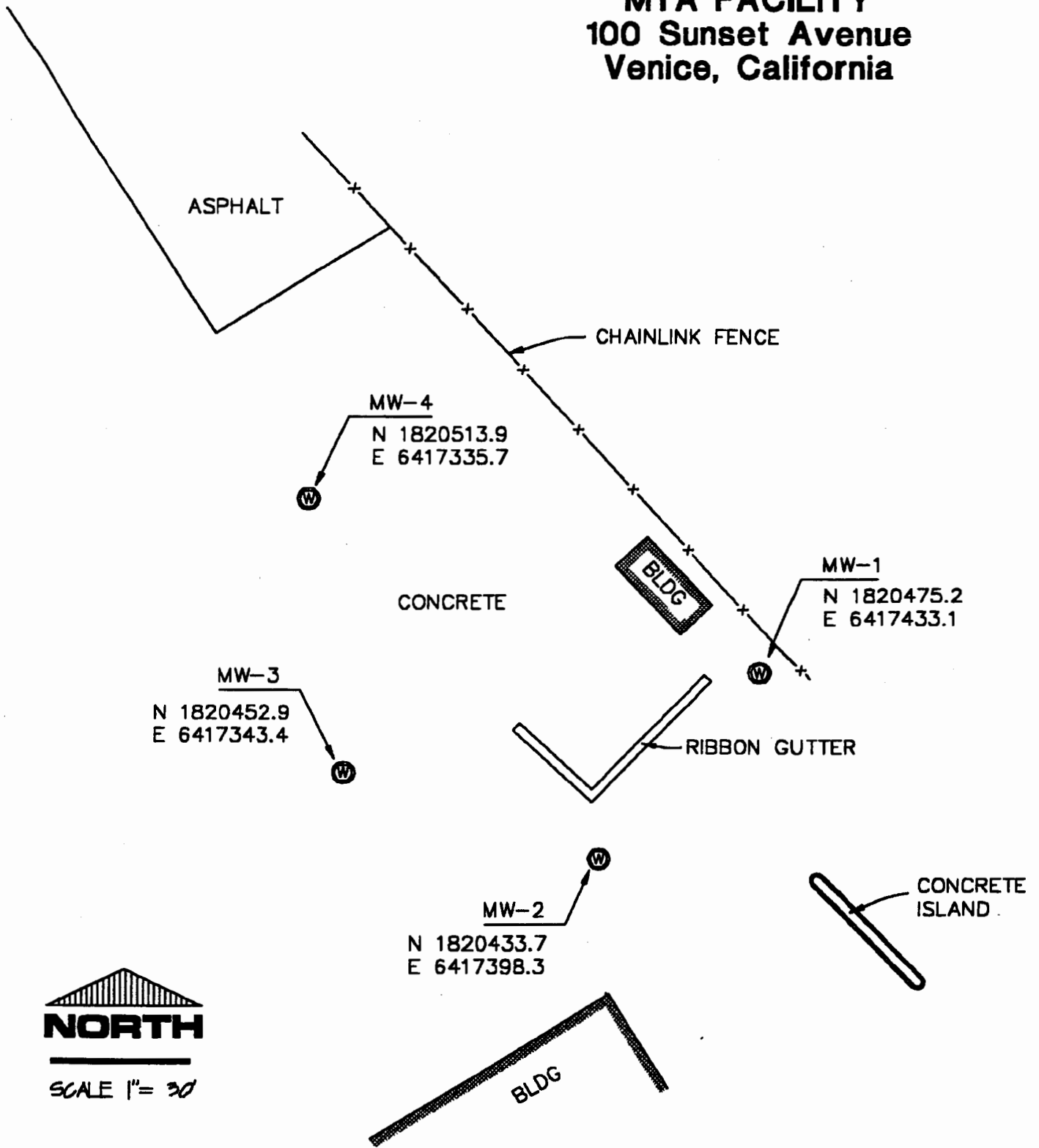
EPOCH DATE 1995.00
HORZ DATUM NAD83 (1994) - FIRST ORDER
33 59 17.31496(N) 118 28 15.49148(W)
1,818,401.63(N) 6,418,895.38(E) CA ZONE 05

VERT DATUM NAVD88 - FIRST ORDER, CLASS 2
3.316 (METERS) 10.88 (FEET)

CONVERSION FROM NAVD88 TO NGVD29 PER VERTCON SOFTWARE
NAVD88 MINUS NGVD29 = +0.751 (METERS) +2.46 (FEET)

URS Greiner Woodward Clyde

MTA FACILITY
100 Sunset Avenue
Venice, California

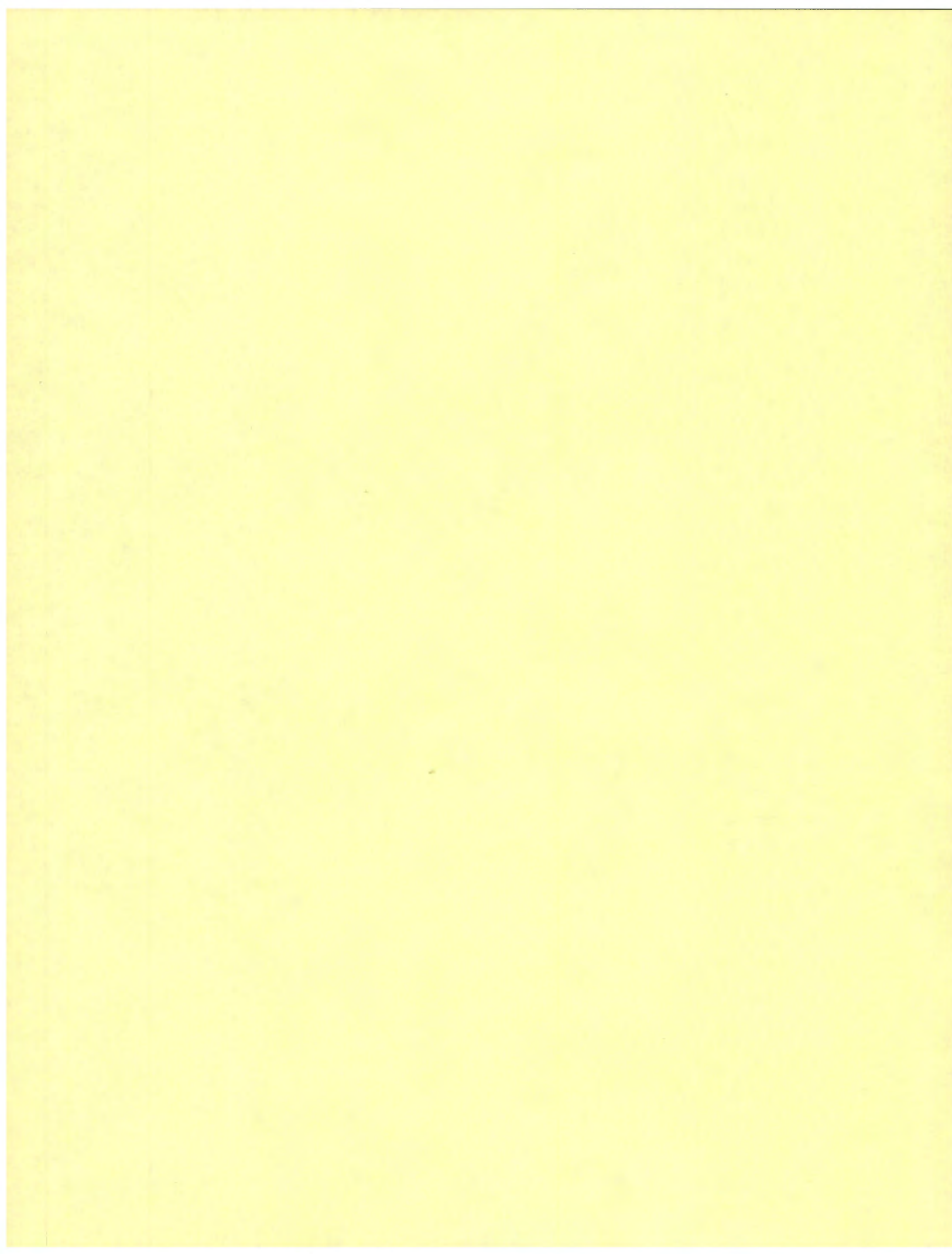


SCALE 1" = 30'

DATE OF SURVEY: 12 AUG 99

	<p>DULIN & BOYNTON LICENSED SURVEYORS</p>	
---	---	---

729 E. WILLOW STREET © (562)426-8484 FAX(562)426-7707 © SIGNAL HILL, CA. 90805



Appendix G
Laboratory Analytical Reports And
Chain-Of-Custody Documentation

Calscience
Environmental
Laboratories, Inc.

August 17, 1999

Colin Wasteneys
URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Subject: **Calscience Work Order No.:** 99-08-0311
Client Reference: MTA-DIVISION 6 / 57.09970021.01-3000

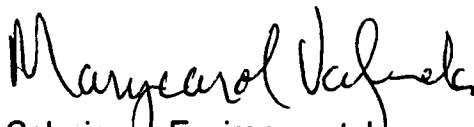
Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 08/10/99 and analyzed in accordance with the attached chain-of-custody.

The results in this analytical report are limited to the samples tested and any reproduction of this report must be made in its entirety.

If you have any questions regarding this report, require sampling supplies or field services, or information on our analytical services, please feel free to call me at (714) 895-5494.

Sincerely,


Calscience Environmental
Laboratories, Inc.
Marycarol Valenzuela
Project Manager


William H. Christensen
Quality Assurance Manager

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0311
 Preparation: Ext. + D/I
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970021.01-3000

Page 1 of 2

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-4-10'	99-08-0311-1	Solid	08/09/99	08/11/99	08/11/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	94	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-4-15'	99-08-0311-2	Solid	08/09/99	08/11/99	08/11/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	95	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-4-20'	99-08-0311-3	Solid	08/09/99	08/11/99	08/11/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	97	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-4-23'	99-08-0311-4	Solid	08/09/99	08/11/99	08/11/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	96	52-135			

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0311
 Preparation: Ext. + D/I
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970021.01-3000

Page 2 of 2

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
Method Blank	098-03-002-274	Solid	N/A	08/11/99	08/11/99	99081102sa

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	95	52-135			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Quality Control - Spike/Spike Duplicate

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received:
 Work Order No:
 Preparation:
 Method:

08/10/99
 99-08-0311
 Ext. + D/I
 EPA 8015M

Project: MTA-DIVISION 6 / 57.09970021.01-3000

Spiked Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-4-20'	Solid	GC 3	08/11/99	08/11/99	99081102ms

<u>Parameter</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Diesel	93	92	52-149	2	0-29	



Environmental Quality Control - Laboratory Control Sample
Laboratories, Inc.

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0311
Preparation: Ext. + D/I
Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970021.01-3000

LCS Sample Number	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
098-03-002-274	Solid	GC 3	08/11/99	003F0101	99081102sa

<u>Parameter</u>	<u>Conc Added</u>	<u>Conc Recovered</u>	<u>%Rec</u>	<u>%Rec CL</u>	<u>Qualifiers</u>
TPH as Diesel	400	380	95	79-137	

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0311
 Preparation: EPA 5030B
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970021.01-3000

Page 1 of 2

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-4-10'	99-08-0311-1	Solid	08/09/99	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	82	34-141			

MW-4-15'	99-08-0311-2	Solid	08/09/99	N/A	08/12/99	99081201sa
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Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	82	34-141			

MW-4-20'	99-08-0311-3	Solid	08/09/99	N/A	08/12/99	99081201sa
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Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	82	34-141			

MW-4-23'	99-08-0311-4	Solid	08/09/99	N/A	08/12/99	99081201sa
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Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	82	34-141			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0311
 Preparation: EPA 5030B
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970021.01-3000

Page 2 of 2

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
Method Blank	098-03-008-269	Solid	N/A	N/A	08/12/99	99081201sa

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	83	34-141			

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

Quality Control - Spike/Spike Duplicate

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0311
 Preparation: EPA 5030B
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970021.01-3000

Spiked Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
99-08-0312-1	Solid	GC 1	N/A	08/12/99	99081201ms

<u>Parameter</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH for Gasoline	87	88	44-122	1	0-30	



Environmental Quality Control - Laboratory Control Sample
Laboratories, Inc.

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0311
 Preparation: EPA 5030B
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970021.01-3000

LCS Sample Number	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
098-03-008-269	Solid	GC 1	08/12/99	003F0101	99081201sa

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
TPH for Gasoline	2.00	1.75	87	57-132	

ANALYTICAL REPORT

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0311
Preparation: N/A
Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970021.01-3000

Page 1 of 2

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-4-10'	99-08-0311-1	08/09/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	6.4	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	9.5	5.0	1		ug/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	96	80-120		Toluene-d8	105	81-117	
1,4-Bromofluorobenzene	85	74-121					

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-4-15'	99-08-0311-2	08/09/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	6.5	5.0	1		ug/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	93	80-120		Toluene-d8	105	81-117	
1,4-Bromofluorobenzene	86	74-121					

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-4-20'	99-08-0311-3	08/09/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	94	80-120		Toluene-d8	104	81-117	
1,4-Bromofluorobenzene	85	74-121					

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0311
Preparation: N/A
Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970021.01-3000

Page 2 of 2

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-4-23'	99-08-0311-4	08/09/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	92	80-120				Toluene-d8	105	81-117			
1,4-Bromofluorobenzene	85	74-121									

Method Blank	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
	095-01-025-1,472	N/A	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	101	80-120				Toluene-d8	104	81-117			
1,4-Bromofluorobenzene	94	74-121									

Quality Control - Spike/Spike Duplicate

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0311
 Preparation: N/A
 Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970021.01-3000

Spiked Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-4-10'	Solid	GC/MS C	N/A	08/11/99	99080311-1

<u>Parameter</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Benzene	98	98	72-127	0	0-25	
Toluene	102	102	75-124	0	0-25	
Methyl-tert-Butyl Ether	96	91	80-120	5	0-25	



Environmental Quality Control - Laboratory Control Sample
Laboratories, Inc.

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0311
Preparation: N/A
Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970021.01-3000

LCS Sample Number	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
095-01-025-1,472	Solid	GC/MS C	08/11/99	11AUG003	990811AS

<u>Parameter</u>	<u>Conc Added</u>	<u>Conc Recovered</u>	<u>%Rec</u>	<u>%Rec CL</u>	<u>Qualifiers</u>
Benzene	250	249	100	72-127	
Toluene	250	260	104	75-124	
Methyl-tert-Butyl Ether	250	240	96	80-120	

GLOSSARY OF TERMS AND QUALIFIERS

Work Order Number: 99-08-0311

<u>Qualifier</u>	<u>Definition</u>
ND	Not detected at indicated reporting limit.

URS Greiner Woodward-Clyde



SHIPMENT NO.: _____

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

0311

DATE 8/19/99

PROJECT NAME: MTA - DIVISION 6

PROJECT NO.: 57.0997 0021.01 - 3000

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required *
		Material	Method		Temp	Chemical	
NW-4-10'	YARD	SOIL	ISA-DRIVE	2X6" Stainless Steel	Iced	None	①
MW-4-15'	↓	↓	↓	↓	↓	↓	①
MW-4-20'	↓	↓	↓	↓	↓	↓	①
MW-4-23'	↓	↓	↓	↓	↓	↓	①
END OF RECORD							

Total Number of Samples Shipped: 4 | Sampler's Signature: [Signature]

Relinquished By: Signature: <u>[Signature]</u> Printed Name: <u>JEFF ENGELS</u> Company: <u>URSGWC</u> Reason: <u>SEND TO LAB FOR ANALYSIS</u>	Received By: Signature: <u>[Signature]</u> Printed Name: <u>JESSE A.</u> Company: <u>CEL</u>	Date: <u>8/10/99</u> Time: <u>1630</u>
--	---	---

Relinquished By: Signature: <u>[Signature]</u> Printed Name: <u>JESSE</u> Company: _____ Reason: _____	Received By: Signature: <u>[Signature]</u> Printed Name: <u>ALEX</u> Company: <u>CEL</u>	Date: <u>8/10/99</u> Time: <u>1800</u>
--	---	---

Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date: <u>1/1</u> Time: _____
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Relinquished By: Signature: _____ Printed Name: _____ Company: _____ Reason: _____	Received By: Signature: _____ Printed Name: _____ Company: _____	Date: <u>1/1</u> Time: _____
--	---	---------------------------------

Special Shipment / Handling / Storage Requirements:
 ① 8015M TPH-G, 8015M TPH-D, 8260B BTEX/MTBE
 SEND / FAX RESULTS TO COLIN WASTENEYS AT 714-667-7147 (FX)

* Note - This does not constitute authorization to proceed with analysis

Calscience
Environmental
Laboratories, Inc.

August 17, 1999

Colin Wasteneys
URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Subject: **Calscience Work Order No.: 99-08-0312**
Client Reference: **MTA-DIVISION 6 / 57.09970022.01-3000**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 08/10/99 and analyzed in accordance with the attached chain-of-custody.

The results in this analytical report are limited to the samples tested and any reproduction of this report must be made in its entirety.

If you have any questions regarding this report, require sampling supplies or field services, or information on our analytical services, please feel free to call me at (714) 895-5494.

Sincerely,


Calscience Environmental
Laboratories, Inc.
Marycarol Valenzuela
Project Manager


William H. Christensen
Quality Assurance Manager

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: Ext. + D/I
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

Page 1 of 4

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-3-10'	99-08-0312-1	Solid	08/10/99	08/11/99	08/11/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	95	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-3-15'	99-08-0312-2	Solid	08/10/99	08/11/99	08/11/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	91	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-3-20'	99-08-0312-3	Solid	08/10/99	08/11/99	08/11/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	99	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-3-23'	99-08-0312-4	Solid	08/10/99	08/11/99	08/12/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	97	52-135			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: Ext. + D/I
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

Page 2 of 4

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-10'	99-08-0312-5	Solid	08/10/99	08/11/99	08/12/99	99081102sa

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	930	5	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	92	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-15'	99-08-0312-6	Solid	08/10/99	08/11/99	08/12/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	94	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-20'	99-08-0312-7	Solid	08/10/99	08/11/99	08/12/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	93	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-23'	99-08-0312-8	Solid	08/10/99	08/11/99	08/12/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	96	52-135			

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: Ext. + D/I
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

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Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-10'	99-08-0312-9	Solid	08/10/99	08/11/99	08/12/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	2500	20	4	D	mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	95	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-15'	99-08-0312-10	Solid	08/10/99	08/11/99	08/12/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	96	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-20'	99-08-0312-11	Solid	08/10/99	08/11/99	08/12/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	97	52-135			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-23'	99-08-0312-12	Solid	08/10/99	08/11/99	08/12/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	90	52-135			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0312
Preparation: Ext. + D/I
Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

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Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
DUP-1	99-08-0312-13	Solid	08/10/99	08/11/99	08/12/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	97	52-135			

Method Blank	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
	098-03-002-274	Solid	N/A	08/11/99	08/11/99	99081102sa

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Decachlorobiphenyl	95	52-135			

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0312
Preparation: EPA 5030B
Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

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Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-3-10'	99-08-0312-1	Solid	08/10/99	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	82	34-141			

MW-3-15'	99-08-0312-2	Solid	08/10/99	N/A	08/12/99	99081201sa
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Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	82	34-141			

MW-3-20'	99-08-0312-3	Solid	08/10/99	N/A	08/12/99	99081201sa
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Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	81	34-141			

MW-3-23'	99-08-0312-4	Solid	08/10/99	N/A	08/12/99	99081201sa
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Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	82	34-141			

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0312
Preparation: EPA 5030B
Method: EPA 8015M

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Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-10'	99-08-0312-5	Solid	08/10/99	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	81	34-141			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-15'	99-08-0312-6	Solid	08/10/99	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	87	34-141			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-20'	99-08-0312-7	Solid	08/10/99	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	80	34-141			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-23'	99-08-0312-8	Solid	08/10/99	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	80	34-141			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0312
Preparation: Ext + EPA 5030B
Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

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Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-10'	99-08-0312-9	Solid	08/10/99	08/12/99	08/13/99	99081202sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	790	25	50	D	mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	92	34-141			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-15'	99-08-0312-10	Solid	08/10/99	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	80	34-141			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-20'	99-08-0312-11	Solid	08/10/99	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	81	34-141			

Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-23'	99-08-0312-12	Solid	08/10/99	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	80	34-141			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: EPA 5030B
 Method: EPA 8015M

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Client Sample Number:	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
DUP-1	99-08-0312-13	Solid	08/10/99	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	0.83	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	81	34-141			

Method Blank	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
	098-03-008-269	Solid	N/A	N/A	08/12/99	99081201sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	83	34-141			

Method Blank	Lab Sample Number:	Matrix:	Date Collected:	Date Prepared:	Date Analyzed:	QC Batch ID:
	098-03-008-270	Solid	N/A	N/A	08/12/99 08/13/99	99081202sa

Parameter	Result	RL	DF	Qual	Units
TPH for Gasoline	ND	5.0	10		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	80	34-141			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: N/A
 Method: EPA 8260B

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-3-10'	99-08-0312-1	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits	Qual			Surrogates:	REC (%)	Control Limits	Qual		
Dibromofluoromethane	94	80-120				Toluene-d8	106	81-117			
1,4-Bromofluorobenzene	86	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-3-15'	99-08-0312-2	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits	Qual			Surrogates:	REC (%)	Control Limits	Qual		
Dibromofluoromethane	94	80-120				Toluene-d8	105	81-117			
1,4-Bromofluorobenzene	86	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-3-20'	99-08-0312-3	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits	Qual			Surrogates:	REC (%)	Control Limits	Qual		
Dibromofluoromethane	94	80-120				Toluene-d8	105	81-117			
1,4-Bromofluorobenzene	85	74-121									

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0312
Preparation: N/A
Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970022.01-3000

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-3-23'	99-08-0312-4	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	95	80-120				Toluene-d8	104	81-117			
1,4-Bromofluorobenzene	85	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-10'	99-08-0312-5	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	93	80-120				Toluene-d8	103	81-117			
1,4-Bromofluorobenzene	84	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-15'	99-08-0312-6	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	95	80-120				Toluene-d8	105	81-117			
1,4-Bromofluorobenzene	84	74-121									

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: N/A
 Method: EPA 8260B

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-20'	99-08-0312-7	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits	Qual			Surrogates:	REC (%)	Control Limits	Qual		
Dibromofluoromethane	96	80-120				Toluene-d8	105	81-117			
1,4-Bromofluorobenzene	85	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-2-23'	99-08-0312-8	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits	Qual			Surrogates:	REC (%)	Control Limits	Qual		
Dibromofluoromethane	94	80-120				Toluene-d8	105	81-117			
1,4-Bromofluorobenzene	85	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-10'	99-08-0312-9	08/10/99	Solid	N/A	08/12/99	990811BE

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	130	25		ug/kg	p/m-Xylene	290	130	25		ug/kg
Ethylbenzene	ND	130	25		ug/kg	o-Xylene	650	130	25		ug/kg
Toluene	ND	130	25		ug/kg	Methyl-tert-Butyl Ether	ND	130	25		ug/kg
Surrogates:	REC (%)	Control Limits	Qual			Surrogates:	REC (%)	Control Limits	Qual		
Dibromofluoromethane	95	80-120				Toluene-d8	102	81-117			
1,4-Bromofluorobenzene	91	74-121									

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: N/A
 Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970022.01-3000

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-15'	99-08-0312-10	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	27	5	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	95	80-120				Toluene-d8	104	81-117			
1,4-Bromofluorobenzene	85	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-20'	99-08-0312-11	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	32	5	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	94	80-120				Toluene-d8	104	81-117			
1,4-Bromofluorobenzene	85	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
MW-1-23'	99-08-0312-12	08/10/99	Solid	N/A	08/11/99	990811AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	17	5	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	94	80-120				Toluene-d8	104	81-117			
1,4-Bromofluorobenzene	85	74-121									

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0312
Preparation: N/A
Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970022.01-3000

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
DUP-1	99-08-0312-13	08/10/99	Solid	N/A	08/12/99	990811BS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	5.8	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	94	80-120				Toluene-d8	104	81-117			
1,4-Bromofluorobenzene	84	74-121									

Method Blank	095-01-025-1,472	N/A	Solid	N/A	08/11/99	990811AS
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	101	80-120				Toluene-d8	104	81-117			
1,4-Bromofluorobenzene	94	74-121									

Method Blank	095-01-025-1,474	N/A	Solid	N/A	08/12/99	990811BS
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
Ethylbenzene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
Toluene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
Surrogates:	REC (%)	Control Limits		Qual		Surrogates:	REC (%)	Control Limits		Qual	
Dibromofluoromethane	95	80-120				Toluene-d8	105	81-117			
1,4-Bromofluorobenzene	84	74-121									

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

ANALYTICAL REPORT

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: N/A
 Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970022.01-3000

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
	095-01-025-1,475	N/A	Solid	N/A	08/12/99	990811BE

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	50	10		ug/kg	p/m-Xylene	ND	50	10		ug/kg
Ethylbenzene	ND	50	10		ug/kg	o-Xylene	ND	50	10		ug/kg
Toluene	ND	50	10		ug/kg	Methyl-tert-Butyl Ether	ND	50	10		ug/kg
Surrogates:	REC (%)	Control Limits	Qual			Surrogates:	REC (%)	Control Limits	Qual		
Dibromofluoromethane	94	80-120				Toluene-d8	105	81-117			
1,4-Bromofluorobenzene	84	74-121									

Quality Control - Spike/Spike Duplicate

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: Ext. + D/I
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

Spiked Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
99-08-0311-3	Solid	GC 3	08/11/99	08/11/99	99081102ms

<u>Parameter</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Diesel	93	92	52-149	2	0-29	

Calscience
Environmental Quality Control - Laboratory Control Sample
Laboratories, Inc.

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: Ext. + D/I
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

LCS Sample Number	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
098-03-002-274	Solid	GC 3	08/11/99	003F0101	99081102sa

<u>Parameter</u>	<u>Conc Added</u>	<u>Conc Recovered</u>	<u>%Rec</u>	<u>%Rec CL</u>	<u>Qualifiers</u>
TPH as Diesel	400	380	95	79-137	

Quality Control - Spike/Spike Duplicate

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received:
 Work Order No:
 Preparation:
 Method:

08/10/99
 99-08-0312
 EPA 5030B
 EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

Spiked Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-3-10'	Solid	GC 1	N/A	08/12/99	99081201ms

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH for Gasoline	87	88	44-122	1	0-30	

Calscience
Environmental Quality Control - Laboratory Control Sample
Laboratories, Inc.

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: Ext + EPA 5030B
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

LCS Sample Number	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
098-03-008-270	Solid	GC 1	08/12/99	026F0101	99081202sa

<u>Parameter</u>	<u>Conc Added</u>	<u>Conc Recovered</u>	<u>%Rec</u>	<u>%Rec CL</u>	<u>Qualifiers</u>
TPH for Gasoline	2.00	1.76	88	57-132	

Calscience
Environmental Quality Control - Laboratory Control Sample
Laboratories, Inc.

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: EPA 5030B
 Method: EPA 8015M

Project: MTA-DIVISION 6 / 57.09970022.01-3000

LCS Sample Number	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
098-03-008-269	Solid	GC 1	08/12/99	003F0101	99081201sa

<u>Parameter</u>	<u>Conc Added</u>	<u>Conc Recovered</u>	<u>%Rec</u>	<u>%Rec CL</u>	<u>Qualifiers</u>
TPH for Gasoline	2.00	1.75	87	57-132	

Quality Control - Spike/Spike Duplicate

URS Greiner Woodward Clyde
 2020 East 1st Street, Suite 400
 Santa Ana, CA 92705

Date Received: 08/10/99
 Work Order No: 99-08-0312
 Preparation: N/A
 Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970022.01-3000

Spiked Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
99-08-0311-1	Solid	GC/MS C	N/A	08/11/99	99080311-1

<u>Parameter</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Benzene	98	98	72-127	0	0-25	
Toluene	102	102	75-124	0	0-25	
Methyl-tert-Butyl Ether	96	91	80-120	5	0-25	

Calscience

Environmental Quality Control - Laboratory Control Sample
Laboratories, Inc.

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0312
Preparation: N/A
Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970022.01-3000

LCS Sample Number	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
095-01-025-1,472	Solid	GC/MS C	08/11/99	11AUG003	990811AS

<u>Parameter</u>	<u>Conc Added</u>	<u>Conc Recovered</u>	<u>%Rec</u>	<u>%Rec CL</u>	<u>Qualifiers</u>
Benzene	250	249	100	72-127	
Toluene	250	260	104	75-124	
Methyl-tert-Butyl Ether	250	240	96	80-120	

Calscience

Environmental Quality Control - Laboratory Control Sample
Laboratories, Inc.

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0312
Preparation: N/A
Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970022.01-3000

LCS Sample Number	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
095-01-025-1,475	Solid	GC/MS C	08/12/99	11AUG026	990811BE

<u>Parameter</u>	<u>Conc Added</u>	<u>Conc Recovered</u>	<u>%Rec</u>	<u>%Rec CL</u>	<u>Qualifiers</u>
Benzene	250	249	100	72-127	
Toluene	250	259	104	75-124	
Methyl-tert-Butyl Ether	250	237	95	80-120	

Calscience

Environmental Quality Control - Laboratory Control Sample
Laboratories, Inc.

URS Greiner Woodward Clyde
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

Date Received: 08/10/99
Work Order No: 99-08-0312
Preparation: N/A
Method: EPA 8260B

Project: MTA-DIVISION 6 / 57.09970022.01-3000

LCS Sample Number	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
095-01-025-1,474	Solid	GC/MS C	08/12/99	11AUG026	990811BS

<u>Parameter</u>	<u>Conc Added</u>	<u>Conc Recovered</u>	<u>%Rec</u>	<u>%Rec CL</u>	<u>Qualifiers</u>
Benzene	250	249	100	72-127	
Toluene	250	259	104	75-124	
Methyl-tert-Butyl Ether	250	237	95	80-120	

GLOSSARY OF TERMS AND QUALIFIERS

Work Order Number: 99-08-0312

<u>Qualifier</u>	<u>Definition</u>
D	The sample data was reported from a diluted analysis.
ND	Not detected at indicated reporting limit.

URS Greiner Woodward-Clyde

SHIPMENT NO.: _____

0312

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NAME: MTA - DIVISION 6

DATE 8/10/99

PROJECT NO.: 57.09970022.01 - 3000

Sample Number	Location	Type of Sample		Type of Container	Type of Preservation		Analysis Required*
		Material	Method		Temp	Chemical	
MW-3-10'	YARD	SOIL	HSA DRIVE	2"x6" STAINLESS ST.	ICED	NONE	1
MW-3-15'							1
MW-3-20'							1
MW-3-23'							1
MW-2-10'							1
MW-2-15'							1
MW-2-20'							1
MW-2-23'							1
MW-1-10'							1
MW-1-15'							1
MW-1-20'							1
MW-1-23'							1
DUP-1							1
END OF RECORD							

Total Number of Samples Shipped: 13 | Sampler's Signature: [Signature]

Relinquished By:
 Signature: [Signature]
 Printed Name: JEFF ENGELS
 Company: DPSS WC
 Reason: SEND TO LAB FOR ANALYSIS

Received By:
 Signature: [Signature]
 Printed Name: JESSE A
 Company: CEL

Date: 8/10/99
 Time: 1640

Relinquished By:
 Signature: [Signature]
 Printed Name: JESSE
 Company: _____
 Reason: _____

Received By:
 Signature: [Signature]
 Printed Name: [Signature]
 Company: CEL

Date: 8/10/99
 Time: 1800

Relinquished By:
 Signature: _____
 Printed Name: _____
 Company: _____
 Reason: _____

Received By:
 Signature: _____
 Printed Name: _____
 Company: _____

Date: 1/1
 Time: _____

Relinquished By:
 Signature: _____
 Printed Name: _____
 Company: _____
 Reason: _____

Received By:
 Signature: _____
 Printed Name: _____
 Company: _____

Date: 1/1
 Time: _____

Special Shipment / Handling / Storage Requirements:
1 8015M TPH-G, 8015M 8015D, 8260B BPEX/MTBE
SEND/FAX RESULTS TO COLIN WASTENEYS @ 714 667-7147

* Note - This does not constitute authorization to proceed with analysis



URS Greiner Woodward Clyde

