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REPORTS

DATE:

5/94 - GROUNDWATER REPORT

Brown McCarroll and Oaks Hartline

Austin, Texas

ENSR

Initial Groundwater Assessment Report Former Exxon Chemical Facility 2607/2609 West Marland Boulevard Hobbs, New Mexico

ENSR Consulting and Engineering

May 1994

Document Number 1009-006-105

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OIL CONSERVATION DIV.
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Brown McCarroll and Oaks Hartline
Austin, Texas

Initial Groundwater Assessment Report
Former Exxon Chemical Facility
2607/2609 West Marland Boulevard
Hobbs, New Mexico

ENSR Consulting and Engineering

May 1994

Document Number 1009-006-105

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EXECUTIVE SUMMARY

ENSR Consulting and Engineering (ENSR), in conjunction with its subcontractor, Harrison Drilling and Environmental Services, Inc., installed one groundwater well adjacent to the former "Oil Pit Floor" at the former Exxon facility located at 2607/2609 West Marland Boulevard in Hobbs, New Mexico.

Groundwater samples were collected from the monitor well and submitted for analytical evaluation. Analytical results were compared to the New Mexico Oil Conservation Division (OCD) standards for groundwater, and all parameters were reported below the standards.

The above mentioned activities were performed in response to the New Mexico Oil Conservation Division (OCD) request that Exxon Chemical Company determine if past uses of the "oil pit" have impacted the underlying groundwater.

Analytical results presented in this report show no evidence that the groundwater underlying the West Marland site has been impacted by past operational activities.

1.0 INTRODUCTION

1.1 Background

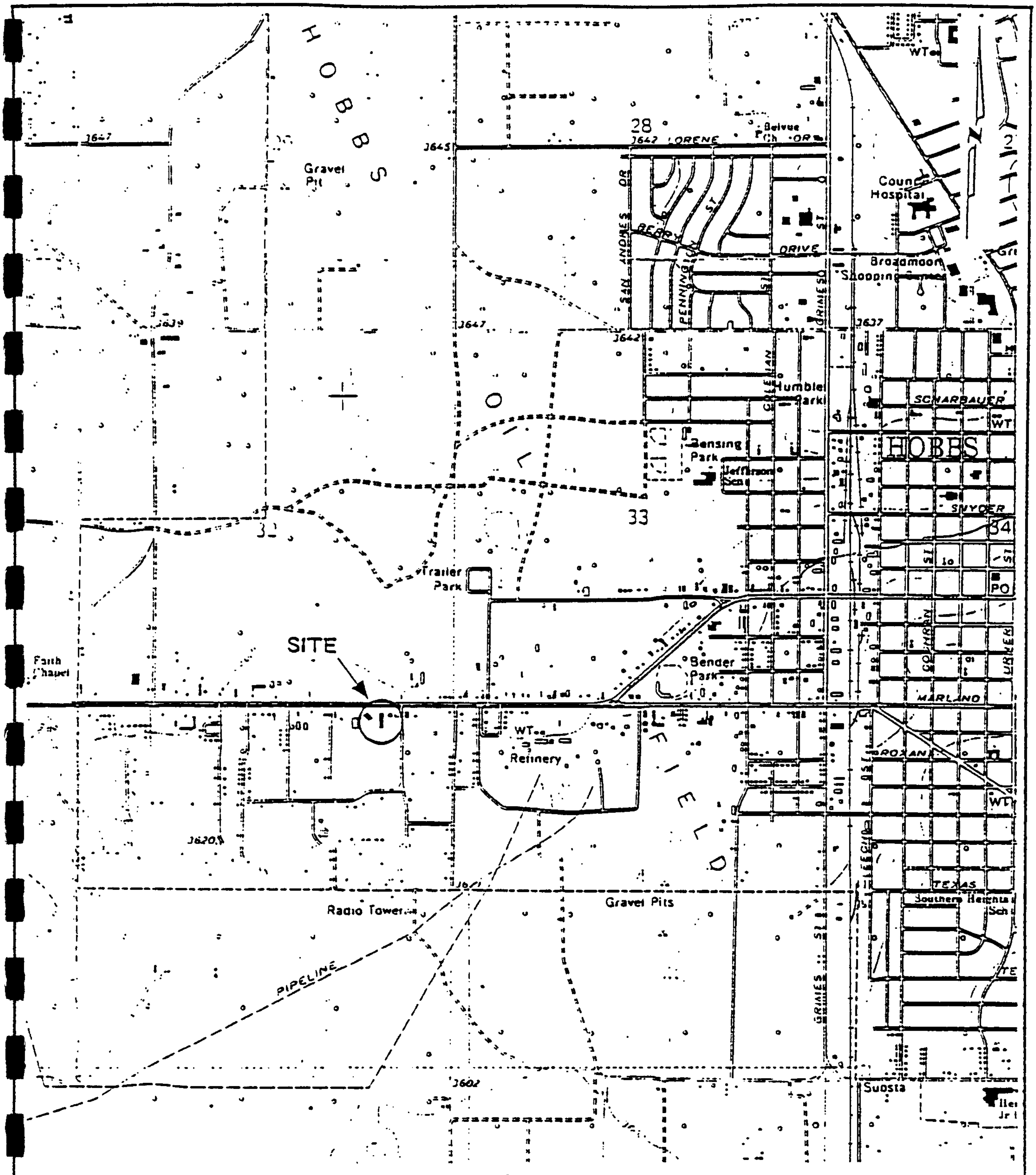
The site is located at 2607/2609 West Marland Boulevard in Hobbs, New Mexico and is currently owned and operated by Electro Support Systems, Inc. (ESS). A site location map is shown on Figure 1-1. ESS purchased the facility in 1991 from Sweatt Construction Company (Sweatt). Sweatt used the facility for office space, truck maintenance, and construction equipment storage. NL Industries, Inc. (NLI) leased the office suite at 2607 West Marland Boulevard intermittently from approximately 1980 to 1988. Exxon Chemical Company (Exxon) assumed the lease from NLI in 1987.

The site is approximately 2.15 acres in size and consists of a main building, a warehouse/assembly building, and a caliche-covered yard. A site plot plan is shown on Figure 1-2. The main building consists of two office suites, 2607 and 2609 West Marland Boulevard, and is located in the northern portion of the property. The main building is surrounded on the north and east by an asphalt parking lot. The warehouse/assembly building is located along the west side of the property behind the main building. This building as well as the main building are currently in use by the present owner, ESS.

During the period that Exxon leased the property, from March 1988 to August 1989, the facility was used for the storage and distribution of oil field treating chemicals. Exxon maintained seven 750-gallon aboveground storage tanks on the property for storage of oil field chemicals. The tanks were installed within a secondary containment system. Chemical product was also stored in drums. Typically, 250 drums of product were stored on pallets in the yard. No blending or processing of these chemicals occurred at the site.

1.2 Previous Investigations and Field Activities

On behalf of Exxon, ENSR Consulting and Engineering (ENSR), conducted a Phase I Preliminary Assessment in 1991 at the West Marland site. Assessment activities included site visits, interviews with personnel that worked at the facility, facility records review, and state agency or EPA files research. The results were presented in a June 1992 report entitled Phase I Preliminary Assessment, Exxon Chemical Company, 2607/2609 West Marland Boulevard, Hobbs, New Mexico.



0 2000 4000

SCALE IN FEET

REFERENCE. U.S.G.S. Quadrangle Map for Hobbs West, New Mexico. Photorevised 1979.

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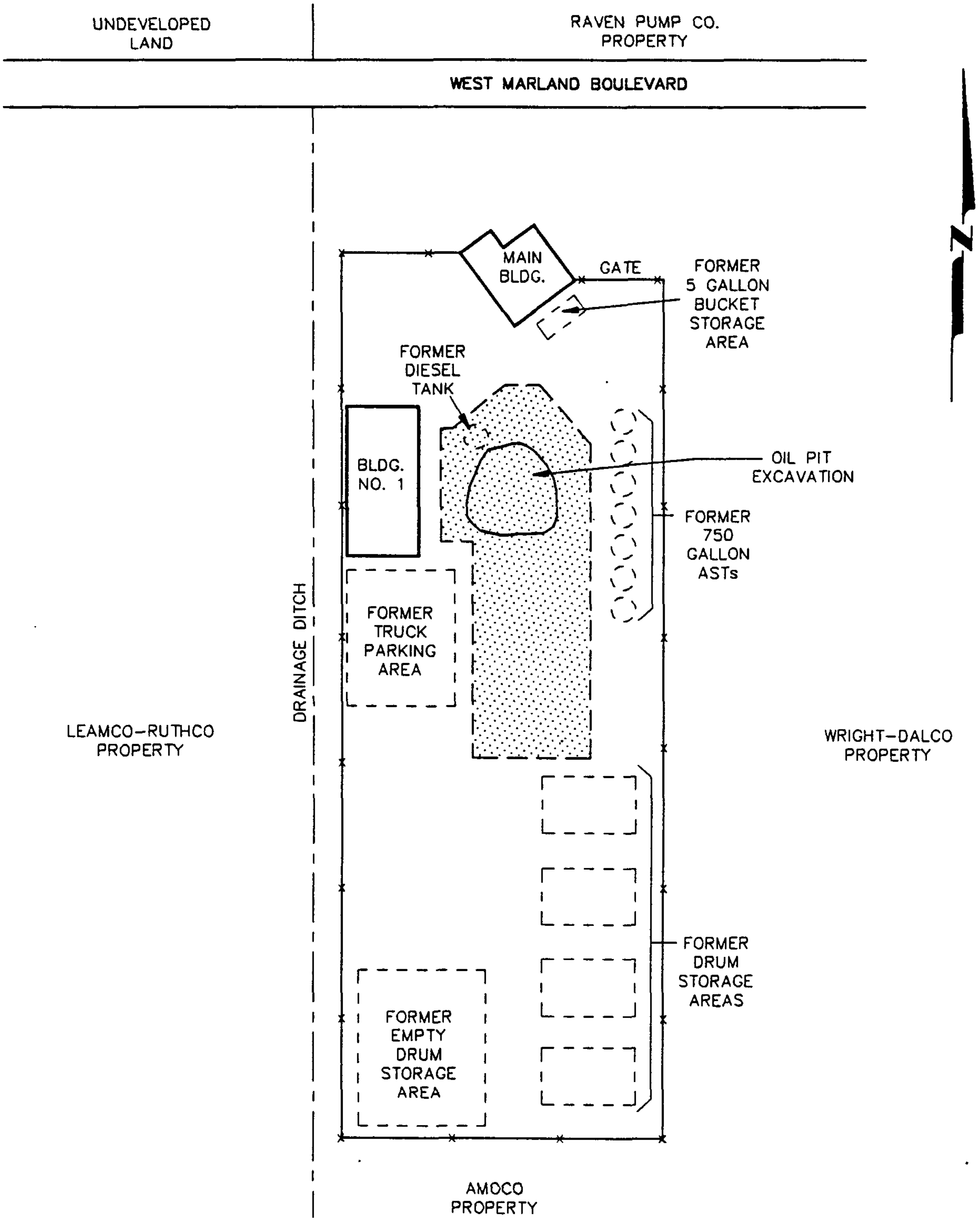
FIGURE 1-1
SITE LOCATION MAP
EXXON CHEMICAL COMPANY FACILITY
WEST MARLAND BOULEVARD
HOBBS, NEW MEXICO

DRAWN BY: SJF	DATE: 1-21-94	PROJECT NUMBER: 1009-006-105
CHK'D.BY:	REVISED:	



LEGEND

▨ – PREVIOUSLY EXCAVATED AND BACKFILLED AREAS

NOT TO SCALE

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FIGURE 1-2
SITE PLOT PLAN
EXXON CHEMICAL COMPANY FACILITY
WEST MARLAND BOULEVARD
HOBBS, NEW MEXICO

DRAWN: SF/SH	DATE: 1-21-94	PROJECT NUMBER: 1009-006-105
APPV'D:	REVISED:	

The Preliminary Assessment indicated areas of the facility yard that warranted additional investigation to determine if soils have been impacted by operational activities. As a result, ENSR conducted a Phase II Site Inspection at the site in January 1992. The findings were presented in a June 1992 report entitled Phase II Site Inspection, Former Exxon Chemical Company Facility, 2607/2609 West Marland Boulevard, Hobbs, New Mexico.

During Site Inspection activities, impacted soil was encountered in several areas within the facility yard. In July and August 1993, in accordance with a New Mexico Oil Conservation Division (OCD) approved Work Plan, a Phase III Removal Action was performed in order to remove the impacted soil from the site. The results of the removal action are presented in ENSR's report entitled Phase III Removal Action Report, Former Exxon Chemical Company Facility, 2607/2609 West Marland, Hobbs, New Mexico.

During the removal activities one large rectangular shaped area measuring approximately 190 by 52 feet was excavated (Figure 1-2). The average depth of the excavation was three to four feet below ground surface. Laboratory analysis of the majority of the verification soil samples collected from the walls and floor of the excavation showed results below OCD clean-up levels for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene and xylenes (BTEX).

However, heavily hydrocarbon-impacted soil was encountered in the center of the excavation, directly south of a former aboveground diesel storage tank (Figure 1-2). The area is believed to have been a type of waste oil disposal pit or holding tank, and has been designated as the "Oil Pit". Laboratory analysis of soil samples collected from floor of the former Oil Pit area had concentrations of TPH and BTEX above OCD clean-up levels.

Based on the laboratory analysis data, excavation activities were continued in the Oil Pit area. Layers of fractured caliche were encountered at 9 to 10 feet below ground surface and hydrocarbons were detected in the fractures. The caliche became very dense at approximately 18 feet below and further excavation was not practical. Therefore, with the approval of the OCD, some of the impacted soil was left in place and the excavation was back filled with clean soil and compacted.

Waste characterization analysis of the excavated soil indicated that the soil was classified as non-hazardous for disposal purposes. Approximately 2,850 cubic yards of contaminated soil was transported to the Controlled Recovery, Inc. (CRI) disposal facility in Hobbs, New Mexico.

1.3 Objective and Scope of Work

Due to the fact that the vertical extent of impacted soil in the vicinity of the "oil pit" has not been completely defined, the OCD requested Exxon to determine if the groundwater underlying the "oil pit" floor has also been impacted by past operational activities.

In order to meet this objective, one monitor well was installed at the previous location of the "oil pit" and screened in the uppermost saturated zone underlying the site. Following development of the monitoring well, groundwater samples were collected and submitted for chemical analysis.

The following sections describe the procedures used to perform the above mentioned field activities which were initially carried out the week of March 14, 1994, with additional sampling of the well on April 25, 1994.

2.0 FIELD PROCEDURES

2.1 Monitor Well Installation

The monitor well was installed under direct supervision of an ENSR geologist using a truck-mounted drill rig utilizing the hollow-stem auger method of drilling. Total depth of the well was 60 feet below ground surface.

An initial borehole of 6-inch-diameter was advanced before installing the screen and casing. The screen was 15 feet in length and was constructed of machine slotted PVC, 2 inches in diameter. The casing above the screen was 45 feet in length and was constructed of 2-inch PVC. Once the well pipe was installed, a sand filter pack was installed between the pipe and annulus of the borehole. The filter back consisted of 20/40 sieve size quartz sand and extended to 3 feet above the top of the screen. A 3-foot bentonite seal was then installed above the filter pack. After allowing the bentonite to hydrate and form an adequate seal, the annulus was grouted to the surface with a concrete/bentonite slurry. The well was completed with a flush-mount cover to allow access to any potential traffic entering the area in the future.

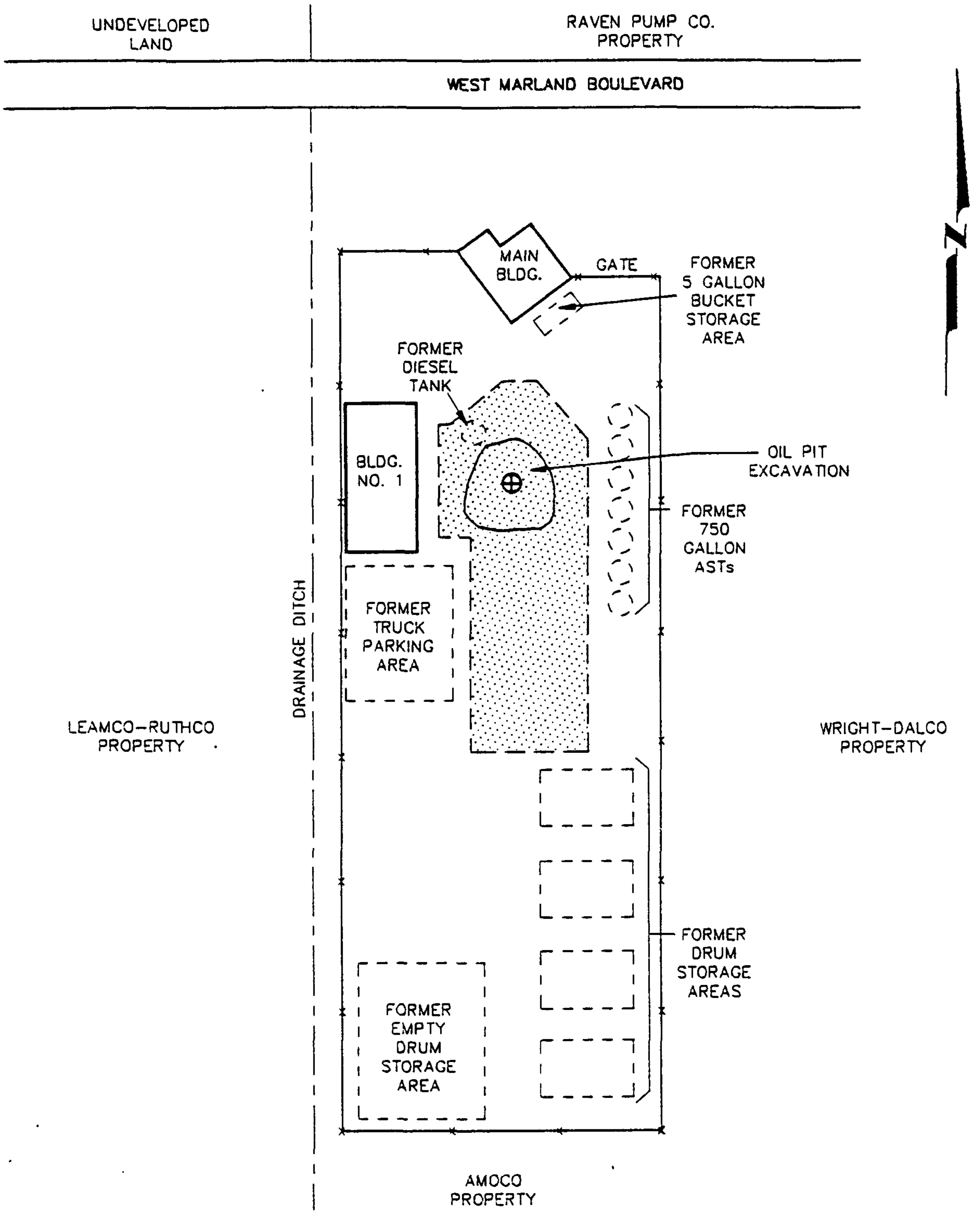
The borehole was logged by the geologist utilizing soil cuttings brought to the surface by the augers. The well was designated WM-1, and a boring log showing the lithology and well construction details is provided in Appendix A. Figure 2-1 provides the approximate location of monitor well WM-1.

Soil cuttings were placed of in 55-gallon drums and stored on site.

2.2 Well Development Procedures

At least 24 hours after well installation, the monitor well was developed by purging the well with a 2-inch submersible pump. The well was purged until the pH and specific conductivity had stabilized for three consecutive well volumes.

Groundwater purged from the well was also containerized in 55-gallon drums and stored on site.



LEGEND

▨ – PREVIOUSLY EXCAVATED AND BACKFILLED AREAS

⊕ – MONITOR WELL

NOT TO SCALE

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FIGURE 2-1
MONITOR WELL LOCATION
EXXON CHEMICAL COMPANY FACILITY
WEST MARLAND BOULEVARD
HOBBS, NEW MEXICO

DRAWN: SF/SH	DATE: 4-13-94	PROJECT NUMBER: 1009-006-105
APPV'D:	REVISED:	

2.3 Well Sampling

The monitor well was sampled on two occasions, March 18 and April 25, 1994. Prior to sampling, three well volumes were removed from the well, recording pH, specific conductivity, and temperature between each volume. Groundwater was then collected with a disposable bailer and nylon cord. The groundwater was poured directly from the bailer into the appropriate sample jar. The samples were properly preserved, labeled, and placed in a cooler of ice. Chain of custody forms were filled out and sent with the samples to Environ Express Laboratories in La Porte, Texas. The samples were analyzed for volatile organics (Method 8240), semivolatile organics (Method 8270) and total, and dissolved metals (New Mexico's List) for the initial sampling event, and dissolved metals and total dissolved solids (TDS) for the April 25, 1994 sampling event.

3.0 ANALYTICAL RESULTS

The initial analytical report for the Exxon West Marland site identified very low levels of methylene chloride and bis(2-ethylhexyl)phthalate at 7 μg/l and 13 μg/l, respectively.

The dissolved metal concentrations for both sampling events were reported below the New Mexico standard for groundwater. The analytical report generated from the April sampling event provides more desirable (lower) detection limits than the initial report for March. Table 3-1 summarizes the dissolved metal concentrations for the April 25, 1994 sampling activities.

Complete laboratory reports are provided in Appendix B.

TABLE 3-1

Analytical Results for Groundwater
April 25, 1994
TDS and Dissolved Metals

Constituents	WM-1 (mg/L)	Method Detection Limit (mg/L)	New Mexico Standard[1,2] (mg/L)
TDS	78	10	10,000[2]
Aluminum	<5.0	5.0	5.0
Arsenic	<0.1	0.1	0.1
Barium	<1.0	0.1	1.0
Boron	<0.75	0.75	0.75
Cadmium	<0.01	0.01	0.01
Chromium	<0.05	0.05	0.05
Cobalt	<0.05	0.05	0.05
Copper	<0.1	0.1	1.0
Iron	<1.0	1.0	1.0
Lead	<0.05	0.05	0.05
Manganese	<0.2	0.2	0.2
Mercury	<0.002	0.002	0.002
Molybdenum	<1.0	1.0	1.0
Nickel	<0.2	0.2	0.2
Selenium	<0.05	0.05	0.05
Silver	<0.05	0.05	0.05
Uranium	<5.0	5.0	5.0
Zinc	<10.0	10.0	10.0

Notes: [1] Part 3, Water Quality Control Section 3-103, A,B,C.

[2] The standards provided are for groundwater with a TDS of <10,000 mg/L.

4.0 CONCLUSIONS

The analytical results presented in this report have been compared to the New Mexico standards for groundwater, and all values are below the standards. Based on field observations and the analytical results presented in this report, there is no evidence that the groundwater underlying the West Marland site has been impacted by activities associated with Exxon's past operations.

APPENDIX A

BORING LOG

ENSR Consulting & Engineering

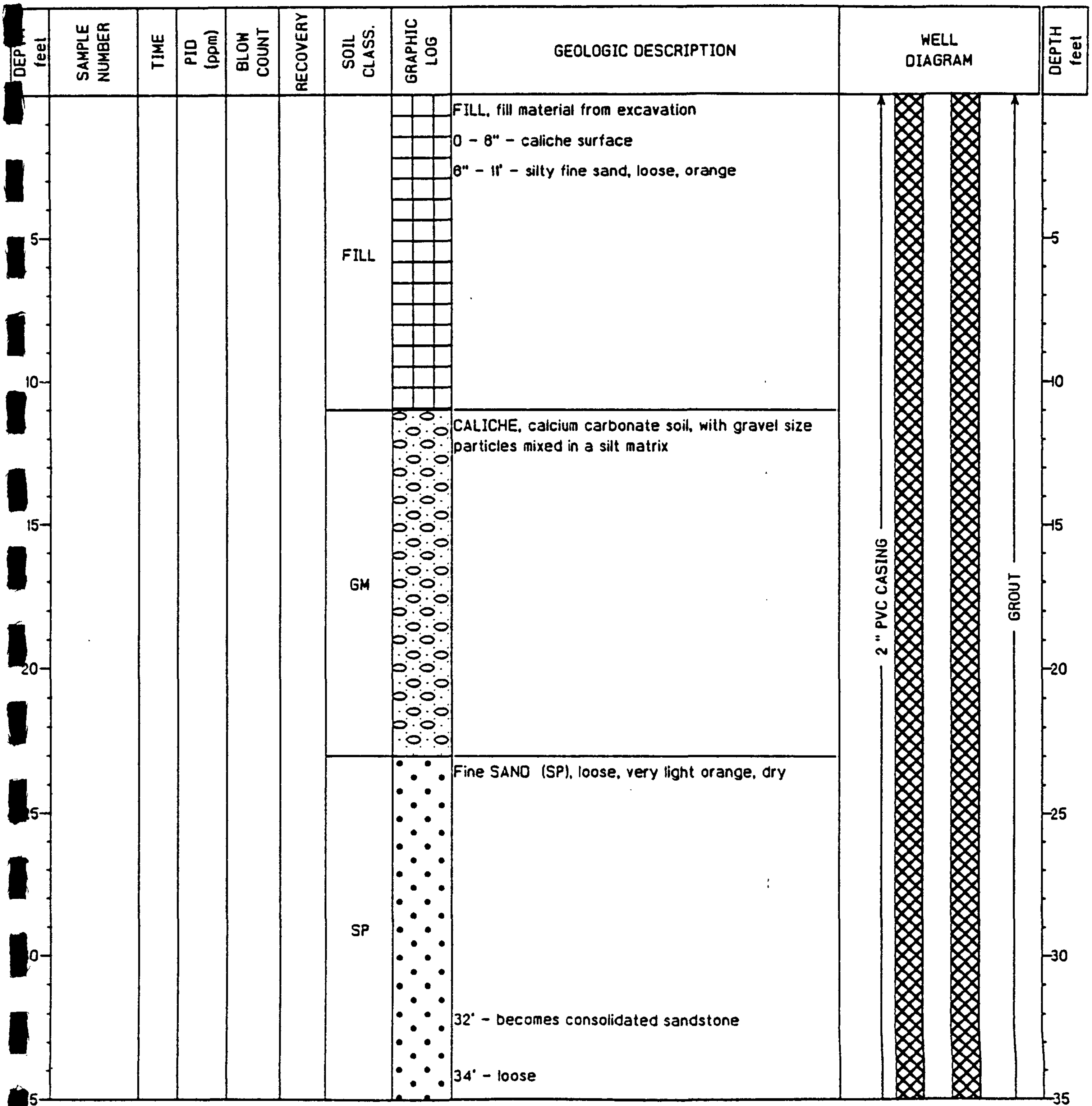
SUBSURFACE EXPLORATION LOG

BORING NUMBER: WM-1

CLIENT: BROWN McCARROLL AND OAKS HARTLINE
JOB NUMBER: 1009-006-105
LOCATION: Exxon - West Marland
SURFACE ELEVATION:

GEOLOGIST: Shawn Eubanks
DATE DRILLED: 3/15/94
DRILLING COMPANY: Harrison Drilling
X - COORDINATE:

TOTAL DEPTH: 60 Feet
DRILLING METHOD: HSA
SAMPLE METHOD:
Y - COORDINATE:



DEPTH feet	SAMPLE NUMBER	TIME	PID (ppm)	BLOW COUNT	RECOVERY	SOIL CLASS.	GEOLOGIC DESCRIPTION
0–11						FILL	FILL, fill material from excavation 0 - 8" - caliche surface 8" - 11' - silty fine sand, loose, orange
11–23						GM	CALICHE, calcium carbonate soil, with gravel size particles mixed in a silt matrix
23–35						SP	Fine SAND (SP), loose, very light orange, dry 32' - becomes consolidated sandstone 34' - loose

SAMPLER TYPE

SS - SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGER
MDC - DRIVING CASING
MD - MUD DRILLING

SUBSURFACE EXPLORATION LOG

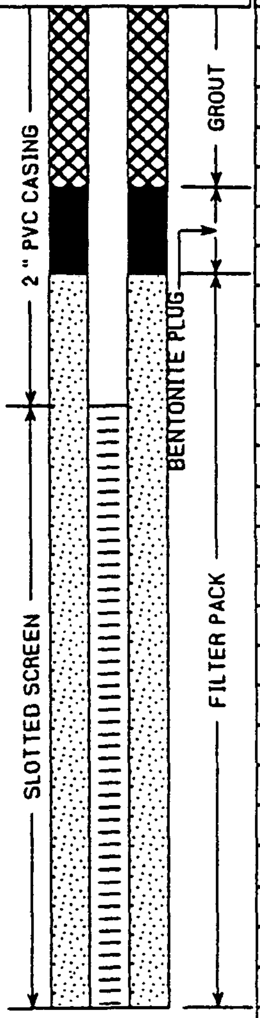
BORING NUMBER: WM-1

CLIENT: BROWN McCARROLL AND OAKS HARTLINE
JOB NUMBER: 1009-006-105
LOCATION: Exxon - West Marland
SURFACE ELEVATION:

GEOLOGIST: Shawn Eubanks
DATE DRILLED: 3/15/94
DRILLING COMPANY: Harrison Drilling
X - COORDINATE:

TOTAL DEPTH: 60 Feet
DRILLING METHOD: HSA
SAMPLE METHOD:
Y - COORDINATE:

DEPTH feet	SAMPLE NUMBER	TIME	PID (ppm)	BLOW COUNT	RECOVERY	SOIL CLASS.	GRAPHIC LOG	GEOLOGIC DESCRIPTION	WELL DIAGRAM	DEPTH feet
								35 - consolidated		
40								40' - less consolidated		40
45										45
						SP				
50										50
55										55
60								TERMINATED BORING AT 60'		60
65										65
70										70



SAMPLER TYPE

SS - SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CC - CONTINUOUS CORE

BORING METHOD

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGER
MDC - DRIVING CASING
MD - MUD DRILLING

APPENDIX B

LABORATORY REPORTS

Express Laboratories
401 North 11th • La Porte, Texas 77571
(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR   Sample ID: WM-1   Attn: S. EUBANKS
lient: EXXON - DAL PASO   Proj. No: 1009005105
roj. Location: HOBBS, NM   Environ ID: 25308
Sample Matrix: LIQUID   Sample Depth: Sampled: 03/ 18 / 94
eceived: 03/ 21 / 94   Reported: 03/ 28 / 94   Invoice No.: 4885

TOTAL RCRA METALS

Metals	Method	Results mg/l	Detection Limit mg/l
Aluminum	6010	< 0.1	0.1
Arsenic	6010	< 0.1	0.1
Barium	6010	0.1	0.1
Boron	6010	0.1	0.1
Cadmium	6010	< 0.1	0.1
Chromium	6010	< 0.1	0.1
Cobalt	6010	< 0.1	0.1
Copper	6010	< 0.1	0.1
Iron	6010	0.3	0.1
Lead	6010	< 0.1	0.1
Manganese	7470	< 0.1	0.01
Mercury	7470	< 0.01	0.01
Nickel	6010	< 0.1	0.1
Selenium	6010	< 0.1	0.1
Silver	6010	< 0.1	0.1
Uranium	6010	0.1	0.1
Zinc	6010	0.2	0.1

Analyst: A.R.   Date Extracted: 03/25/94   Date Analyzed: 03/25/94 @ 14:12

John E. Keller
John E. Keller, Ph.D.

401 North 11th • La Porte, Texas 77571

Express Laboratories

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: **ENSR** Sample ID: **WM-1** Environ ID: **25308**
Project: **Exxon - Dal Paso, Hobbs, NM, Proj. # 1009-005-105** Matrix: **Liquid**
Date Sampled: **3/18/94** Date Received: **3/21/94** Date/Time Analyzed: **3/24/94 16:45**

EPA SW-846 Method 8240 - Total Volatiles

COMPOUNDS	CONCENTRATION (ug/l)	PQL (ug/l)	CAS #
Acetone	< 25	25	67-64-1
Benzene	< 5	5	71-43-2
Bromodichloromethane	< 5	5	75-27-4
Bromoform	< 5	5	75-25-2
Bromomethane	< 10	10	75-83-9
2-Butanone	< 10	10	78-93-3
Carbon disulfide	< 5	5	75-15-0
Carbon Tetrachloride	< 5	5	56-23-5
Chlorobenzene	< 5	5	108-90-7
Chloroethane	< 10	10	75-00-3
2-Chloroethyl vinyl ether	< 10	10	110-75-8
Chloroform	< 5	5	67-66-3
Chloromethane	< 10	10	74-87-3
Dibromochloromethane	< 5	5	124-48-1
1,1-Dichloroethane	< 5	5	75-34-3
1,2-Dichloroethane	< 5	5	107-06-2
1,1-Dichloroethene	< 5	5	75-35-4
1,2-Dichloroethene (total)	< 5	5	540-59-0
1,2-Dichloropropane	< 5	5	78-87-5
cis-1,3-Dichloropropene	< 5	5	10061-01-5
trans-1,3-Dichloropropene	< 5	5	10061-02-6
Ethylbenzene	< 5	5	100-41-4
2-Hexanone	< 10	10	591-78-6
4-Methyl-2-Pentanone	< 10	10	108-10-1
Methylene Chloride	7	5	75-09-2
Styrene	< 5	5	100-42-5
1,1,2,2-Tetrachloroethane	< 5	5	79-34-5
Tetrachloroethene	< 5	5	127-18-4
Toluene	< 5	5	108-88-3
1,1,1-Trichloroethane	< 5	5	71-55-6
1,1,2-Trichloroethane	< 5	5	79-00-5
Trichloroethene	< 5	5	79-01-6
Vinyl acetate	< 10	10	108-05-4
Vinyl chloride	< 10	10	75-01-4
m&p-Xylene	< 10	10	1330-20-7
o-Xylene	< 5	5	1330-20-7

SURROGATE RECOVERIES

SURROGATE	CONCENTRATION	% RECOVERY	RANGE
1,2-Dichloroethane-d4 (surr)	46	92	70-121
Toluene-d8 (surr)	55	110	81-117
4-Bromofluorobenzene (surr)	52	104	74-121

Carl Degner, GC/MS Analyst

John Keller

John Keller, Laboratory Director

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer:	**ENSR**	Sample ID:	**WM-1**	Environ ID:	**25308**
Project:	**Exxon - Dal Paso, Hobbs, NM, Proj. # 1009-005-105**			Matrix:	**Liquid**
Date Sampled:	**3/18/94**	Date Received:	**3/18/94**	Date Extracted:	**3/21/94**
		Concentration Factor:	**1000/1**	Date/Time Analyzed:	**3/24/94 19:39**

EPA SW-846 Method 8270 - Semivolatiles

COMPOUNDS	CONCENTRATION (ug/l)	PQL (ug/l)	CAS #
Acenaphthene	< 10	10	83-32-9
Acenaphthylene	< 10	10	208-96-8
Anthracene	< 10	10	120-12-7
Benzo[a]anthracene	< 10	10	56-55-3
Benzo[b]fluoranthene	< 10	10	205-99-2
Benzo[k]fluoranthene	< 10	10	207-08-9
Benzo[g,h,i]perylene	< 10	10	191-24-2
Benzo[a]pyrene	< 10	10	50-32-8
bis(2-Chloroethoxy)methane	< 10	10	111-91-1
bis(2-Chloroethyl)ether	< 10	10	111-44-4
bis(2-chloroisopropyl)ether	< 10	10	108-60-1
bis(2-Ethylhexyl)phthalate	13	10	117-81-7
4-Bromophenyl-phenylether	< 10	10	101-55-3
Butylbenzylphthalate	< 10	10	85-68-7
4-Chloroaniline	< 20	20	106-47-8
4-Chloro-3-methylphenol	< 20	20	59-50-7
2-Chloronaphthalene	< 10	10	91-58-7
2-Chlorophenol	< 10	10	95-57-8
4-Chlorophenyl-phenylether	< 10	10	7005-72-3
Chrysene	< 10	10	218-01-9
Dibenz[a,h]anthracene	< 10	10	53-70-3
Dibenzofuran	< 10	10	132-64-9
Di-n-butylphthalate	< 10	10	84-74-2
1,2-Dichlorobenzene	< 10	10	95-50-1
1,3-Dichlorobenzene	< 10	10	541-73-1
1,4-Dichlorobenzene	< 10	10	106-46-7
3,3'-Dichlorobenzidine	< 20	20	91-94-1
2,4-Dichlorophenol	< 10	10	120-83-2
Diethylphthalate	< 10	10	84-66-2
2,4-Dimethylphenol	< 10	10	105-67-9
Dimethylphthalate	< 10	10	99-65-0
4,6-Dinitro-2-methylphenol	< 50	50	534-52-1
2,4-Dinitrophenol	< 50	50	51-28-5
2,4-Dinitrotoluene	< 10	10	121-14-2
2,6-Dinitrotoluene	< 10	10	606-20-2
Di-n-octylphthalate	< 10	10	117-84-0
Fluoranthene	< 10	10	206-44-0

Customer:	**ENSR**	Sample ID:	**WM-1**	Environ ID:	**25308**
Project:	**Exxon - Dal Paso, Hobbs, NM,**		**Proj. # 1009-005-105**	Matrix:	**Liquid**
Date Sampled:	**3/18/94**	Date Received:	**3/18/94**	Date Extracted:	**3/21/94**
		Concentration Factor:	**1000/1**	Date/Time Analyzed:	**3/24/94 19:39**

EPA SW-846 Method 8270 - Semivolatiles

COMPOUNDS	CONCENTRATION (ug/l)	PQL (ug/l)	CAS #
Fluorene	< 10	10	86-73-7
Hexachlorobenzene	< 10	10	118-74-1
Hexachloroethane	< 10	10	67-72-1
Hexachlorocyclopentadiene	< 10	10	77-47-4
Indeno[1,2,3-cd]pyrene	< 10	10	193-39-5
Isophorone	< 10	10	78-59-1
2-Methylnaphthalene	< 10	10	91-57-6
2-Methylphenol	< 10	10	95-48-7
4-Methylphenol	< 10	10	106-44-5
Naphthalene	< 10	10	91-20-3
2-Nitroaniline	< 50	50	88-74-4
3-Nitroaniline	< 50	50	99-09-2
4-Nitroaniline	< 20	20	100-01-6
Nitrobenzene	< 10	10	98-95-3
2-Nitrophenol	< 10	10	88-75-5
4-Nitrophenol	< 50	50	100-02-7
n-Nitrosodiphenylamine	< 10	10	86-30-6
n-Nitroso-di-n-propylamine	< 10	10	621-64-7
Pentachlorophenol	< 50	50	87-86-5
Phenanthrene	< 10	10	85-01-8
Phenol	< 10	10	108-95-2
Pyrene	< 10	10	129-00-0
1,2,4-Trichlorobenzene	< 10	10	120-82-1
2,4,5-Trichlorophenol	< 10	10	95-95-4
2,4,6-Trichlorophenol	< 10	10	88-06-2

	SURROGATE RECOVERIES		
SURROGATE	CONCENTRATION	% RECOVERY	RANGE
Nitrobenzene-d5	37	74	35-114
2-Fluorobiphenyl	40	80	43-116
Terphenyl-d14	40	80	33-141
Phenol-d5	29	29	10-100
2-Fluorophenol	49	49	21-100
2,4,6-Tribromophenol	100	100	10-123

Carl Degner, GC/MS Analyst

John Keller, Laboratory Director

1009-005-105
WM-1-CUT
PAGE 1 of 1

Express Laboratories
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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

ustomer: ENSR Sample ID: WM-1-CUT Attn: S. EUBANKS
lient: EXXON - DAL PASO Proj. No: 1009005105
Proj. Location: HOBBS, NM Environ ID: 25309
ample Matrix: SOIL Sample Depth: Sampled: 03/ 18 / 94
Received: 03/ 21 / 94 Reported: 03/ 28 / 94 Invoice No.: 4885

Test Method 418.1	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	11	< 10	10

Analyst: J.M. Date Extracted: 03/21/94 Date Analyzed: 03/22/94 @ 11:00
tandard : 418.1 - 6.5.1

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TRIP BLANK
PAGE 1 of 1

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Customer: ENSR Sample ID: TRIP BLANK Attn: S. EUBANKS
lient: EXXON - DAL PASO Proj. No: 1009005105
Proj. Location: HOBBS, NM Environ ID: 25310
ample Matrix: LIQUID Sample Depth: ____ Sampled: __/__/__
eceived: 03/ 21 / 94 Reported: 03/ 28 / 94 Invoice No.: 4885

Test Method 5030/8020	Result PPB (ug/l)	Blank PPB (ug/l)	Detection Limit PPB (ug/l)
Benzene	< 1	< 1	1
Toluene	< 1	< 1	1
Ethylbenzene	< 1	< 1	1
Xylenes	< 3	< 3	3

alyst: J.M. Date Extracted: 03/23/94 Date Analyzed: 03/23/94 @ 19:20
tandard : 8020 - 5.2

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ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH	METHOD: 418.1	MATRIX: SOIL
ANALYST: J.M.	DETECTION LIMIT: 10	UNITS: PPM (mg/kg)
DATE: 03/22/94	SAMPLES IN SET: 10	FREQUENCY: 1/20

SAMPLES:	25296-25298, 25300, 25307, 25309, 25320-25321
	25334-25335

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 10	500	500	457	91

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	457	411	11

MS TOTAL [C] = [A] + [3]

SAMPLE ANALYSIS [A] = [F + G] / 2

% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]

% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]

ND = NONE DETECTED WHEN ANALYZED

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ENVIRON QUALITY CONTROL REPORT

ANALYSIS: LEAD (TOTAL)	METHOD: 6010	MATRIX: WATER
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 03/22/94	SAMPLES IN SET: 5	FREQUENCY: 1/20

SAMPLES:	25293, 25304-25305, 25308, 25314

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 0.1	10.0	10.0	9.0	90.0

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	9.0	9.0	0.0

MS TOTAL [C] = [A] + [B]

SAMPLE ANALYSIS [A] = [F + G] / 2

% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]

% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]

ND = NONE DETECTED WHEN ANALYZED

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ENVIRON QUALITY CONTROL REPORT

ANALYSIS:TOTAL CHROMIUM	METHOD: 3010/7190	MATRIX: WATER
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 03/22/94	SAMPLES IN SET: 3	FREQUENCY: 1/20

SAMPLES:	25304-25305, 25308

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 0.1	10.0	10.0	9.0	90.0

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	9.0	9.0	0.0

MS TOTAL [C] = [A] + [B]

SAMPLE ANALYSIS [A] = [F + G] / 2

% RECOVERY [E] = 100 * |[D - A]| / [B]

% RELATIVE DIFFERENCE [H] = 200 * |[F - G]| / [F + G]

ND = NONE DETECTED WHEN ANALYZED

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ustomer: ENSR Sample ID: WM-1 Attn: S. EUBANKS
Client: EXXON - ENSR Proj. No: 1009006105
roj. Location: HOBBS, NM Environ ID: 26144
Sample Matrix: LIQUID Sample Depth: Sampled: 04/ 25 / 94
eceived: 04/ 26 / 94 Reported: 05/ 03 / 94 Invoice No.: 5075

Test Method 160.1	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Total Dissolved Solids	783	< 10	10

Analyst: J.M. Date Extracted: 04/29/94 Date Analyzed: 04/29/94 @ 14:00
tandard : 160.1

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Customer: ENSR Sample ID: WM-1 Attn: S. EUBANKS
Client: EXXON - ENSR Proj. No: 1009006105
roj. Location: HOBBS, NM Environ ID: 26144
Sample Matrix: LIQUID Sample Depth: Sampled: 04/ 25 / 94
eceived: 04/ 26 / 94 Reported: 05/ 03 / 94 Invoice No.: 5075

DISSOLVED METALS

Metals	Method	Results mg/l	Regulation Limit mg/l
Aluminum	6010	< 5.0	5.0
Arsenic	6010	< 0.1	0.1
Barium	6010	< 1.0	1.0
Boron	6010	< 0.75	0.75
Cadmium	6010	< 0.01	0.01
Chromium	6010	< 0.05	0.05
Cobalt	6010	< 0.05	0.05
Copper	6010	< 0.1	1.0
Iron	6010	< 1.0	1.0
Lead	6010	< 0.05	0.05
Manganese	6010	< 0.2	0.2
Mercury	7470	< 0.002	0.002
Molybdenum	6010	< 1.0	1.0
Nickel	6010	< 0.2	0.2
Selenium	6010	< 0.05	0.05
Silver	6010	< 0.05	0.05
Uranium	6010	< 5.0	5.0
Zinc	6010	< 10.0	10.0

Analyst: A.R. Date Extracted: 05/02/94 Date Analyzed: 05/02/94 @ 12:17

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ENVIRON QUALITY CONTROL REPORT

ANALYSIS: LEAD (TOTAL)	METHOD: 6010	MATRIX: WATER
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 05/02/94	SAMPLES IN SET: 2	FREQUENCY: 1/20

SAMPLES:	26144-26145

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 0.1	5.0	5.0	4.9	99.0

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	4.9	4.7	4.2

MS TOTAL [C] = [A] + [B]

SAMPLE ANALYSIS [A] = [F + G] / 2

% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]

% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]

ND = NONE DETECTED WHEN ANALYZED

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ENVIRON QUALITY CONTROL REPORT

ANALYSIS:TOTAL CHROMIUM	METHOD: 3010/7190	MATRIX: WATER
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 05/02/94	SAMPLES IN SET: 2	FREQUENCY: 1/20

SAMPLES:	26144-26145

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 0.1	2.5	2.5	2.1	83.0

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	2.1	2.1	0.0

MS TOTAL [C] = [A] + [B]

SAMPLE ANALYSIS [A] = [F + G] / 2

% RECOVERY [E] = 100 * |[D - A]| / [B]

% RELATIVE DIFFERENCE [H] = 200 * |[F - G]| / [F + G]

ND = NONE DETECTED WHEN ANALYZED

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