GW - 3

REPORTS

YEAR(S):

2000-1996

Highlander Environmental Corp.

Midland, Texas

August 24, 2000

Mr. William C. Olson
New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco
Santa Fe, New Mexico 87505

AUG 28

Re: Pond Closure Investigation Report, Texaco Exploration and Production Inc., Former Eunice # 1 (South) Gas Plant, Eunice, New Mexico.

Dear Mr. Olson:

On behalf of Texaco Exploration and Production Inc. (Texaco), please find enclosed one copy of the above-referenced report. The report presents the results of investigations of two inactive surface impoundments, conducted at Texaco's former Eunice #1 (South) Gas Plant, located near Eunice, New Mexico. Please call if you have questions.

Sincerely,
Highlander Environmental Corp.

Tim Reed

Timothy M. Reed, REM
Vice President

Encl.

cc: Mr. Robert Patterson, Texaco
Mr. Chris Williams, NMOCD- Hobbs District

POND CLOSURE INVESTIGATION REPORT

TEXACO EXPLORATION AND PRODUCTION, INC.

FORMER EUNICE #1 (SOUTH) GAS PLANT

LEA COUNTY, NEW MEXICO

Prepared
for

TEXACO EXPLORATION & PRODUCTION INC.

AUGUST 2000

Highlander Environmental Corp.

Midland, Texas

Highlander Environmental Corp.

Midland, Texas

August 23, 2000

Mr. William C. Olson
New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco
Santa Fe, New Mexico 87505

Re: Pond Closure Investigation Report, Texaco Exploration and Production Inc., Former Eunice #1 (South) Gas Plant, Lea County, New Mexico

Dear Mr. Olson:

This report presents the results of a subsurface investigation of two (2) inactive surface impoundments at the former Texaco Exploration and Production Inc. (Texaco), Eunice #1 (South) Gas Plant (Site), located in Lea County, New Mexico. The Site has been operated by Dynegy Midstream Services, L.P., since July 1998. The ponds, identified as the North Pond (Pond #2) and South Pond (Pond #4), are located near the northeast corner of the Site. The Site is situated in the southeast quarter (SE/4) of the northwest quarter (NW/4), Unit Letter F, Section 27, Township 22 North, Range 37 East. Figure 1 presents a Site location and topographic map. Figure 2 presents a Site drawing.

1.0 BACKGROUND

The North Pond (Pond #2) was previously used for temporary storage of 1.2 specific gravity brine displaced from cavern (jug) wells during storage of fractionated products (i.e., propane, butane, etc.). The North Pond has a designed capacity of 75,000 barrels (bbl.), and measures approximately 243 ' x 243 ' x 15 '. The pond is lined with a 45 Mil nylon reinforced butyl liner, and is equipped with leak detection. The leak detection consists of a one-foot square perimeter collection trench, connected to a 4-inch diameter PVC lateral near the west end of the pond. The 4-inch PVC lateral is connected to a 4-inch diameter PVC riser, where fluid measurements can be obtained. Texaco stopped using the North Pond in early 1998, and brine is currently stored in a lined impoundment (Pond #3), located west of the North Pond.

The South Pond (Pond #4) was previously used for temporary storage of water produced from Site operations (i.e., boiler and cooling tower blowdown, and produced water). Water was pumped from the pond to the permitted disposal well (SWD-1), located west

of the pond. Texaco stopped using the South Pond in mid 1998. The pond has a designed capacity of approximately 52,000 bbl, and measures approximately 190' x 240' x 16'. The pond is double-lined with two (2) high-density polyethylene (HDPE) liners, and is equipped with leak detection. The leak detection system consists of a PVC lateral located near the center of the pond, which connects to a riser pipe south of the pond. The bottom of the pond slopes inward, allowing any fluid to flow to the collection lateral. Fluid observations are made at the riser pipe located south of the pond. Water from the plant is currently placed in portable tanks, and disposed of in the SWD.

2.0 INVESTIGATIONS

Sediment samples were collected from the North and South Ponds on December 7, 1999. Soil samples were collected from borings drilled near the corners of each pond on January 6-7, 2000. The investigations were conducted in accordance with a work plan ("Revised Pond Closure Investigation Plan, Former Texaco Exploration and Production Inc., Eunice #1 (South) Gas Plant, Lea County, New Mexico, September 29, 1999"), which was approved by the New Mexico Oil Conservation Division (NMOCD) on October 5, 1999.

2.1 Sediment Samples and Analyses

Samples of sediment were collected from each pond on December 7, 1999. Each pond was divided into two (2) approximately equal composite areas (North and South). Grab samples were collected at five (5) locations in each composite area using a clean sampling trowel. The grab samples were placed in a clean plastic sample bag, thoroughly mixed, and immediately transferred to a clean glass sample container. The glass containers were labeled, and chilled in an ice chest. Portions of the two composite samples for each pond were also blended into a single sample for each pond. As a result, a total of three samples were collected for each pond, submitted under chain-of-custody control to Trace Analysis, Inc. (Lubbock, Texas), and analyzed for benzene, toluene, ethylbenzene, xylene (collectively referred to as BTEX), gasoline and diesel range petroleum hydrocarbons (TPH), chloride and total chromium. Table 1 presents a summary of the laboratory analyses for the sediment samples. Figure 3 and Figure 4 present sample locations for the North and South Ponds, respectively. Appendix A presents the laboratory reports and chain of custody documentation.

Measurements of sediment thickness and Naturally Occurring Radioactive Materials (NORM) levels were obtained at each grab sample location. Sediment thickness was measured by advancing a probe until resistance was encountered. The thickness of sediment in the South Pond ranged from about 4 to 17 inches, and from 10 to 12 inches in the North Pond. The actual sediment thickness in the North Pond may be greater than 12 inches, since it could not be determined if probe resistance occurred from the liner or sediment. The NORM readings were obtained using a Ludlum Model 3 survey meter, equipped with a Model 44-2, 1" x 1" sodium iodide probe. The readings ranged from 4.4 to 8 microRoentgens/hour (uR/hr), and were below background levels (8 to 10 uR/hr).

2.2 Soil Sampling and Analyses

Soil samples were collected from borings drilled near the corners of each impoundment. The borings were advanced from approximately 35 to 47 feet below ground surface (BGS), using a truck-mounted air-rotary drilling rig. The soil samples were collected approximately every ten feet using a split-spoon or core barrel sampler. Six (6) samples were collected from each boring at the North Pond, and five (5) samples were collected from each boring at the South Pond. The samples were placed in clean glass sample jars, labeled, chilled in an ice chest, and submitted under chain-of-custody control to Trace Analysis, Inc., located in Lubbock, Texas. Lithologic logs were prepared for the borings, and are presented in Appendix C. Figure 3 and Figure 4 present the locations of boring drilled at the North and South Ponds, respectively.

A portion of each sample was retained in a clean plastic sample bag for field screening, using the ambient temperature headspace (ATH) method. The concentration of organic vapors in the headspace of the sample bag was measured using a photoionization detector (PID), after approximately 15 minutes at ambient temperature. The PID is a qualitative instrument that measures the concentration of ionizable hydrocarbon in the sample headspace. The readings are displayed in parts per million (ppm), and the instrument was calibrated to isobutylene (75 ppm) prior to use. The PID readings are summarized on Table 2, and presented on the lithologic logs (Appendix B). The instrument calibration record is presented in Appendix C.

All samples were analyzed for chloride by method E 300.0. In addition, the sample exhibiting the highest PID reading, and the deepest sample from each boring were analyzed for BTEX by EPA method SW 846-8021B and TPH by Method 8015B modified. Table 2 presents a summary of the laboratory analyses. Appendix A presents the laboratory reports.

3.0 INVESTIGATION RESULTS

The soil sample analyses were compared to the NMOCD recommended remedial action levels (RRAL) for BTEX and TPH. The concentrations of benzene and total BTEX were well below the RRAL's of 10 milligrams per kilogram (mg/kg) and 50 mg/kg, respectively. The highest TPH concentration reported in the soil samples was 96.6 mg/kg, in sample S-4, 3 to 4 feet BGS. The TPH concentrations in the soil samples were below the NMOCD's most restrictive cleanup level of 100 mg/kg. The highest chloride concentration was reported in the sample from boring N-2 (3 to 4 feet BGS), which reported 170,000 mg/kg chloride. The concentration of chloride diminishes with depth.

4.0 PROPOSED SITE CLOSURE

Since impacts to soil were not observed at the south pond, Texaco proposes to move sediment in the south pond to the north pond. The liner beneath of the north pond will be folded toward the interior of the pond, and covered with the liner from the south pond. The top liner will be covered with approximately 1 foot of clay and crowned to provide a

barrier against infiltration of precipitation. The entire area (south and north ponds) will be graded with a final cover consisting of approximately 18 inches of topsoil, and seeded with forage grasses. Monitoring of groundwater will be performed in accordance with the NMOCD approved groundwater abatement program.

If you have any questions or need any additional information, please advise.

Highlander Environmental Corp.

Tim Reed

Timothy M. Reed, REM
Vice President

Encl.

cc: Mr. Robert Patterson, Texaco
Mr. Chris Williams, NMOCD- Hobbs District

TABLES

Table 1: Summary of BTEX, TPH, Chromium and Chloride Analyses of Sediment Samples
Texaco Exploration and Production, Inc.
Eunice #1 (South) Gas Plant, Storage Ponds
Lea County, New Mexico

Pond	Sample	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)	Chromium (mg/kg)	Chloride (mg/kg)
South	N 1/2	12/7/99	1.05	8.95	10.1	23.3	888	203	1,091	16	19,000
	S 1/2	12/7/99	3.76	8.58	27.4	<0.200	1,610	128	1,738	23	20,000
	S. Pond	12/7/99	3.29	7.94	21.5	<0.200	1,320	111	1,431	12	20,000
North	N 1/2	12/7/99	0.502	0.868	0.793	2.98	344	1,270	1,614	22	120,000
	S 1/2	12/7/99	3.06	26.6	27.2	64.0	1,950	1,170	3,120	20	49,000
	N. Pond	12/7/99	2.11	6.39	15.5	<0.200	1,310	2,240	3,550	23	80,000

Notes:
1. (mg/kg): Milligrams per kilogram
2. GRO: Gasoline Range Hydrocarbons
3. DRO Diesel Range Hydrocarbons
4. TPH: Total Petroleum Hydrocarbons (GRO & DRO)

Table 2: Summary of PID, BTEX, TPH and Chloride Analyses of Soil Samples
Texaco Exploration and Production, Inc., Eunice #1 (South) Gas Plant, Storage Ponds
Lea County, New Mexico

Pond	Soil Boring	Sample Depth (ft)	Sample Date	PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/L)
South	S-1	2.5-3.5	1/6/00	10.1	-	-	-	-	-	-	-	3,800
		10-11	1/6/00	3.2	-	-	-	-	-	-	-	3,800
		20-21	1/6/00	19.2	-	-	-	-	-	-	-	1,100
		30-31	1/6/00	27.3	<0.05	<0.05	0.11	0.161	61.3	<50	61.3	670
		35-36	1/6/00	3.9	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	640
	S-2	2-3	1/6/00	43.6	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	540
		10-11	1/6/00	31.9	-	-	-	-	-	-	-	830
		20-21	1/6/00	31.3	-	-	-	-	-	-	-	210
		30-31	1/6/00	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
		35-36	1/6/00	13.0	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	96
	S-3	2-3	1/6/00	20.4	-	-	-	-	-	-	-	2,400
		10-11	1/6/00	25.4	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	430
		20-21	1/6/00	21.5	-	-	-	-	-	-	-	92
		30-31	1/6/00	26.0	-	-	-	-	-	-	-	86
		35-36	1/6/00	27.0	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	73
	S-4	3-4	1/6/00	112.8	<0.1	<0.1	<0.1	0.159	96.6	<50	96.6	2,000
		10-11	1/6/00	24.1	-	-	-	-	-	-	-	490
		20-21	1/6/00	14.9	-	-	-	-	-	-	-	59
		30-31	1/6/00	18.9	-	-	-	-	-	-	-	78
		35-36	1/6/00	7.8	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	89

Notes:

1. (mg/kg): Milligrams per kilogram
2. (ppm): Parts Per Million
3. GRO: Gasoline Range Hydrocarbons
4. DRO Diesel Range Hydrocarbons
5. TPH: Total Petroleum Hydrocarbons (GRO & DRO)
6. <: Concentration less than test method detection limits
7. -- No data available
8. N/R No Sample Recovery
9. ft: Sample Depth in Feet Below Ground

Table 2: (Continued) Summary of PID, BTEX, TPH and Chloride Analyses of Soil Samples
Texaco Exploration and Production, Inc., Eunice #1 (South) Gas Plant, Storage Ponds
Lea County, New Mexico

Pond	Soil Boring	Sample Depth (ft)	Sample Date	PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/L)
North	N-1	3-4	1/6/00	14.8	-	-	-	-	-	-	-	1,500
		10-11	1/6/00	9.7	-	-	-	-	-	-	-	9,900
		20-21	1/6/00	34.5	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	17,000
		30-31	1/6/00	18.9	-	-	-	-	-	-	-	6,400
		40-41	1/6/00	22.8	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	7,400
		46-47	1/6/00	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	N-2	3-4	1/7/00	5.8	-	-	-	-	-	-	-	170,000
		10-11	1/7/00	9.7	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	31,000
		20-21	1/7/00	1.3	-	-	-	-	-	-	-	12,000
		30-31	1/7/00	1.9	-	-	-	-	-	-	-	7,100
		40-41	1/7/00	2.6	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	2,800
		46-47	1/7/00	3.2	-	-	-	-	-	-	-	1,700
	N-3	3-4	1/7/00	88.9	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	5,000
		10-11	1/7/00	15.9	-	-	-	-	-	-	-	9,200
		20-21	1/7/00	24.9	-	-	-	-	-	-	-	9,300
		30-31	1/7/00	12.0	-	-	-	-	-	-	-	3,100
		40-41	1/7/00	20.4	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	1,500
		46-47	1/7/00	7.4	-	-	-	-	-	-	-	2,300

Notes:

1. (mg/kg): Milligrams per kilogram
2. (ppm): Parts Per Million
3. GRO: Gasoline Range Hydrocarbons
4. DRO Diesel Range Hydrocarbons
5. TPH: Total Petroleum Hydrocarbons (GRO & DRO)
6. <: Concentration less than test method detection limits
7. -- No data available
8. N/R No Sample Recovery
9. ft: Sample Depth in Feet Below Ground

Table 2: (Continued) Summary of PID, BTEX, TPH and Chloride Analyses from Soil Samples
Texaco Exploration and Production, Inc., Eunice #1 (South) Gas Plant, Storage Ponds
Lea County, New Mexico

Pond	Soil Boring	Sample Depth (ft)	Sample Date	PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/L)
	N-4	3-4	1/7/00	193.0	0.23	0.538	1.1	2.31	50.6	<50	50.6	7,100
		10-11	1/7/00	19.8	-	-	-	-	-	-	-	13,000
		20-21	1/7/00	28.2	-	-	-	-	-	-	-	12,000
		30-31	1/7/00	12.2	-	-	-	-	-	-	-	8,400
		40-41	1/7/00	7.4	<0.05	<0.05	<0.05	<0.05	<5	<50	<55	7,400
		46-47	1/7/00	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Notes:

1. (mg/kg): Milligrams per kilogram
2. (ppm): Parts Per Million
3. GRO: Gasoline Range Hydrocarbons
4. DRO Diesel Range Hydrocarbons
5. TPH: Total Petroleum Hydrocarbons (GRO & DRO)
6. <: Concentration less than test method detection limits
7. -- No data available
8. N/R No Sample Recovery
9. ft: Sample Depth in Feet Below Ground

FIGURES

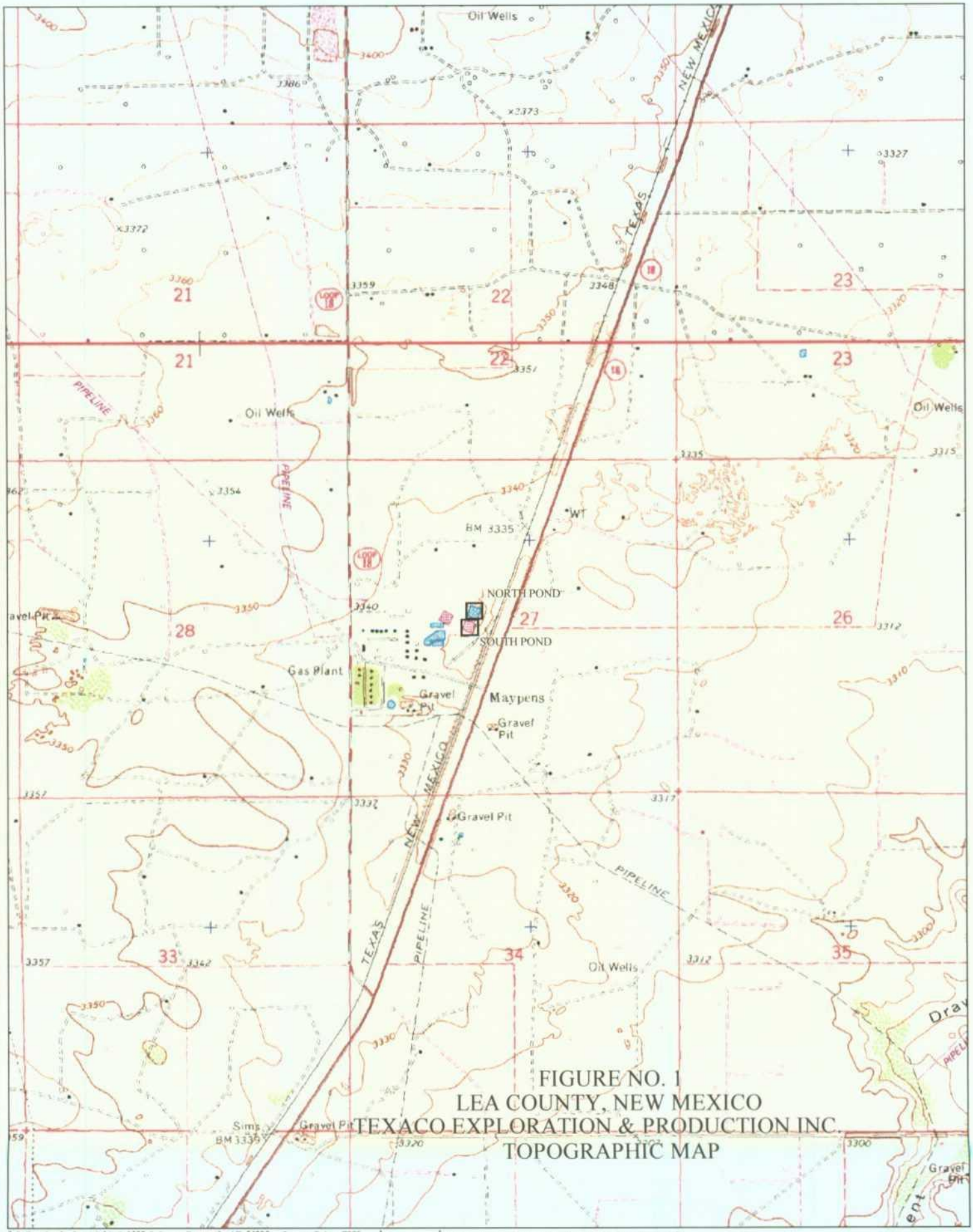
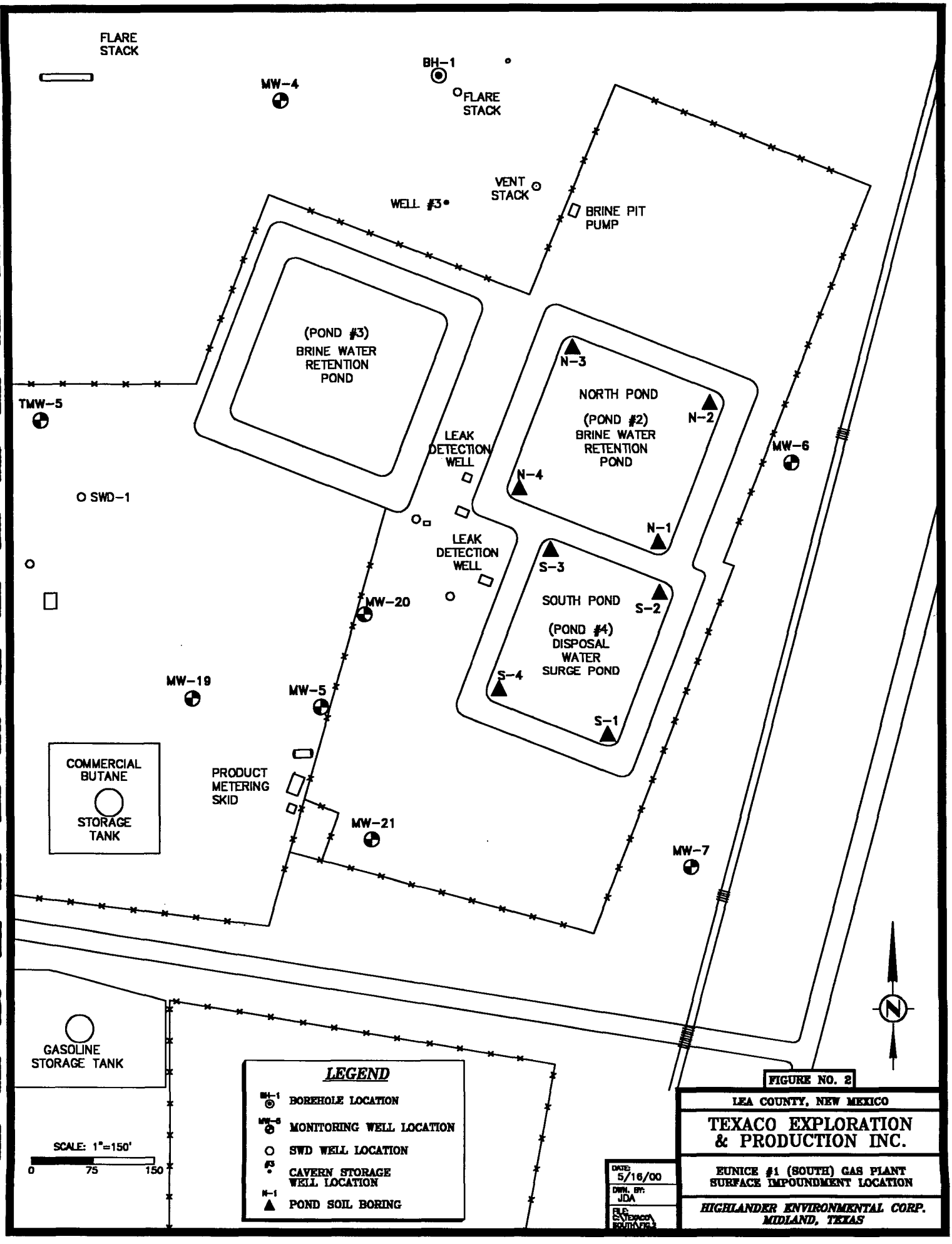
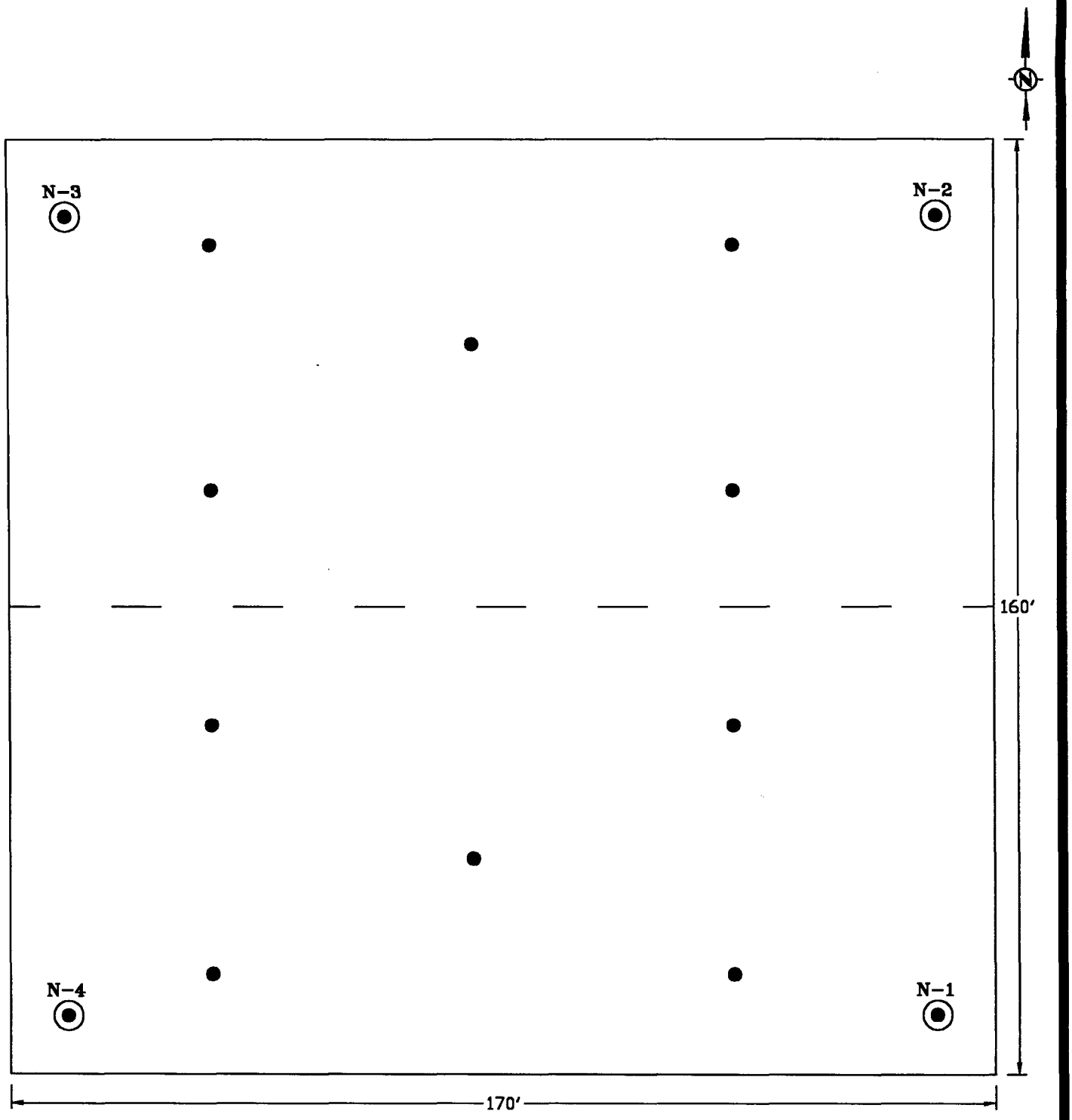


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
TEXACO EXPLORATION & PRODUCTION INC.
TOPOGRAPHIC MAP


FLARE STACK
MW-4
BH-1
FLARE STACK
VENT STACK
WELL #3
BRINE PIT PUMP
(POND #3) BRINE WATER RETENTION POND
N-3
NORTH POND
(POND #2) BRINE WATER RETENTION POND
N-2
N-4
N-1
TMW-5
LEAK DETECTION WELL
MW-6
SWD-1
LEAK DETECTION WELL
S-3
SOUTH POND
(POND #4) DISPOSAL WATER SURGE POND
S-2
S-4
S-1
MW-20
MW-19
MW-5
COMMERCIAL BUTANE STORAGE TANK
PRODUCT METERING SKID
MW-21
MW-7
GASOLINE STORAGE TANK
LEGEND
BH-1 BOREHOLE LOCATION
MW-6 MONITORING WELL LOCATION
SWD WELL LOCATION
#3 CAVERN STORAGE WELL LOCATION
N-1 POND SOIL BORING
SCALE: 1"=150'
0 75 150
N
DATE: 5/16/00
DWN. BY: JDA
FILE: C:\TEXACO\SOUTH\FIG2
FIGURE NO. 2
LEA COUNTY, NEW MEXICO
TEXACO EXPLORATION & PRODUCTION INC.
EUNICE #1 (SOUTH) GAS PLANT SURFACE IMPOUNDMENT LOCATION
HIGHLANDER ENVIRONMENTAL CORP. MIDLAND, TEXAS



N-4
SOIL SAMPLE LOCATION

SEDIMENT SAMPLE LOCATION

GRAPHIC SCALE
10 5 0 25
(IN FEET)
1"=25'

DATE: 5/16/00
DRN. BY: JDA
FILE: C:\TEXACO\797\SOUTH\1798\FIG.3

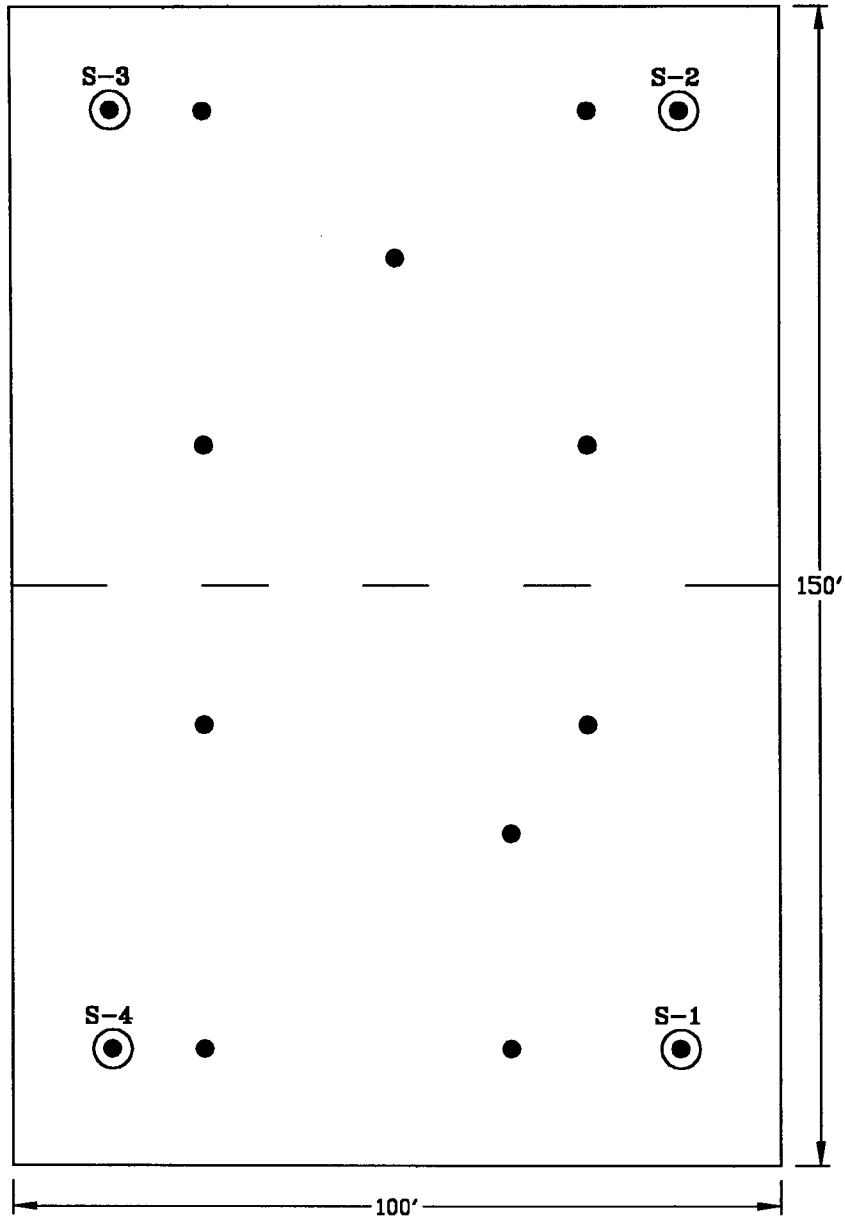
FIGURE NO. 3

LEA COUNTY, NEW MEXICO

TEXACO EXPLORATION & PRODUCTION INC.

EUNICE #1 (SOUTH) GAS PLANT
NORTH POND SAMPLE LOCATIONS

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS



LEGEND

N-1 SOIL BORING LOCATION

SEDIMENT SAMPLE LOCATION

GRAPHIC SCALE

10 5 0 25

(IN FEET)
1"=25'

FIGURE NO. 4

LEA COUNTY, NEW MEXICO

TEXACO EXPLORATION & PRODUCTION INC.

EUNICE #1 (SOUTH) GAS PLANT
SOUTH POND SAMPLE LOCATIONS

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

DATE: 5/16/00
DWN. BY: JDA
FILE: C:\TEXACO\787\SOUTH\1788\FIG.4

APPENDIX A

Laboratory Analysis

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Mark Larson
Highlander Environmental Services
1910 N. Big Spring St.
Midland, TX 79705

Report Date: 12/13/99

Project Number: 786
Project Name: Texaco South Eunice Gas Plant
Project Location: Eunice Plant

Order ID Number: 99120906

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
136975	S. Pond N/2	Soil	12/7/99	10:35	12/9/99
136976	S. Pond S/2	Soil	12/7/99	10:45	12/9/99
136977	S. Pond	Soil	12/7/99	11:00	12/9/99
136978	N. Pond N/2	Soil	12/7/99	11:45	12/9/99
136979	N. Pond S/2	Soil	12/7/99	11:55	12/9/99
136980	N. Pond	Soil	12/7/99	12:00	12/9/99

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 3 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
HIGHLANDER ENVIRONMENTAL SERVICES
Attention: Mark Larson
1910 N. Big Spring St.
Midland, TX 79705

December 13, 1999
Receiving Date: 12/09/99
Sample Type: Liquid
Project No: 786
Project Location: NA
Client Name: Texaco

Prep Date: 12/09/99
Analysis Date: 12/10/99
Sampling Date: 12/07/99
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Eunice #1 (South) Plant

TA#	FIELD CODE	DRO (mg/kg)
T136975	S. Pond, N/2	203
T136976	S. Pond, S/2	128
T136977	S. Pond	111
T136978	N. Pond, N/2	1,270
T136979	N. Pond, S/2	1,170
T136980	N. Pond	2,240
REPORTING LIMIT		50
METHOD BLANK		<50
ICV		272
LCS		233
LCSD		263
MS		233
MSD		243
CCV (1)		260
CCV (2)		238
AVG. CV		257
RPD		4
% Extraction Accuracy		93
% Instrument Accuracy		103

METHODS: EPA SW 846-3550B, 8015B Modified.
CHEMIST: MF
DRO SPIKE: 250 mg/kg DRO.
DRO CV: 250 mg/L DRO.

Director, Dr. Blair Leftwich

12-13-99
DATE

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
HIGHLANDER ENVIRONMENTAL SERVICES
Attention: Mark Larson
1910 N. Big Spring St.
Midland, TX 79705

December 14, 1999
Receiving Date: 12/09/99
Sample Type: Liquid
Project No: 786
Project Location: NA
Client Name: Texaco

Prep Date: 12/13/99
Analysis Date: 12/13/99
Sampling Date: 12/07/99
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Eunice #1 (South) Plant

TA#	FIELD CODE	TOTAL Cr (mg/kg)
T136975	S. Pond, N/2	16
T136976	S. Pond, S/2	23
T136977	S. Pond	12
T136978	N. Pond, N/2	22
T136979	N. Pond, S/2	20
T136980	N. Pond	23
REPORTING LIMIT		5.0
METHOD BLANK		<5.0
ICV		1.0
LCS		219
LCSD		198
CCV		1.0
RPD		2
% Extraction Accuracy		92
% Instrument Accuracy		102

METHODS: EPA SW 846-3051A, 6010B.
CHEMIST: RR
TOTAL Cr SPIKE: 200 mg/kg TOTAL Cr.
TOTAL Cr CV: 1.0 mg/L TOTAL Cr.

Director, Dr. Blair Leftwich

12-14-99
DATE

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
HIGHLANDER ENVIRONMENTAL CORP.
Attention: Mark Larson
1910 N. Big Spring St.
Midland, TX 79705

December 13, 1999
Receiving Date: 12/09/99
Sample Type: Liquid
Project No: 786
Project Location: NA
Client Name: Texaco

Prep Date: 12/09/99
Analysis Date: 12/09/99
Sampling Date: 12/07/99
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Eunice #1 (South) Plant

TA#	FIELD CODE	GRO (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	M,P,O XYLENE (mg/kg)	TOTAL BTEX (mg/kg)
T136975	S. Pond, N/2	888	1.05	8.95	10.1	23.3	43.4
T136976	S. Pond, S/2	1,610	3.76	8.58	27.4	<0.200	39.7
T136977	S. Pond	1,320	3.29	7.94	21.5	<0.200	32.7
T136978	N. Pond, N/2	344	0.502	0.868	0.793	2.98	5.14
T136979	N. Pond, S/2	1,950	3.06	26.6	27.2	64.0	120
T136980	N. Pond	1,310	2.11	6.39	15.5	<0.200	24.0
QC		1.0	0.098	0.097	0.095	0.279	
REPORTING LIMIT		<0.100	<0.050	<0.050	<0.050	<0.050	
RPD		13	2	2	1	2	
% Extraction Accuracy		100	98	96	94	92	
% Instrument Accuracy		100	98	97	95	93	

METHODS: EPA SW 846-8021B, 5035, 8015B Modified.
CHEMIST: RC
BTEX SPIKE: 5 mg/kg BTEX.
GRO SPIKE: 1.00 mg/kg GRO.
BTEX QC: 0.100 mg/L BTEX.
GRO CV: 1.00 mg/L GRO.

Director, Dr. Blair Leftwich

12-13-99
Date

Analytical Results Report

Sample Number: 136975
Description: S. Pond N/2

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		19,000	1	E 300.0	12/10/99	12/10/99	JS	PB03428	QC04434	0.5

Sample Number: 136976
Description: S. Pond S/2

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		20,000	1	E 300.0	12/10/99	12/10/99	JS	PB03428	QC04434	0.5

Sample Number: 136977
Description: S. Pond

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		20,000	1	E 300.0	12/10/99	12/10/99	JS	PB03428	QC04434	0.5

Sample Number: 136978
Description: N. Pond N/2

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		120,000	1	E 300.0	12/10/99	12/10/99	JS	PB03428	QC04434	0.5

Sample Number: 136979
Description: N. Pond S/2

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		49,000	1	E 300.0	12/10/99	12/10/99	JS	PB03428	QC04434	0.5

Sample Number: 136980
Description: N. Pond

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		80000	1	E 300.0	12/10/99	12/10/99	JS	PB03428	QC04434	0.5

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
CL (mg/Kg)		8.54	0.5	12/10/99	PB03428	QC04434

Quality Control Report
Matrix Spike and Matrix Duplicate Spike

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/Kg)	80000	1	62500	148665.4(	110		80 - 120	0 - 20	QC04434
MSD	CL (mg/Kg)	80000	1	62500	146849.1(	107	3	80 - 120	0 - 20	QC04434

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	13.66	109	80 - 120	12/10/99	QC04434
CCV (1	CL (mg/L)		12.5	13.39	107	80 - 120	12/10/99	QC04434

99120906

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4559 Fax (915) 682-3946

PAGE: 1 OF: 1

CLIENT NAME: Texaco | SITE MANAGER: M. Larson

PROJECT NO.: 786 | PROJECT NAME: Eunice #1 (South) Plant

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8020/602	MTBE 8020/602	TPH 8015M (DRO + GRO)	PAH 8270	RCRA Metals Ag As Ba Cd (Cr) Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
136975	12/1/99	10:35	S			S. Pond, N/2	2				✓		✓	✓	✓	✓	✓									✓			
76		10:45	S			S. Pond, S/2	2				✓		✓	✓	✓	✓	✓									✓			
77		11:00	S			S. Pond	2				✓		✓	✓	✓	✓	✓									✓			
78		11:45	S			N. Pond, N/2	2				✓		✓	✓	✓	✓	✓									✓			
79		11:55	S			N. Pond, S/2	2				✓		✓	✓	✓	✓	✓									✓			
80	↓	12:00	S			N. Pond	2				✓		✓	✓	✓	✓	✓									✓			

RELINQUISHED BY: (Signature) Date: 12/8/99 Time: 14:00
RECEIVED BY: (Signature) Helen Shelton Date: 12/08/99 Time: 14:00

RELINQUISHED BY: (Signature) Helen Shelton Date: 12/8/99 Time: 5:30 PM
RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Inspectorate, Inc
ADDRESS: 6701 Aberdeen
CITY: Lubbock STATE: Tx ZIP:
CONTACT: Nell PHONE: (800) 378-1296
RECEIVED BY: (Signature) Vicki Wrather
DATE: 12-9-99 TIME: 9:30

SAMPLED BY: (Print & Sign) MJ Larson Date: 12/1/99 Time: 12:00

SAMPLE SHIPPED BY: (Circle)
FEDEX (BUS) UPS AIRBILL #:
HAND DELIVERED OTHER:

HIGHLANDER CONTACT PERSON: Mark Larson

Results by: MON. Dec. 13, 1999
RUSH Charges Authorized: Yes (No)

SAMPLE CONDITION WHEN RECEIVED: Hidro75W.XLS (714)

MATRIX: W-Water A-Air SD-Solid S-Soil (SL)-Sludge O-Other

REMARKS: MS 12/13

12/14

Please Fill out all copies - Laboratory retains yellow copy - Return original copy to Highlander Environmental Corp. - Project Manager retains pink copy - Accounting receives Gold copy.

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Mark Larson
Highlander Environmental Services
1910 N. Big Spring St.
Midland, TX 79705

Report Date: 1/21/00

Project Number: 786
Project Name: Texaco South Eunice Gas Plant
Project Location: Eunice Plant

Order ID Number: A00010811

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
138390	S-1, 2.5-3.5'	Soil	1/6/00	9:30	1/8/00
138391	S-1, 10-11'	Soil	1/6/00	9:40	1/8/00
138392	S-1, 20-21'	Soil	1/6/00	9:50	1/8/00
138393	S-1, 30-31'	Soil	1/6/00	10:00	1/8/00
138394	S-1, 35-36'	Soil	1/6/00	10:10	1/8/00
138395	S-2, 2-3'	Soil	1/6/00	10:55	1/8/00
138396	S-2, 10-11'	Soil	1/6/00	11:00	1/8/00
138397	S-2, 20-21'	Soil	1/6/00	11:05	1/8/00
138398	S-2, 35-36'	Soil	1/6/00	11:15	1/8/00
138399	S-3, 2-3'	Soil	1/6/00	13:20	1/8/00
138400	S-3, 10-11'	Soil	1/6/00	13:25	1/8/00
138401	S-3, 20-21'	Soil	1/6/00	13:30	1/8/00
138402	S-3, 30-31'	Soil	1/6/00	13:40	1/8/00
138403	S-3, 35-36'	Soil	1/6/00	13:45	1/8/00
138404	S-4, 3-4'	Soil	1/6/00	14:10	1/8/00
138405	S-4, 10-11'	Soil	1/6/00	14:15	1/8/00
138406	S-4, 20-21'	Soil	1/6/00	14:20	1/8/00
138407	S-4, 30-31'	Soil	1/6/00	14:30	1/8/00
138408	S-4, 35-36'	Soil	1/6/00	14:35	1/8/00
138409	N-1, 3-4'	Soil	1/6/00	16:00	1/8/00
138410	N-1, 10-11'	Soil	1/6/00	15:20	1/8/00
138411	N-1, 20-21'	Soil	1/6/00	15:30	1/8/00
138412	N-1, 30-31'	Soil	1/6/00	15:35	1/8/00
138413	N-1, 40-41'	Soil	1/6/00	15:40	1/8/00
138414	N-2, 3-4'	Soil	1/7/00	8:10	1/8/00

138415	N-2, 10-11'	Soil	1/7/00	8:15	1/8/00
138416	N-2, 20-21'	Soil	1/7/00	8:20	1/8/00
138417	N-2, 30-31'	Soil	1/7/00	8:30	1/8/00
138418	N-2, 40-41'	Soil	1/7/00	8:40	1/8/00
138419	N-2, 46-47'	Soil	1/7/00	8:45	1/8/00
138420	N-3, 3-4'	Soil	1/7/00	9:18	1/8/00
138421	N-3, 10-11'	Soil	1/7/00	9:22	1/8/00
138422	N-3, 20-21'	Soil	1/7/00	9:25	1/8/00
138423	N-3, 30-31'	Soil	1/7/00	9:30	1/8/00
138424	N-3, 40-41'	Soil	1/7/00	9:40	1/8/00
138425	N-3, 46-47'	Soil	1/7/00	9:50	1/8/00
138426	N-4, 3-4'	Soil	1/7/00	10:15	1/8/00
138427	N-4, 10-11'	Soil	1/7/00	10:20	1/8/00
138428	N-4, 20-21'	Soil	1/7/00	10:25	1/8/00
138429	N-4, 30-31'	Soil	1/7/00	10:30	1/8/00
138430	N-4, 40-41'	Soil	1/7/00	10:40	1/8/00

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 23 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Results Report

Sample Number: 138390
Description: S-1, 2.5-3.5'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		3800	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00445	0.5

Sample Number: 138391
Description: S-1, 10-11'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		3800	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00445	0.5

Sample Number: 138392
Description: S-1, 20-21'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		1100	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00445	0.5

Sample Number: 138393
Description: S-1, 30-31'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		0.11	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		0.161	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		0.272	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.2	50	0.1	104	72 - 128	RC	PB00221	QC00293
4-BFB	5.8	50	0.1	116	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)										
CL		670	1	E 300.0	1/10/00	1/11/00	JS	PB00248	QC00322	0.5
TPH DRO (mg/Kg)										
DRO		<50	1	Mod. 8015B	1/10/00	1/13/00	MA	PB00228	QC00351	50
TPH GRO (mg/Kg)										
GRO		61.3	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138394
Description: S-1, 35-36'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Ethylbenzene	<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene	<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX	<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.17	50	0.1	103	72 - 128	RC	PB00221	QC00293
4-BFB	5.29	50	0.1	106	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)									
CL	640	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00320	0.5
TPH DRO (mg/Kg)									
DRO	<50	1	Mod. 8015B	1/10/00	1/10/00	MA	PB00228	QC00298	50
TPH GRO (mg/Kg)									
GRO	<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138395
Description: S-2, 2-3'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.21	50	0.1	104	72 - 128	RC	PB00221	QC00293
4-BFB	5.37	50	0.1	107	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)									
CL	540	1	E 300.0	1/10/00	1/11/00	JS	PB00248	QC00322	0.5
TPH DRO (mg/Kg)									
DRO	<50	1	Mod. 8015B	1/10/00	1/10/00	MA	PB00228	QC00298	50
TPH GRO (mg/Kg)									
GRO	<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138396
Description: S-2, 10-11'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		830	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00445	0.5

Sample Number: 138397
Description: S-2, 20-21'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		210	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00445	0.5

Sample Number: 138398
Description: S-2, 35-36'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.22	50	0.1	104	72 - 128	RC	PB00221	QC00293
4-BFB	5.25	50	0.1	105	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)									
CL	96	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00320	0.5
TPH DRO (mg/Kg)									
DRO	<50	1	Mod. 8015B	1/10/00	1/10/00	MA	PB00228	QC00298	50
TPH GRO (mg/Kg)									
GRO	<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138399
Description: S-3, 2-3'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		2400	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00445	0.5

Sample Number: 138400
Description: S-3, 10-11'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.15	50	0.1	103	72 - 128	RC	PB00221	QC00293
4-BFB	5.07	50	0.1	101	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)									
CL	430	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00320	0.5
TPH DRO (mg/Kg)									
DRO	<50	1	Mod. 8015B	1/10/00	1/10/00	MA	PB00228	QC00298	50
TPH GRO (mg/Kg)									
GRO	<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138401
Description: S-3, 20-21'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		92	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00445	0.5

Sample Number: 138402
Description: S-3, 30-31'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		86	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00445	0.5

Sample Number: 138403
Description: S-3, 35-36'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	4.89	50	0.1	98	72 - 128	RC	PB00221	QC00293
4-BFB	4.83	50	0.1	97	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)										
CL		73	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00320	0.5
TPH DRO (mg/Kg)										
DRO		<50	1	Mod. 8015B	1/10/00	1/10/00	MA	PB00228	QC00298	50
TPH GRO (mg/Kg)										
GRO		<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138404
Description: S-4, 3-4'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.1	100	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.1	100	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.1	100	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		0.159	100	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		0.159	100	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	10.3	100	0.1	103	72 - 128	RC	PB00221	QC00293
4-BFB	10.6	100	0.1	106	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)										
CL		2000	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00320	0.5

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
TPH DRO (mg/Kg)										
DRO		<50	1	Mod. 8015B	1/10/00	1/11/00	MA	PB00231	QC00303	50
TPH GRO (mg/Kg)										
GRO		96.6	100	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138405
Description: S-4, 10-11'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		490	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00445	0.5

Sample Number: 138406
Description: S-4, 20-21'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		59	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00446	0.5

Sample Number: 138407
Description: S-4, 30-31'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		78	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00446	0.5

Sample Number: 138408
Description: S-4, 35-36'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.2	50	0.1	104	72 - 128	RC	PB00221	QC00293
4-BFB	5.23	50	0.1	105	72 - 128	RC	PB00221	QC00293

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		89	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00320	0.5
TPH DRO (mg/Kg)										
DRO		<50	1	Mod. 8015B	1/10/00	1/11/00	MA	PB00231	QC00303	50
TPH GRO (mg/Kg)										
GRO		<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138409
Description: N-1, 3-4'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		1500	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00446	0.5

Sample Number: 138410
Description: N-1, 10-11'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		9900	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00446	0.5

Sample Number: 138411
Description: N-1, 20-21'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.18	50	0.1	104	72 - 128	RC	PB00221	QC00293
4-BFB	5.1	50	0.1	102	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)										
CL		17,000	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00320	0.5
TPH DRO (mg/Kg)										
DRO		<50	1	Mod. 8015B	1/10/00	1/11/00	MA	PB00231	QC00303	50
TPH GRO (mg/Kg)										
GRO		<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138412
Description: N-1, 30-31'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		6400	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00446	0.5

Sample Number: 138413
Description: N-1, 40-41'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #	
TFT	5.41	50	0.1	108	72 - 128	RC	PB00221	QC00293	
4-BFB	5.32	50	0.1	106	72 - 128	RC	PB00221	QC00293	
Ion Chromatography (IC) (mg/Kg)									
CL	7400	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00320	0.5
TPH DRO (mg/Kg)									
DRO	<50	1	Mod. 8015B	1/10/00	1/11/00	MA	PB00231	QC00303	50
TPH GRO (mg/Kg)									
GRO	<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138414
Description: N-2, 3-4'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		170,000	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00446	0.5

Sample Number: 138415
Description: N-2, 10-11'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #	
TFT	5.33	50	0.1	107	72 - 128	RC	PB00221	QC00293	
4-BFB	5.35	50	0.1	107	72 - 128	RC	PB00221	QC00293	
Ion Chromatography (IC) (mg/Kg)									
CL	31,000	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00321	0.5
TPH DRO (mg/Kg)									
DRO	<50	1	Mod. 8015B	1/10/00	1/11/00	MA	PB00231	QC00303	50
TPH GRO (mg/Kg)									
GRO	<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138416
Description: N-2, 20-21'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		12,000	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00446	0.5

Sample Number: 138417
Description: N-2, 30-31'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		7100	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00446	0.5

Sample Number: 138418
Description: N-2, 40-41'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	4.88	50	0.1	98	72 - 128	RC	PB00221	QC00293
4-BFB	4.91	50	0.1	98	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)										
CL		2800	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00321	0.5
TPH DRO (mg/Kg)										
DRO		<50	1	Mod. 8015B	1/10/00	1/11/00	MA	PB00231	QC00303	50
TPH GRO (mg/Kg)										
GRO		<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138419
Description: N-2, 46-47'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		1700	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00446	0.5

Sample Number: 138420
Description: N-3, 3-4'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.58	50	0.1	112	72 - 128	RC	PB00221	QC00293
4-BFB	5.48	50	0.1	110	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)										
CL		5000	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00321	0.5

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
TPH DRO (mg/Kg)										
DRO		<50	1	Mod. 8015B	1/10/00	1/11/00	MA	PB00231	QC00303	50
TPH GRO (mg/Kg)										
GRO		<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138421
Description: N-3, 10-11'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		9200	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00446	0.5

Sample Number: 138422
Description: N-3, 20-21'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		9300	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00447	0.5

Sample Number: 138423
Description: N-3, 30-31'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		3100	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00447	0.5

Sample Number: 138424
Description: N-3, 40-41'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		<0.05	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.24	50	0.1	105	72 - 128	RC	PB00221	QC00293
4-BFB	5.28	50	0.1	106	72 - 128	RC	PB00221	QC00293

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		1500	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00321	0.5
TPH DRO (mg/Kg)										
DRO		<50	1	Mod. 8015B	1/10/00	1/11/00	MA	PB00231	QC00303	50
TPH GRO (mg/Kg)										
GRO		<5.00	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138425
Description: N-3, 46-47'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		2300	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00447	0.5

Sample Number: 138426
Description: N-4, 3-4'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
Benzene		0.23	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Toluene		0.538	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Ethylbenzene		1.1	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
M,P,O-Xylene		2.31	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001
Total BTEX		4.18	50	S 8021B	1/10/00	1/10/00	RC	PB00221	QC00293	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.28	50	0.1	106	72 - 128	RC	PB00221	QC00293
4-BFB	5.59	50	0.1	112	72 - 128	RC	PB00221	QC00293

Ion Chromatography (IC) (mg/Kg)										
CL		7100	1	E 300.0	1/10/00	1/11/00	JS	PB00248	QC00322	0.5
TPH DRO (mg/Kg)										
DRO		<50	1	Mod. 8015B	1/10/00	1/11/00	MA	PB00231	QC00303	50
TPH GRO (mg/Kg)										
GRO		50.6	50	8015B	1/10/00	1/10/00	RC	PB00226	QC00294	0.1

Sample Number: 138427
Description: N-4, 10-11'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		13,000	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00447	0.5

Sample Number: 138428
Description: N-4, 20-21'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		12,000	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00447	0.5

Sample Number: 138429
Description: N-4, 30-31'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Ion Chromatography (IC) (mg/Kg)										
CL		8400	1	E 300.0	1/17/00	1/19/00	JS	PB00338	QC00447	0.5

Sample Number: 138430
Description: N-4, 40-41'

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
BTEX (mg/Kg)										
MTBE		<0.05	50	S 8021B	1/13/00	1/13/00	RC	PB00271	QC00355	0.001
Benzene		<0.05	50	S 8021B	1/13/00	1/13/00	RC	PB00271	QC00355	0.001
Toluene		<0.05	50	S 8021B	1/13/00	1/13/00	RC	PB00271	QC00355	0.001
Ethylbenzene		<0.05	50	S 8021B	1/13/00	1/13/00	RC	PB00271	QC00355	0.001
M,P,O-Xylene		<0.05	50	S 8021B	1/13/00	1/13/00	RC	PB00271	QC00355	0.001
Total BTEX		<0.05	50	S 8021B	1/13/00	1/13/00	RC	PB00271	QC00355	0.001

Surrogate (mg/Kg)	Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #
TFT	5.06	50	0.1	101	72 - 128	RC	PB00271	QC00355
4-BFB	4.97	50	0.1	99	72 - 128	RC	PB00271	QC00355

Ion Chromatography (IC) (mg/Kg)									
CL	7400	1	E 300.0	1/10/00	1/10/00	JS	PB00247	QC00321	0.5
TPH DRO (mg/Kg)									
DRO	<50	1	Mod. 8015B	1/10/00	1/11/00	MA	PB00231	QC00303	50
TPH GRO (mg/Kg)									
GRO	<5.00	5	8015B	1/13/00	1/13/00	RC	PB00272	QC00356	0.1

Quality Control Report
Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Benzene (mg/Kg)		<0.05	0.05	1/10/00	PB00221	QC00293
Toluene (mg/Kg)		<0.05	0.05	1/10/00	PB00221	QC00293
Ethylbenzene (mg/Kg)		<0.05	0.05	1/10/00	PB00221	QC00293
M,P,O-Xylene (mg/Kg)		<0.05	0.05	1/10/00	PB00221	QC00293
Total BTEX (mg/Kg)		<0.05	0.05	1/10/00	PB00221	QC00293

Surrogate	Result	Spike Amount	% Rec.	% Rec. Limit	QC Batch #
TFT (mg/Kg)	5.37	0.1	107	72 - 128	QC00293
4-BFB (mg/Kg)	5.13	0.1	103	72 - 128	QC00293

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
MTBE (mg/Kg)		<0.05	0.05	1/13/00	PB00271	QC00355
Benzene (mg/Kg)		<0.05	0.05	1/13/00	PB00271	QC00355
Toluene (mg/Kg)		<0.05	0.05	1/13/00	PB00271	QC00355
Ethylbenzene (mg/Kg)		<0.05	0.05	1/13/00	PB00271	QC00355
M,P,O-Xylene (mg/Kg)		<0.05	0.05	1/13/00	PB00271	QC00355
Total BTEX (mg/Kg)		<0.05	0.05	1/13/00	PB00271	QC00355

Surrogate	Result	Spike Amount	% Rec.	% Rec. Limit	QC Batch #
TFT (mg/Kg)	5.28	0.1	106	72 - 128	QC00355
4-BFB (mg/Kg)	5.1	0.1	102	72 - 128	QC00355

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
CL (mg/Kg)		<0.5	0.5	1/10/00	PB00247	QC00320
CL (mg/Kg)		<0.5	0.5	1/10/00	PB00247	QC00321
CL (mg/Kg)		29.38	0.5	1/11/00	PB00248	QC00322
CL (mg/Kg)		9.46	0.5	1/19/00	PB00338	QC00445
CL (mg/Kg)		9.46	0.5	1/19/00	PB00338	QC00446
CL (mg/Kg)		9.47	0.5	1/19/00	PB00338	QC00447

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
DRO (mg/Kg)		<50	50	1/10/00	PB00228	QC00298
DRO (mg/Kg)		<50	50	1/11/00	PB00231	QC00303
DRO (mg/Kg)		<50	50	1/13/00	PB00228	QC00351

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
GRO (mg/Kg)		<5	0.1	1/10/00	PB00226	QC00294

GRO (mg/Kg)	<5	0.1	1/13/00	PB00272	QC00356

Quality Control Report
Matrix Spike and Matrix Duplicate Spike

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	Benzene (mg/Kg)	<0.05	50	0.1	5.25	105		80 - 120	0 - 20	QC00293
MS	Toluene (mg/Kg)	<0.05	50	0.1	5.28	106		80 - 120	0 - 20	QC00293
MS	Ethylbenzene (mg/Kg)	<0.05	50	0.1	5.31	106		80 - 120	0 - 20	QC00293
MS	M,P,O-Xylene (mg/Kg)	<0.05	50	0.3	15.7	105		80 - 120	0 - 20	QC00293

Standard	Surrogate	Result	Dil.	Spike Amount	Analyst	% Rec.	% Rec. Limit	Prep Batch #	QC Batch #
MS	TFT (mg/Kg)	4.93	50	0.1	RC	99	72 - 128	PB00221	QC00293
MS	4-BFB (mg/Kg)	5.43	50	0.1	RC	109	72 - 128	PB00221	QC00293

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MSD	Benzene (mg/Kg)	<0.05	50	0.1	5.19	104	0	80 - 120	0 - 20	QC00293
MSD	Toluene (mg/Kg)	<0.05	50	0.1	5.23	105	0	80 - 120	0 - 20	QC00293
MSD	Ethylbenzene (mg/Kg)	<0.05	50	0.1	5.33	106	0	80 - 120	0 - 20	QC00293
MSD	M,P,O-Xylene (mg/Kg)	<0.05	50	0.3	15.6	104	0	80 - 120	0 - 20	QC00293

Standard	Surrogate	Result	Dil.	Spike Amount	Analyst	% Rec.	% Rec. Limit	Prep Batch #	QC Batch #
MSD	TFT (mg/Kg)	5.27	50	0.1	RC	106	72 - 128	PB00221	QC00293
MSD	4-BFB (mg/Kg)	5.73	50	0.1	RC	115	72 - 128	PB00221	QC00293

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	DRO (mg/Kg)	<50	1	250	232	93		70 - 130	0 - 20	QC00298
MSD	DRO (mg/Kg)	<50	1	250	243	97	5	70 - 130	0 - 20	QC00298

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	DRO (mg/Kg)	<50	1	250	209	84		70 - 130	0 - 20	QC00303
MSD	DRO (mg/Kg)	<50	1	250	192	77	8	70 - 130	0 - 20	QC00303

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/Kg)	89	1	125	207.02	94		80 - 120	0 - 20	QC00320
MSD	CL (mg/Kg)	89	1	125	206.77	94	0	80 - 120	0 - 20	QC00320

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/Kg)	1500	1	625	2070.67	91		80 - 120	0 - 20	QC00321

MSD	CL (mg/Kg)	1500	1	625	2069.93	91	0	80 - 120	0 - 20	QC00321

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/Kg)	540	1	625	1132.57	95		80 - 120	0 - 20	QC00322
MSD	CL (mg/Kg)	540	1	625	1137.46	96	1	80 - 120	0 - 20	QC00322

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	MTBE (mg/Kg)	<0.05	50	0.1	0.695	70		80 - 120	0 - 20	QC00355
MS	Benzene (mg/Kg)	<0.05	50	0.1	0.757	76		80 - 120	0 - 20	QC00355
MS	Toluene (mg/Kg)	<0.05	50	0.1	0.654	65		80 - 120	0 - 20	QC00355
MS	Ethylbenzene (mg/Kg)	<0.05	50	0.1	0.615	62		80 - 120	0 - 20	QC00355
MS	M,P,O-Xylene (mg/Kg)	<0.05	50	0.3	1.7	113		80 - 120	0 - 20	QC00355

Standard	Surrogate	Result	Dil.	Spike Amount	Analyst	% Rec.	% Rec. Limit	Prep Batch #	QC Batch #
MS	TFT (mg/Kg)	5.21	50	0.1	RC	104	72 - 128	PB00271	QC00355
MS	4-BFB (mg/Kg)	5.19	50	0.1	RC	104	72 - 128	PB00271	QC00355

MSD	MTBE (mg/Kg)	<0.05	50	0.1	0.944	94	1	80 - 120	0 - 20	QC00355
MSD	Benzene (mg/Kg)	<0.05	50	0.1	1.03	103	1	80 - 120	0 - 20	QC00355
MSD	Toluene (mg/Kg)	<0.05	50	0.1	0.903	90	2	80 - 120	0 - 20	QC00355
MSD	Ethylbenzene (mg/Kg)	<0.05	50	0.1	0.858	86	2	80 - 120	0 - 20	QC00355
MSD	M,P,O-Xylene (mg/Kg)	<0.05	50	0.3	2.35	156	2	80 - 120	0 - 20	QC00355

Standard	Surrogate	Result	Dil.	Spike Amount	Analyst	% Rec.	% Rec. Limit	Prep Batch #	QC Batch #
MSD	TFT (mg/Kg)	5.23	50	0.1	RC	105	72 - 128	PB00271	QC00355
MSD	4-BFB (mg/Kg)	5.26	50	0.1	RC	105	72 - 128	PB00271	QC00355

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/Kg)	3400	1	1250	4564.02	93		80 - 120	0 - 20	QC00445
MSD	CL (mg/Kg)	3400	1	1250	4584.90	95	2	80 - 120	0 - 20	QC00445

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/Kg)	1700	1	1250	2858.20	93		80 - 120	0 - 20	QC00446
MSD	CL (mg/Kg)	1700	1	1250	2848.53	92	1	80 - 120	0 - 20	QC00446

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	CL (mg/Kg)	8400	1	2500	10459.95	82		80 - 120	0 - 20	QC00447

MSD	CL (mg/Kg)	8400	1	2500	10689.87	92	11	80 - 120	0 - 20	QC00447

Quality Control Report
Lab Control Spikes and Duplicate Spike

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/Kg)	<0.05	50	0.1	5.03	100		80 - 120	0 - 20	QC00293
LCS	Benzene (mg/Kg)	<0.05	50	0.1	4.12	82		80 - 120	0 - 20	QC00293
LCS	Toluene (mg/Kg)	<0.05	50	0.1	4.06	81		80 - 120	0 - 20	QC00293
LCS	Ethylbenzene (mg/Kg)	<0.05	50	0.1	4.12	82		80 - 120	0 - 20	QC00293
LCS	M,P,O-Xylene (mg/Kg)	<0.05	50	0.3	12	80		80 - 120	0 - 20	QC00293

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/Kg)	50	0.1	3.95	80	72 - 128	QC00293
LCS	4-BFB (mg/Kg)	50	0.1	3.98	80	72 - 128	QC00293

LCSD	MTBE (mg/Kg)	<0.05	50	0.1	4.79	96	5	80 - 120	0 - 20	QC00293
LCSD	Benzene (mg/Kg)	<0.05	50	0.1	4.23	85	3	80 - 120	0 - 20	QC00293
LCSD	Toluene (mg/Kg)	<0.05	50	0.1	4.2	84	3	80 - 120	0 - 20	QC00293
LCSD	Ethylbenzene (mg/Kg)	<0.05	50	0.1	4.26	85	3	80 - 120	0 - 20	QC00293
LCSD	M,P,O-Xylene (mg/Kg)	<0.05	50	0.3	12.4	83	3	80 - 120	0 - 20	QC00293

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/Kg)	50	0.1	4.36	87	72 - 128	QC00293
LCSD	4-BFB (mg/Kg)	50	0.1	4.4	88	72 - 128	QC00293

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/Kg)	<0.05	50	0.1	5.06	101		80 - 120	0 - 20	QC00355
LCS	Benzene (mg/Kg)	<0.05	50	0.1	4.9	98		80 - 120	0 - 20	QC00355
LCS	Toluene (mg/Kg)	<0.05	50	0.1	4.86	97		80 - 120	0 - 20	QC00355
LCS	Ethylbenzene (mg/Kg)	<0.05	50	0.1	4.8	96		80 - 120	0 - 20	QC00355
LCS	M,P,O-Xylene (mg/Kg)	<0.05	50	0.3	14.1	94		80 - 120	0 - 20	QC00355

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCS	TFT (mg/Kg)	50	0.1	5.1	102	72 - 128	QC00355
LCS	4-BFB (mg/Kg)	50	0.1	5.21	104	72 - 128	QC00355

LCSD	MTBE (mg/Kg)	<0.05	50	0.1	5.1	102	1	80 - 120	0 - 20	QC00355
LCSD	Benzene (mg/Kg)	<0.05	50	0.1	4.97	99	1	80 - 120	0 - 20	QC00355
LCSD	Toluene (mg/Kg)	<0.05	50	0.1	4.94	99	2	80 - 120	0 - 20	QC00355
LCSD	Ethylbenzene (mg/Kg)	<0.05	50	0.1	4.88	98	2	80 - 120	0 - 20	QC00355
LCSD	M,P,O-Xylene (mg/Kg)	<0.05	50	0.3	14.4	96	2	80 - 120	0 - 20	QC00355

Standard	Surrogate	Dil.	Spike Amount	Result	% Rec.	% Rec. Limit	QC Batch #
LCSD	TFT (mg/Kg)	50	0.1	5.09	102	72 - 128	QC00355
LCSD	4-BFB (mg/Kg)	50	0.1	5.16	103	72 - 128	QC00355

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	DRO (mg/Kg)	<50	1	250	221	88		70 - 130	0 - 20	QC00298
LCSD	DRO (mg/Kg)	<50	1	250	188	75	16	70 - 130	0 - 20	QC00298

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	DRO (mg/Kg)	<50	1	250	179	72		70 - 130	0 - 20	QC00303
LCSD	DRO (mg/Kg)	<50	1	250	181	72	1	70 - 130	0 - 20	QC00303

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	DRO (mg/Kg)	<50	1	250	176	70		70 - 130	0 - 20	QC00351
LCSD	DRO (mg/Kg)	<50	1	250	133	53	28	70 - 130	0 - 20	QC00351

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	GRO (mg/Kg)	<5	1	1	0.907	91		80 - 120	0 - 20	QC00294
LCSD	GRO (mg/Kg)	<5	1	1	0.919	92	1	80 - 120	0 - 20	QC00294

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	GRO (mg/Kg)	<5	50	1	< 5	93		80 - 120	0 - 20	QC00356
LCSD	GRO (mg/Kg)	<5	50	1	< 5	102	9	80 - 120	0 - 20	QC00356

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Benzene (mg/Kg)		0.1	0.092	92	80 - 120	1/10/00	QC00293
ICV	Toluene (mg/Kg)		0.1	0.089	89	80 - 120	1/10/00	QC00293
ICV	Ethylbenzene (mg/Kg)		0.1	0.096	96	80 - 120	1/10/00	QC00293
ICV	M,P,O-Xylene (mg/Kg)		0.3	0.27	90	80 - 120	1/10/00	QC00293
CCV (1	Benzene (mg/Kg)		0.1	0.098	98	80 - 120	1/10/00	QC00293
CCV (1	Toluene (mg/Kg)		0.1	0.094	94	80 - 120	1/10/00	QC00293
CCV (1	Ethylbenzene (mg/Kg)		0.1	0.094	94	80 - 120	1/10/00	QC00293
CCV (1	M,P,O-Xylene (mg/Kg)		0.3	0.298	99	80 - 120	1/10/00	QC00293
CCV (2	Benzene (mg/Kg)		0.1	0.093	93	80 - 120	1/10/00	QC00293
CCV (2	Toluene (mg/Kg)		0.1	0.09	90	80 - 120	1/10/00	QC00293
CCV (2	Ethylbenzene (mg/Kg)		0.1	0.09	90	80 - 120	1/10/00	QC00293
CCV (2	M,P,O-Xylene (mg/Kg)		0.3	0.268	89	80 - 120	1/10/00	QC00293

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	MTBE (mg/Kg)		0.1	0.097	101	80 - 120	1/13/00	QC00355
ICV	Benzene (mg/Kg)		0.1	0.096	95	80 - 120	1/13/00	QC00355
ICV	Toluene (mg/Kg)		0.1	0.096	93	80 - 120	1/13/00	QC00355
ICV	Ethylbenzene (mg/Kg)		0.1	0.094	94	80 - 120	1/13/00	QC00355
ICV	M,P,O-Xylene (mg/Kg)		0.3	0.276	89	80 - 120	1/13/00	QC00355
CCV (1	MTBE (mg/Kg)		0.1	0.104	104	80 - 120	1/13/00	QC00355
CCV (1	Benzene (mg/Kg)		0.1	0.098	98	80 - 120	1/13/00	QC00355
CCV (1	Toluene (mg/Kg)		0.1	0.098	98	80 - 120	1/13/00	QC00355
CCV (1	Ethylbenzene (mg/Kg)		0.1	0.097	97	80 - 120	1/13/00	QC00355
CCV (1	M,P,O-Xylene (mg/Kg)		0.3	0.286	95	80 - 120	1/13/00	QC00355
CCV (2	MTBE (mg/Kg)		0.1	0.103	103	80 - 120	1/13/00	QC00355
CCV (2	Benzene (mg/Kg)		0.1	0.102	102	80 - 120	1/13/00	QC00355
CCV (2	Toluene (mg/Kg)		0.1	0.101	101	80 - 120	1/13/00	QC00355
CCV (2	Ethylbenzene (mg/Kg)		0.1	0.099	99	80 - 120	1/13/00	QC00355
CCV (2	M,P,O-Xylene (mg/Kg)		0.3	0.294	98	80 - 120	1/13/00	QC00355

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/Kg)		12.5	11.54	92	80 - 120	1/10/00	QC00320
CCV (1	CL (mg/Kg)		12.5	11.61	93	80 - 120	1/10/00	QC00320

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	11.61	93	80 - 120	1/10/00	QC00321
CCV (1	CL (mg/L)		12.5	11.68	93	80 - 120	1/10/00	QC00321

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	11.74	94	80 - 120	1/11/00	QC00322
CCV (1	CL (mg/L)		12.5	11.66	93	80 - 120	1/11/00	QC00322

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	11.53	92	80 - 120	1/19/00	QC00445
CCV (1	CL (mg/L)		12.5	11.74	94	80 - 120	1/19/00	QC00445

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	11.74	94	80 - 120	1/19/00	QC00446
CCV (1	CL (mg/L)		12.5	11.71	94	80 - 120	1/19/00	QC00446

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	CL (mg/L)		12.5	11.71	94	80 - 120	1/19/00	QC00447
CCV (1	CL (mg/L)		12.5	11.81	94	80 - 120	1/19/00	QC00447

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	DRO (mg/Kg)		250	218	87	70 - 130	1/10/00	QC00298
CCV (1	DRO (mg/Kg)		250	246	98	70 - 130	1/10/00	QC00298
CCV (2	DRO (mg/Kg)		250	248	99	70 - 130	1/10/00	QC00298

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	DRO (mg/Kg)		250	292	117	70 - 130	1/11/00	QC00303
CCV (1	DRO (mg/Kg)		250	210	84	70 - 130	1/11/00	QC00303
CCV (2	DRO (mg/Kg)		250	215	86	70 - 130	1/11/00	QC00303

Quality Control Report
Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	DRO (mg/Kg)		250	245	98	70 - 130	1/13/00	QC00351
CCV (1	DRO (mg/Kg)		250	244	98	70 - 130	1/13/00	QC00351

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	GRO (mg/Kg)		1	1.17	117	80 - 120	1/10/00	QC00294
CCV (1	GRO (mg/Kg)		1	0.971	97	80 - 120	1/10/00	QC00294
CCV (2	GRO (mg/Kg)		1	1.04	104	80 - 120	1/10/00	QC00294

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	GRO (mg/Kg)		1	1.05	105	80 - 120	1/13/00	QC00356
CCV (1	GRO (mg/Kg)		1	1	100	80 - 120	1/13/00	QC00356

138390-430

A0001081

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4559 Fax (915) 682-3946

PAGE: 1 OF: 5

CLIENT NAME: Texaco SITE MANAGER: M. Larson

PROJECT NO.: 786 PROJECT NAME: Eunice #1 (South) Plant

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8020/602	MTBE 8020/602	TPH 418.1 (8015 MOD) TX1005	PAH 8270 (DRO + GRO)	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 608/608	BOD, TSS, pH, TDS, (Chloride)	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
138390	1/6/2000	9:30	S	✓		S-1, 2.5-3.5'	1				✓				Hold	Hold										X			
91		9:40	S	✓		S-1, 10-11'	1				✓				Hold											X			
92		9:50	S	✓		S-1, 20-21'	1				✓				Hold											X			
93		10:00	S	✓		S-1, 30-31'	1				✓				✓											✓			
94		10:10	S	✓		S-1, 35-36'	1				✓				✓											✓			
95		10:55	S	✓		S-2, 2-3'	1				✓				✓											✓			
96		11:00	S	✓		S-2, 10-11'	1				✓				Hold											X			
97		11:05	S	✓		S-2, 20-21	1				✓				Hold											X			
		HL 11:15	S	✓		~~S-2, 30-31~~ HL NOT Rec'd	1				✓				Hold											X			
98	↓	11:15	S	✓		S-2, 35-36	1				✓				✓											✓			

RELINQUISHED BY: (Signature) Mark Larson Date: 1/7/2000 Time: 16:00

RECEIVED BY: (Signature) Helen Shelton Date: 1/7/2000 Time: 16:00

RELINQUISHED BY: (Signature) Helen Shelton Date: 1/7/00 Time: 6:00 PM

RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Trace Analysis

ADDRESS: 6701 Aberdeen

CITY: Lubbock STATE: TX ZIP: 79424

CONTACT: Nell PHONE: 800-378-1296

RECEIVED BY: (Signature)

DATE: 01/08/00 TIME: 10:00am

SAMPLE CONDITION WHEN RECEIVED:

MATRIX: W-Water A-Air SD-Solid (S-Soil) SL-Sludge O-Other

REMARKS: Call w/analyses before holding time expires for held samples. add chlorides to all other samp

SAMPLED BY: (Print & Sign) M Larson Date: 1/7/2000 Time: 10:40

SAMPLE SHIPPED BY: (Circle) FEDEX (BUS) UPS HAND DELIVERED AIRBILL #: OTHER:

HIGHLANDER CONTACT PERSON: Mark Larson

Results by: 1/17/2000

RUSH Charges Authorized: Yes No per Mark 1-17-00

Please Fill out all copies – Laboratory retains yellow copy – Return original copy to Highlander Environmental Corp. – Project Manager retains pink copy – Accounting receives Gold copy.

9 Aamblers - HC Bro 4°C

1/21

1/17

1/14

A0001081l

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4559 Fax (915) 682-3946

CLIENT NAME: Texaco | SITE MANAGER: M. Larson

PROJECT NO.: 786 | PROJECT NAME: Eunice #1 (South) Plant

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8020/602	MTBE 8020/602	TPH 418.1 / 8015 Mod. TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 608/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
138399	1/4/2000	13:20	S	✓		S-3, 2-3'	1				✓				Hold											X			
400		13:25	S	✓		S-3, 10-11'	1				✓		✓		✓											✓			
01		13:30	S	✓		S-3, 20-21'	1				✓				Hold											X			
02		13:40	S	✓		S-3, 30-31'	1				✓				Hold											X			
03		13:45	S	✓		S-3, 35-36'	1				✓		✓		✓											✓			
04		14:10	S	✓		S-4, 3-4'	1				✓		✓		✓											✓			
05		14:15	S	✓		S-4, 10-11'	1				✓					Hold										X			
06		14:20	S	✓		S-4, 20-21'	1				✓					Hold										X			
07		14:30	S	✓		S-4, 30-31'	1				✓					Hold										X			
08	↓	14:35	S	✓		S-4 35-36'	1				✓		✓		✓											✓			

RELINQUISHED BY: (Signature) [signature] Date: 1/7/2000 Time: 12:00
RECEIVED BY: (Signature) Helen Shelton Date: 1/7/00 Time: 16:00
SAMPLED BY: (Print & Sign) M. Larson Date: 1/4/2000 Time: 15:40

RELINQUISHED BY: (Signature) Helen Shelton Date: 1/7/00 Time: 6:00 PM
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS UPS HAND DELIVERED AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
HIGHLANDER CONTACT PERSON: Mark Larson
Results by: 1/17/2000
RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace Analysis
ADDRESS: 6701 Aberdeen Ave
CITY: Lubbock STATE: Tx ZIP: 79424
CONTACT: Nell PHONE: 800-378-1296
RECEIVED BY: (Signature) [signature]
DATE: 01/08/00 TIME: 10:00 AM

SAMPLE CONDITION WHEN RECEIVED:

MATRIX: W-Water A-Air SD-Solid (S)-Soil SL-Sludge O-Other

REMARKS: Call w/ analysis before holding times expire for held samples

Please Fill out all copies – Laboratory retains yellow copy – Return original copy to Highlander Enviromental Corp. – Project Manager retains pink copy – Accounting receives Gold copy.

MS in Mandalin ... BUS 4°C

A080108/1

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4559 Fax (915) 682-3946

PAGE: 3 OF: 5

CLIENT NAME: Texaco SITE MANAGER: M. Larson

PROJECT NO.: 786 PROJECT NAME: Eunice #1 (South) Plant

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8020/602	MTBE 8020/602	TPH 418.1 (8015 MOD) TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	ECI	GC-MS Vol. 8240/8260/624	GC-MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
138409	1/4/2000	16:00	S	✓		N-1, 3-4'	1				✓				Hold											X			
10		15:20	S	✓		N-1, 10-11'	1				✓				Hold											X			
11		15:30	S	✓		N-1, 20-21'	1				✓		✓		✓						✓				✓	X			
12		15:35	S	✓		N-1, 30-31'	1				✓				Hold											X			
13	↓	15:40	S	✓		N-1, 40-41'	1				✓		✓		✓						✓				✓	X			
14	1/7/2000	8:10	S	✓		N-2, 3-4'	1				✓				Hold											X			
15		8:15	S	✓		N-2, 10-11'	1				✓		✓		✓						✓				✓	X			
16		8:20	S	✓		N-2, 20-21'	1				✓				Hold											X			
17		8:30	S	✓		N-2, 30-31'	1				✓				Hold											X			
18	↓	8:40	S	✓		N-2, 40-41'	1				✓		✓		✓						✓				✓	X			

RELINQUISHED BY: (Signature) Mark Larson Date: 1/7/2000 Time: 16:00

RECEIVED BY: (Signature) Helen Shelton Date: 1/7/2000 Time: 16:00

SAMPLED BY: (Print & Sign) Mark Larson Date: 1/7/2000 Time: 10:45

RELINQUISHED BY: (Signature) Helen Shelton Date: 1/7/00 Time: 6:00PM

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS UPS HAND DELIVERED AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Inaco Analysis
ADDRESS: 6701 Aberdeen #9
CITY: Lubbock STATE: Tx ZIP: 79424
CONTACT: Kelli PHONE: 800 378 1296

RECEIVED BY: (Signature)
DATE: 01/08/00 TIME: 10:00AM

HIGHLANDER CONTACT PERSON: Mark Larson

Results by: 1/17/2000

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

MATRIX: W-Water A-Air SD-Solid (S-Soil) SL-Sludge O-Other

REMARKS: Call w/ analysis before holding time expires on hold samples

Please Fill out all copies - Laboratory retains yellow copy - Return original copy to Highlander Environmental Corp. - Project Manager retains pink copy - Accounting receives Gold copy.

MS 10 samples - HS BOD 4°C

A0001081l

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4559 Fax (915) 682-3946

CLIENT NAME: Texaco | SITE MANAGER: M. Larson

PROJECT NO.: 786 | PROJECT NAME: Eunice #1 (South) Gas Plant

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	ANALYSIS REQUEST (Circle or Specify Method No.): BTEX 8020/602	MTBE 8020/602	TPH 418.1	8015 MOD. TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
138419	1/4/2000	8:45	S	✓		MLS-2, 46-47'	1				✓		Hold														X			
20		9:18	S	✓		MLS-3, 3-4'	1				✓		✓		✓												X			
21		9:22	S	✓		MLS-3, 10-11'	1				✓		Hold														X			
22		9:25	S	✓		MLS-3, 20-21'	1				✓		Hold														X			
23		9:30	S	✓		MLS-3, 30-31'	1				✓		Hold														X			
24		9:40	S	✓		MLS-3, 40-41'	1				✓		✓		✓												X			
25		9:50	S	✓		MLS-3, 46-47'	1				✓		Hold														X			
26		10:15	S	✓		MLS-4, 3-4'	1				✓		✓		✓												X			
27		10:20	S	✓		MLS-4, 10-11'	1				✓		Hold														X			
28	↓	10:25	S	✓		MLS-4, 20-21'	1				✓		Hold														X			

RELINQUISHED BY: (Signature) Tank Jam — Date: 1/7/2000 Time: 16:00
RECEIVED BY: (Signature) Helen Shelton — Date: 1/7/00 Time: 16:00

RELINQUISHED BY: (Signature) Helen Shelton — Date: 1/7/00 Time: 6:00 PM
RECEIVED BY: (Signature) — Date: Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

SAMPLED BY: (Print & Sign) M. Larson — Date: 1/6/2000 Time: 10:45

SAMPLE SHIPPED BY: (Circle) FEDEX BUS UPS HAND DELIVERED — AIRBILL #: — OTHER:

RECEIVING LABORATORY: Trace Analysis
ADDRESS: 6701 Aberdeen #9
CITY: Lubbock STATE: TX ZIP: 79424
CONTACT: Nall PHONE: 800 378 1296

RECEIVED BY: (Signature) — DATE: 01/08/00 TIME: 10:00 am

HIGHLANDER CONTACT PERSON: Mark Larson

Results by: 1/17/2000

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

MATRIX: W-Water A-Air SD-Solid (S)-Soil SL-Sludge O-Other

REMARKS: Call w/ analysis before holding time expires on hold samples

Please Fill out all copies – Laboratory retains yellow copy – Return original copy to Highlander Enviromental Corp. – Project Manager retains pink copy – Accounting receives Gold copy.

IN sample. IC Bar 4

A0001081

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4559 Fax (915) 682-3946

PAGE: 5 OF: 5

CLIENT NAME: Texaco
SITE MANAGER: M. Larson
PROJECT NO.: 786
PROJECT NAME: Eunice #1 (South) Plant

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
138429	1/1/2000	10:30	S	✓		S-4, 30-31'	1				✓	
30	"	10:40	S	✓		S-4, 40-41'	1				✓	

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8020/602 · MTBE 8020/602 · TPH 418.1 · 8015 MOD. TX1005 · PAH 8270 · RCRA Metals Ag As Ba Cd Cr Pb Hg Se · TCLP Metals Ag As Ba Cd Cr Pd Hg Se · TCLP Volatiles · TCLP Semi Volatiles · ECI · GC/MS Vol. 8240/8260/624 · GC/MS Semi. Vol. 8270/625 · PCB's 8080/608 · Pest. 608/608 · BOD, TSS, pH, TDS, Chloride · Gamma Spec. · Alpha Beta (Air) · PLM (Asbestos)

RELINQUISHED BY: (Signature) Mark Larson	Date: 1/1/2000 Time: 16:00	RECEIVED BY: (Signature) Helen Shelton	Date: 1/7/00 Time: 16:00
RELINQUISHED BY: (Signature) Helen Shelton	Date: 1/7/00 Time: 6:00 PM	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RECEIVING LABORATORY: Trace Analysis		RECEIVED BY: (Signature)	
ADDRESS: 6701 Aberdeen #9		DATE: 01/08/00	TIME: 10:00AM
CITY: Lubbock STATE: TX ZIP: 79424			
CONTACT: Hall PHONE: 800 378 1296			

SAMPLED BY: (Print & Sign) Mark Larson — Date: 1/1/2000 Time: 19:45

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS AIRBILL #:
HAND DELIVERED UPS OTHER:

HIGHLANDER CONTACT PERSON: Mark Larson

Results by: 1/17/2000

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

MATRIX: W-Water A-Air SD-Solid (S-Soil) SL-Sludge O-Other

REMARKS: Call w/ analysis before holds times expires on hold Sample

Please Fill out all copies – Laboratory retains yellow copy – Return original copy to Highlander Enviromental Corp. – Project Manager retains pink copy – Accounting receives Gold copy.

BTEX 4°C

APPENDIX B

Boring Logs

Project No: 1786

Log: N-1

Project: Eunice #1 (South) Gas Plant

Client: Texaco Exploration and Production Inc.

Page: 1 of 1

Location: North Pond - Souheast Corner

Geologist: MJL

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration		Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery	ppm 200 400	Well Data	
0		Ground Surface	0						
		Fill	-3				14.8		
5		***Sand*** 7.5YR 7/3, pink, very fine grained quartz sand, interbedded with caliche, moderately saft, dry							
10							9.7		
		5YR 6/3, reddish yellow below 10 feet							
15									
20							34.5		
25									
30							18		
35									
40							22.8		
45			-47						
		End of Borehole							
50									

Drill Method: Rotary (Air)

Drill Date: 6-Jan-2000

Hole Size: 6"

Highlander Environmental
1910 N. Big Spring
Midland, Texas 79705
(915) 682-4559

Datum: Ground Surface

Checked by: MJL

Project No: 1786

Log: N-2

Project: Eunice #1 (South) Gas Plant

Client: Texaco Exploration and Production Inc.

Page: 1 of 1

Location: North Pond - Souheast Corner

Geologist: MJL

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration		Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery	ppm 200 400	Well Data	
0		Ground Surface	0						
		Fill	-3				5.8		
5		***Silty Sand*** 7.5YR 6/6, reddish yellow, very fine grained quartz sand, hydrocarbon odor, moist, interbedded with caliche below 5', moderately hard, dry							
10							9.7		
		7.5YR 7/4, pink							
15									
20							1.3		
25									
30							1.9		
35									
40							2.6		
45			-47				3.2		
		End of Borehole							
50									

Drill Method: Rotary (Air)

Drill Date: 7-Jan-2000

Hole Size: 6"

Highlander Environmental
1910 N. Big Spring
Midland, Texas 79705
(915) 682-4559

Datum: Ground Surface

Checked by: MJL

Project No: 1786

Log: N-3

Project: Eunice #1 (South) Gas Plant

Client: Texaco Exploration and Production Inc.

Page: 1 of 1

Location: North Pond - Southwest Corner

Geologist: MJL

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration (ppm)	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery	50 100 150		
0		Ground Surface	0						
		Fill	-3				88.9		
5		***Silty Sand*** 7.5YR 7/6 to 7/4, reddish yellow to pink, caliche below 5', interbedded with sand, dry, modeerately compacted, hard							
10							15.9		
15			-18						
20							24.9		
25									
30		***Sand*** 7.5 YR 7/6, reddish yellow, very fine grained quartz sand, loose, dry					12		
35									
40							20.4		
45			-47				7.4		
50		End of Borehole							

Drill Method: Rotary (Air)

Drill Date: 7-Jan-2000

Hole Size: 6"

Highlander Environmental
1910 N. Big Spring
Midland, Texas
(915) 682-4559

Datum: Ground Surface

Checked by: MJL

Project No: 1786

Log: N-4

Project: Eunice #1 (South) Gas Plant

Client: Texaco Exploration and Production Inc.

Page: 1 of 1

Location: North Pond - Southwest Corner

Geologist: MJL

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm (50, 100, 150)	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery			
0		Ground Surface	0						
		Fill	-3				193		
5		***Silty Sand*** 7.5YR 3/1, very dark gray, very fine grained quartz sand, some caliche, hydrocarbon odor and stain, dry							
10		7.5YR5/1, gray below 5'					15		
15		7.5YR 6/4, light brown below 15'							
20		7.5YR 6/6, reddish yellow below 25'					24.9		
25									
30							12		
35									
40							20.4		
45			-47				7.4		
		End of Borehole							
50									

Drill Method: Rotary (Air)

Drill Date: 7-Jan-2000

Hole Size: 6"

Highlander Environmental
1910 N. Big Spring
Midland, Texas
(915) 682-4559

Datum: Ground Surface

Checked by: MJL

Project No: 1786

Log: S-1

Project: Eunice #1 (South) Gas Plant

Client: Texaco Exploration and Production Inc.

Page: 1 of 1

Location: South Pond - Southeast Corner

Geologist: MJL

Depth	Description	Elev.	Number	Type	Recovery	Volatile Organic Concentration (ppm)	Well Data	Lab Analysis
0	Ground Surface	0						
	Fill Note: HDPE Liner at 2.5 Feet	-2.5				10.1		
5	***Caliche*** 10YR7/3, very pale brown, moderately hard, dry, sandy							
10						3.2		
		-14						
15	***Sand*** 5YR 6/4, reddish yellow, very fine grained quartz sand, dry, soft							
20						19.2		
25	Mosit at 35'							
30						27.3		
		-35						
35	End of Borehole					3.9		
40								

Drill Method: Rotary (Air)

Drill Date: 6-Jan-2000

Hole Size: 6"

Highlander Environmental
1910 N. Big Spring
Midland, Texas 79705
(915) 682-4559

Datum: Ground Surface

Checked by: MJL MJL

Project No: 1786

Log: S-2

Project: Eunice #1 (South) Gas Plant

Client: Texaco Exploration and Production Inc.

Page: 1 of 1

Location: South Pond - Northeast Corner

Geologist: MJL

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm 200 400	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery			
0		Ground Surface	0						
		Fill Note: HDPE Liner at 2.0'	-2				43.6		
5		***Caliche*** 10YR7/3, very pale brown, moderately soft, dry, sandy							
10			-11				31.9		
15		***Sand*** 5YR 6/4 to 4/6, reddish yellow to yellowish red, very fine grained quartz sand, dry, loose							
20							31.3		
25									
30		Mosit at 35'							
35			-35				13		
		End of Borehole							
40									

Drill Method: Rotary (Air)

Drill Date: 6-Jan-2000

Hole Size: 6"

Highlander Environmental
1910 N. Big Spring
Midland, Texas 79705
(915) 682-4559

Datum: Ground Surface

Checked by: MJL

Project No: 1786

Log: S-3

Project: Eunice #1 (South) Gas Plant

Client: Texaco Exploration and Production Inc.

Page: 1 of 1

Location: South Pond - Northwest Corner

Geologist: MJL

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration		
Depth	Symbol	Description	Elev.	Number	Type	Recovery	ppm 200 400	Well Data	Lab Analysis
0		Ground Surface	0						
		Fill Note: HDPE Liner at 2.0'	-2						
		Caliche 10YR7/3, very pale brown, moderately soft, dry, sandy					20		
5									
			-10				25		
10		***Sand*** 5YR 6/4, reddish yellow, very fine grained quartz sand, dry, loose							
15									
20							21.5		
25		Mosit at 30'							
30							26		
			-35				27		
35		End of Borehole							
40									

Drill Method: Rotary (Air)

Drill Date: 6-Jan-2000

Hole Size: 6"

Highlander Environmental
1910 N. Big Spring
Midland, Texas 79705
(915) 682-4559

Datum: Ground Surface

Checked by: MJL

Project No: 1786

Log: S-4

Project: Eunice #1 (South) Gas Plant

Client: Texaco Exploration and Production Inc.

Page: 1 of 1

Location: South Pond - Southwest Corner

Geologist: MJL

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration		
Depth	Symbol	Description	Elev.	Number	Type	Recovery	ppm 200 400	Well Data	Lab Analysis
0		Ground Surface	0						
		Fill Note: HDPE Liner at 3.0'	-3				20		
5		***Caliche*** 10YR7/3, very pale brown, moderately hard, dry, sandy							
10							25		
15			-15						
		Sand 5YR 6/4, reddish yellow, very fine grained quartz sand, dry, loose					21.5		
20									
25									
30							26		
35			-35				27		
		End of Borehole							
40									

Drill Method: Rotary (Air)

Drill Date: 6-Jan-2000

Hole Size: 6"

Highlander Environmental
1910 N. Big Spring
Midland, Texas 79705
(915) 682-4559

Datum: Ground Surface

Checked by: MJL

APPENDIX C

OVM Calibration Log

"Rite in the Rain®"

All-Weather HORIZONTAL LINE NOTEBOOK

No. 391

HIGHLANDER ENVIRONMENTAL
1910 N. Big Spring
Midland, Texas 79705
(915) 682-4559

CALIBRATION LOG
Thermal Environmental Instruments
Model 580B Organic Vapor Meter
S/N 580U39693-261

Date:

October 18, 1999 16:20 hrs.
Span Gas: Isobutylene (75ppm)
Reading: 75.6 ppm
By: Mark Rasor

January 6, 2000 09:30 hrs
Span Gas: Isobutylene (75ppm)
Reading: 76.9 ppm
By: Mark Rasor

January 7, 2000 9:00 hrs.
Span Gas: Isobutylene (75ppm)
Reading: 75.6 ppm
By: Mark Rasor

January 31, 2000 15:40 hrs
Span Gas: Isobutylene (75ppm)
Reading: 76.3 ppm
By: Mark Rasor

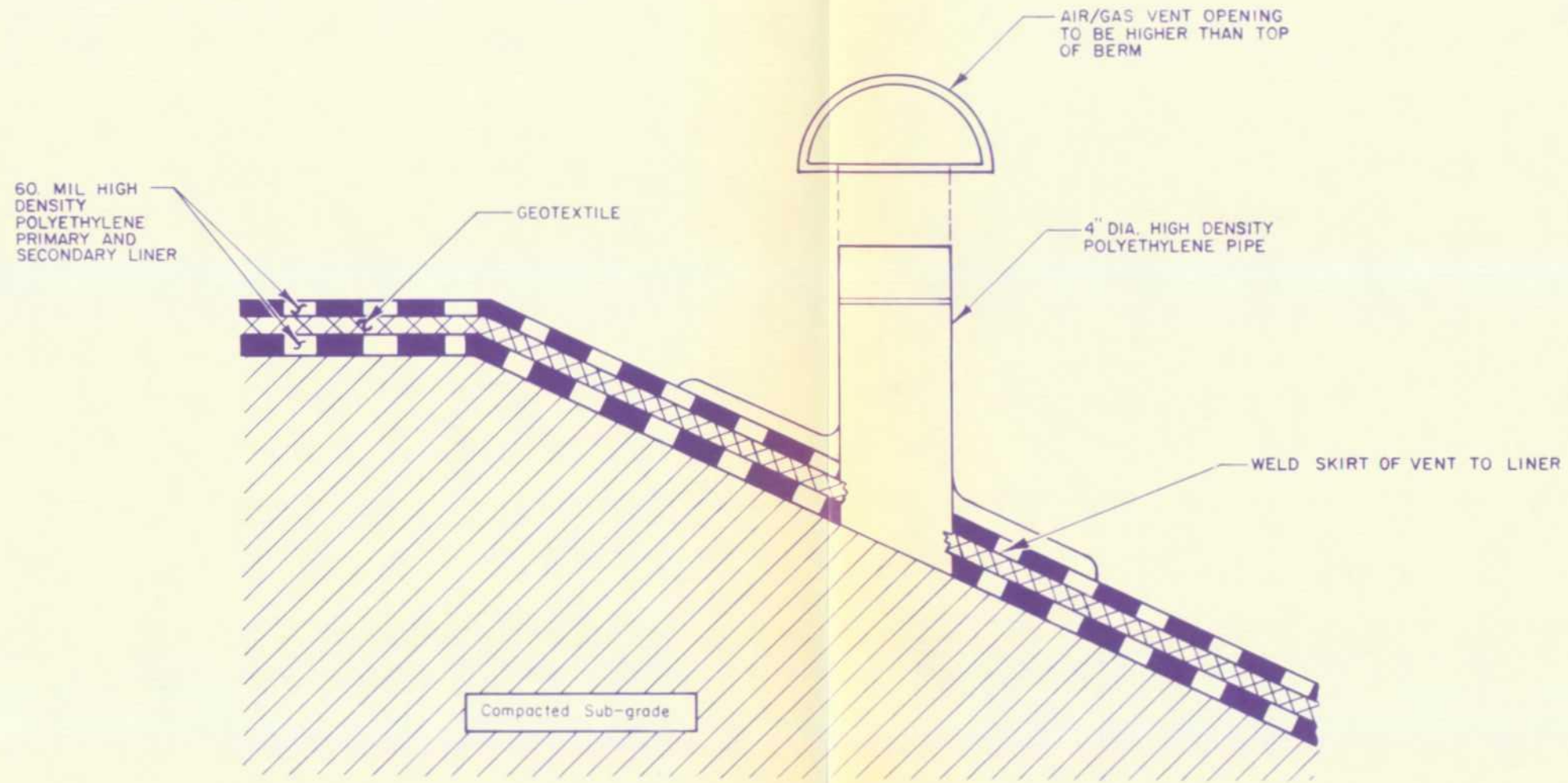
2-14-00 4:15 pm.
Span Gas - Isobutylene (75 ppm)
Reading - 74 ppm
by - Ike Tavarez

4-10-00 09:28
Span Gas: Isobutylene (75
Reading: 75.4 ppm
By: Mark Rasor

4-13-00 17:03
Span Gas: Isobutylene (75 p
Reading 76.2 ppm
By: Mark Rasor

5/3/00 11:32
Span Gas; Isobutylene (75 p
Reading: 76.7 ppm
By: Mark Rasor + Mike

7/11/00 8:25
Span Gas: Isobutylene (75ppm)
Reading 76.6 ppm
By: Mark Rasor



RECEIVED

APR 21 1989

OIL CONSERVATION DIV.
SANTA FE

NOTES

MK	DATE	REVISIONS
A	3/89	ISSUE FOR APPROVAL
B	3/89	ISSUE FOR BIDS

NUMBER	REFERENCE DRAWINGS

NOTICE

		DATE
DWN	RAC	3-89
CH.KD		
PIPE		
INSTR		
ELECT		
STR		
APP		
CODE		

SUB-GRADE VENT DETAIL
WASTE WATER DISPOSAL
POND No. 4

EUNICE #1
GAS PLANT

TEXACO USA
NATURAL GAS PLANTS DIVISION

DWG. NO. B-0010-81-5003

REV. B

302948

FORM 58-60707-1078

FORM 58 6070?-1078

MK	DATE	REVISIONS
A	3/89	ISSUE FOR APPROVAL
B	3/89	ISSUE FOR BIDS

NOTES

NUMBER

REFERENCE DRAWINGS

NOTICE

TEXACO USA

DWN	R CRIST	3/89	SIZE
CHKD			
PPE			
INSTR			
ELECT			
STR			
APP			
CODE			

SUMP DETAIL
WASTE WATER DISPOSAL
POND No.4

TEXACO USA
NATURAL GAS PLANTS DIVISION

EUNICE #1
GAS PLANT

DWG NO. B-0010-81-S004

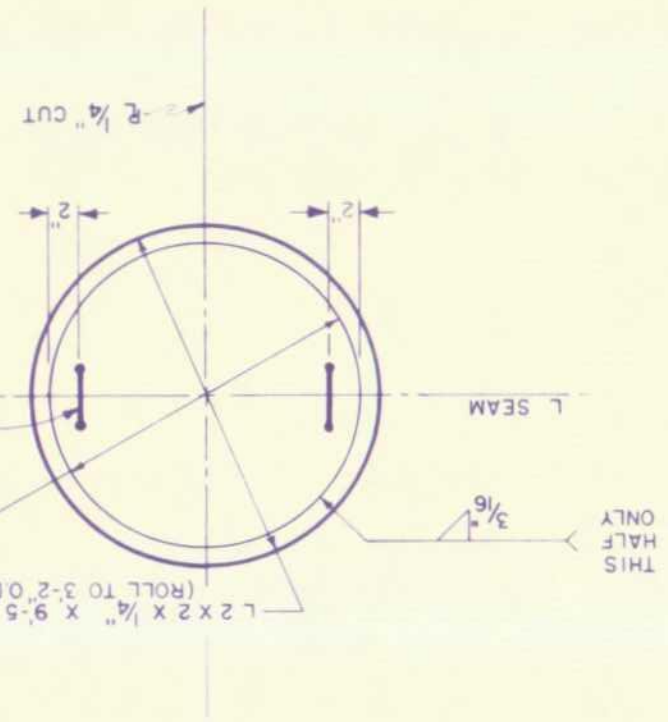
REV B

B-0010-81-S004

RECEIVED
APR 21 1989
OIL CONSERVATION DIV.
SANTA FE

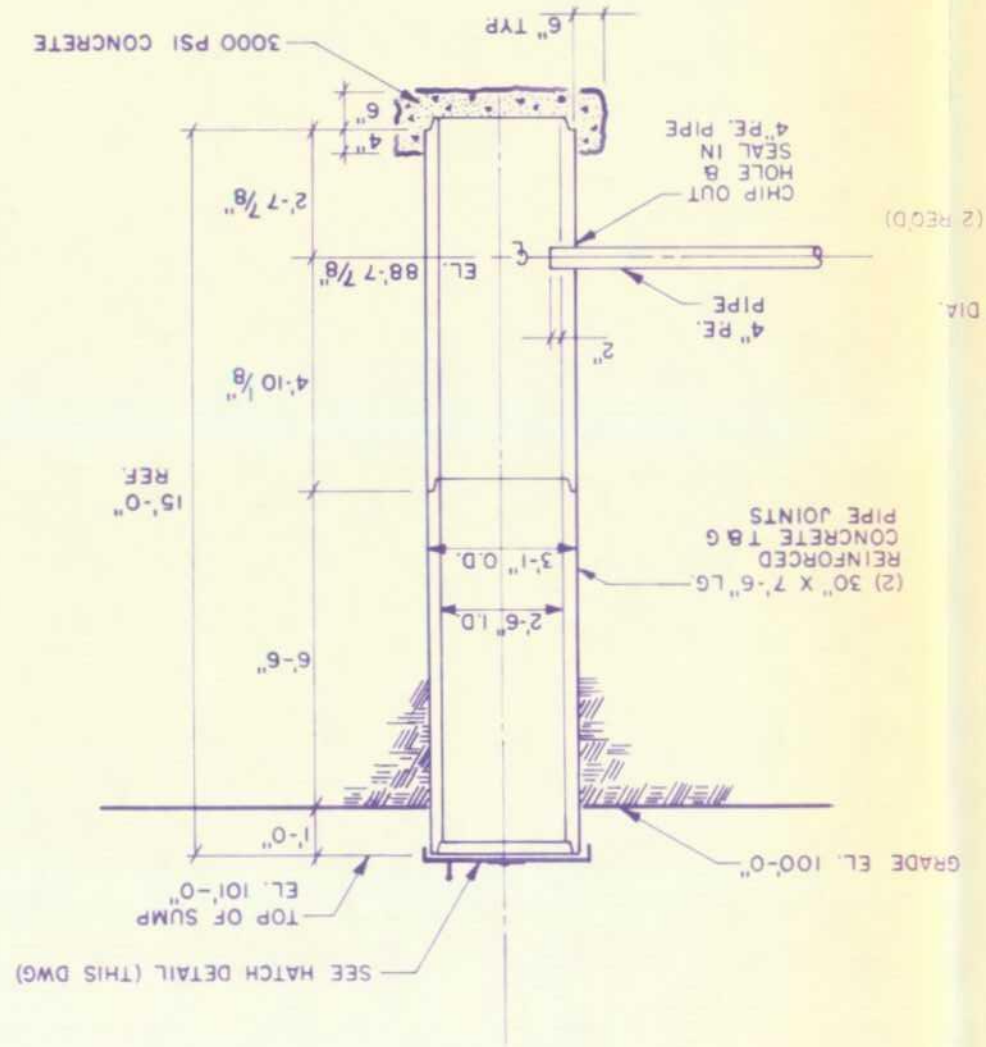
SUMP HATCH DETAIL

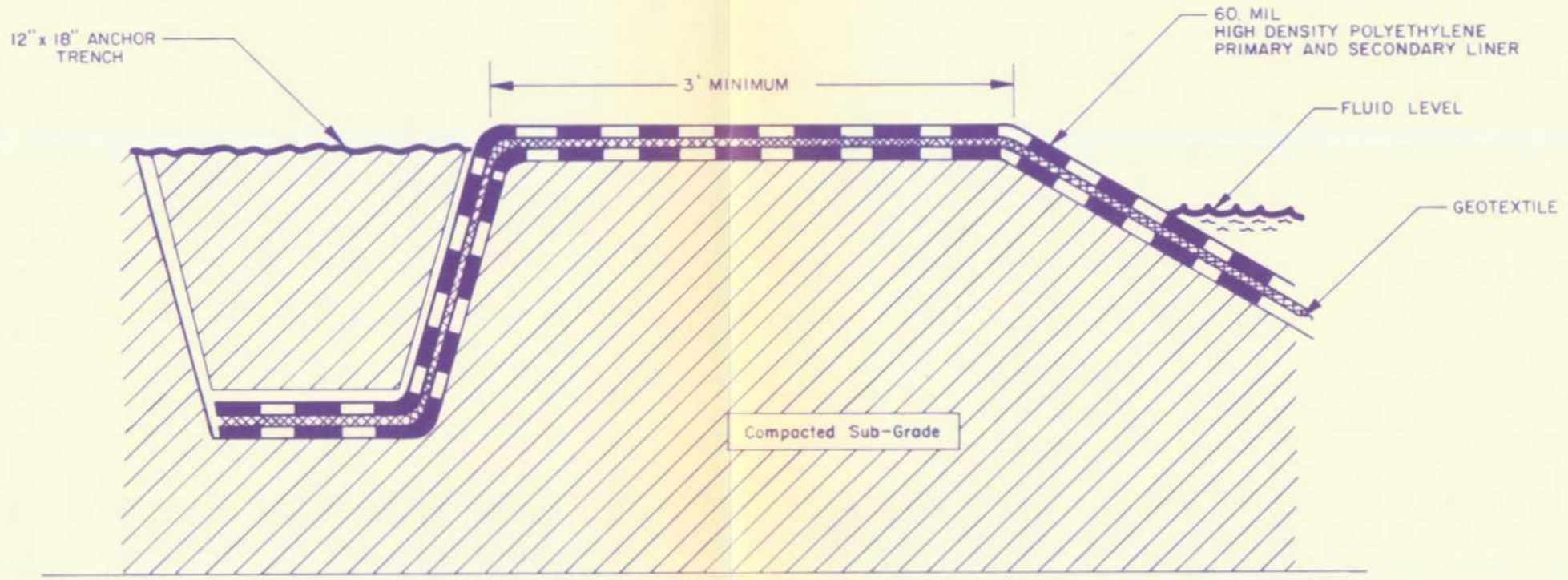
(1) REQ'D SCALE: NONE



SUMP DETAIL

SCALE: 1" = 4'





NOTES

MK	DATE	REVISIONS
A	3/89	ISSUE FOR APPROVAL
B	3/89	ISSUE FOR BIDS

NUMBER	REFERENCE DRAWINGS

		DATE
DWN	RAC	3/89
CH.K'D		
PIPE		
INSTR		
ELECT		
ST.R		
APP.		
CODE		

ANCHOR TRENCH DETAIL

TEXACO USA
NATURAL GAS PLANTS DIVISION

EUNICE #1 GAS PLANT

DWG NO. B-0010-81-5005

REV. B

302948

FORM 58-60707-1078

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RATTLESNAKE CANYON QUADRANGLE
NEW MEXICO—LEA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

5348 IV (OIL CENTER) 1:62 500

5348 I NW (EUNICE)

5348 I NE (EUNICE NE)

5348 IV (OIL CENTER I 62 500)

5348 I SE (EUNICE SE)

(CUSTER MOUNTAIN) 5348 III NE

(JAL NE) 5349 II NE

103° 15' — 103° 07' 30" — 32° 22' 30" — 32° 15'

R. 36 E. — 12' 30" R. 37 E.

T. 22 S. — T. 23 S. — T. 24 S.

EUNICE 4.3 MI. — LOVINGTON 45 MI. — HOBBS 23 MI.

870 000 FEET — 840 000 FEET — 460 000 FEET

500 000 FEET

JAL 10 MI. (JAL NW) — KERMIT, TEX. 29 MI. 5348 II NW

EUNICE #1

TEAGUE SWITCH COMPRESSOR STATION

MONUMENT DRAW — RATTLESNAKE CANYON

TEXAS — NEW MEXICO PIPELINE

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1968. Field checked 1969

Polyconic projection. 1927 North American datum
10,000-foot grid based on New Mexico coordinate system, east zone
1000-meter Universal Transverse Mercator grid ticks, zone 13, shown in blue

Fine red dashed lines indicate selected fence lines

Revisions shown in purple compiled from aerial photographs taken 1977 and other source data. This information not field checked. Map edited 1979

UTM GRID AND 1979 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

To place on the predicted North American Datum 1983 move the projection lines 9 meters south and 44 meters east as shown by dashed corner ticks

SCALE 1:24 000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

- Primary highway, all weather, hard surface
- Secondary highway, all weather, hard surface
- Light-duty road, all weather, improved surface
- Unimproved road, fair or dry weather
- State Route

QUADRANGLE LOCATION — NEW MEXICO

RATTLESNAKE CANYON, N. MEX.
N3215—W10307.5/7.5

EUNICE G.P.
PLT. 0010 & 0020

1969
PHOTOREVISED 1979
DMA 5348 I SW—SERIES V881

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1980

FLARE STACK

L.P.G. WELL NO. 2

L.P.G. WELL NO. 1

GAS COMPRESSOR STATION

(PROPERTY OF NORTHERN NATURAL GAS CO.)

DRAIN PIT

ELL NO. 18

PIT

OIL TANK

BRINE TANK

SALT-WATER DISP. WELL NO. 1

WASTE OIL

ANT OFFICE

WASTE TANK

NO. 28 NO. 27 NO. 26 NO. 25 NO. 24 NO. 23 NO. 22 NO. 21 NO. 20 NO. 19

STORAGE TANKS

NO. 17 NO. 16

PUMPS

AMINE RES GAS TREATING

ENGINE WATER

ENGINE WATER

INTAKE SCRUBBERS

FIN FAN

AMINE UNIT

PUMP AND CONTROL BUILDING

STILL

ABSORBER

BOILER WATER PUMPS

AMINE

FILTERS

AMINE TANKS

GLYCOL REBOIL.

NO. 7

6

NO. 5

NO. 4

NO. 3

NO. 2

NO. 1

WICKES BOILERS

TREATER OFFICE

OIL HEATER

FIN FAN

WATER COOLER

WATER PUMPS

BLDG.

FIN FAN

AIR COMP.

BLDG.

OIL RECOV.

JACKET WATER COOLERS

HOT WELL

GENERATOR BLDG.

ENGINE BUILDING

N.M.P.&L.

AIR

PIPE HDR. TRENCH

SCRUBBERS

AMINE SCRUB.

ENG. REPAIR SHOP

SEP.

REFRIG.

ABSORBER

STRIPPER

LUNCH RM. & ENG. PARTS BLDG.

RAW GASO. TANKS

NO. 14

PUMPS

NO. 13

NO. 12

NO. 11

TANKS

NO. 9 NO. 10

ACCUM. TANKS

FIN FAN

DISTILLATION COIL SHED

SEP

PUMPS

PROPANE DRYERS

STORAGE BUILDING

WATER TANK

WASTE WATER PUMPS

SKIMMER TANK

IDLE BASIN

FRACT.

FRACT. CONTROL

AIR COMP

GLYCOL UNIT

STILL

LEAN OIL

MEROX GASOLINE TREATING

CHROM. BLDG

PUMPS

STORAGE TANKS

NO. 80 NO. 81 NO. 82 NO. 83 NO. 84 NO. 85 NO. 86 NO. 87 NO. 88 NO. 89

92 91 90 88

TANK NO. 41 BUTANE

TANK NO. 70 BUTANE

TANK NO. 71 BUTANE

0 10 20 30 40 50 100 150

SCALE IN FEET

WAREHOUSE AND ELECTRIC SHOP

TREATED WATER

WATER TREATER BUILDING

FIN FAN

FRACTIONATORS

FIN FAN

COMP SHED

CAUSTIC REGEN.

L.P.G. TREATING (CAUSTIC & AMINE)

TRUCKERS BLDG.

L.P.G. STORAGE TANK

FRACT. COIL SHED

WATER COOLING TOWER

LOADING RACKS & OFFICE

DRAIN PIT

PLANT ROAD

STORAGE DOCKS

BUTANE TRANS. PUMP

TANK NO. 29 GASOLINE

TANK NO. 30 GASOLINE

PLANT ROAD

H_2S FLARE

H_2S VOL. DRUM

L.P.G. WELL NO. 3

SALT WATER PUMP

VALVE BOX

SUMP

SALT WATER STORAGE PIT NO. 1

WASTE WATER PIT TO BE CONVERTED TO SALT WATER STORAGE PIT NO. 3

SUMP

SALT WATER STORAGE PIT NO. 2

SUMP

FLARE SCRUBBER

L.P.G. WELL NO. 4

50' R

WASTE WATER DISPOSAL PIT NO. 4 (100' X 150' BASE)

SEE DWG. D-0010-81-5002 FOR PIT DETAILS

SUMP

6' 100'

25'

4' MANGATE

WATER KNOCK-OUT TANK

FLAKE CAUSTIC

LOADERS TEST LAB. BLDG.

LURE & M.S. OIL UNLOAD. PUMP

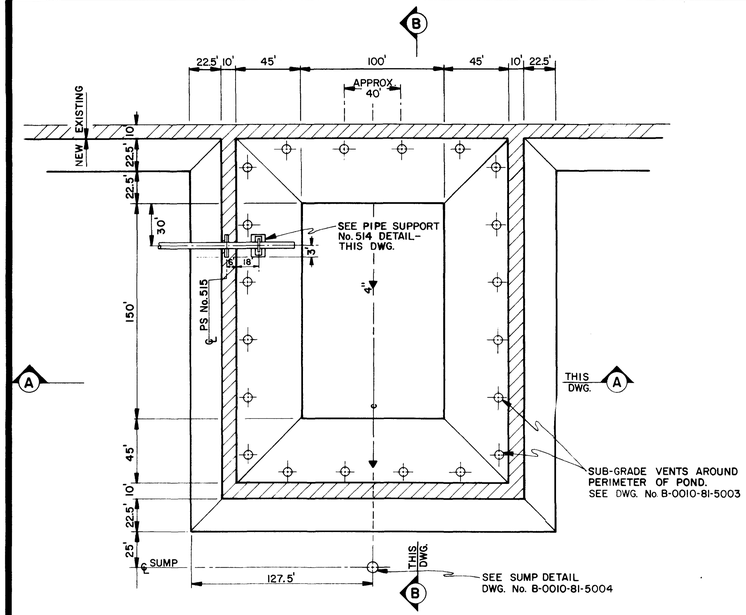
RECEIVED

APR 21 1989

OIL CONSERVATION DIV. SANTA FE

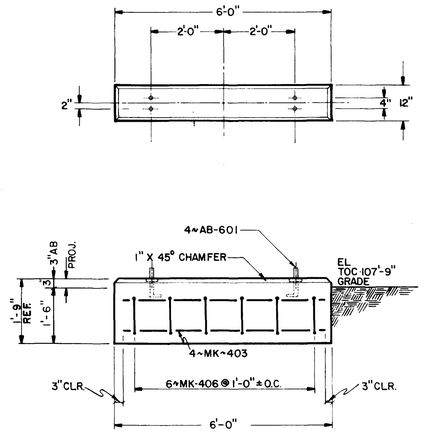
TEXACO | TEXACO USA NATURAL GAS PLANTS DIVISION

APPROVED:	DATE	TITLE: PARTIAL PLOT PLAN WASTE WATER DISPOSAL POND AREA EUNICE NO.1 GAS PLANT LEA CO. N.M.			
CHECKED:					
DESIGNED:					
DRAWN: CRIST	3/89	EST. NO.: 883222	SCALE NOTED	DWG. NO.: D-0010-72-5002	REV. B



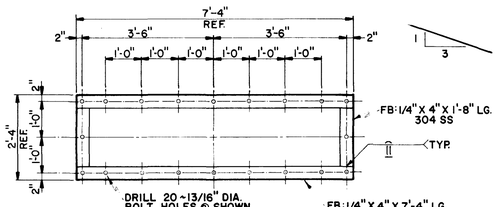
PLAN VIEW

(1) REQ'D — SCALE: 1" = 50'



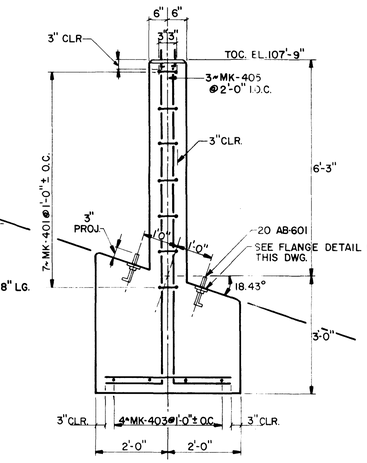
PIPE SUPPORT #515

(1) REQ'D — 1 3/8 CU. YD. REQ'D-SCALE: 1/2" = 1'-0"



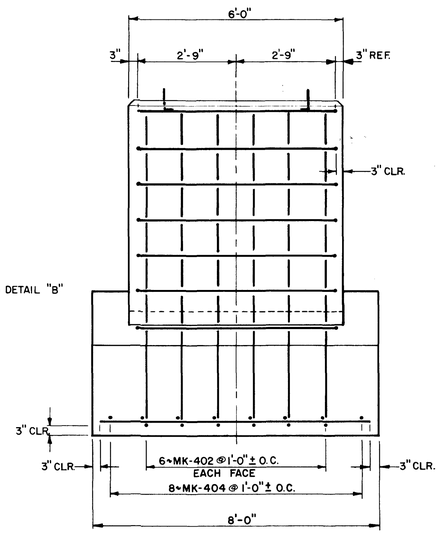
PIT LINER FLANGE DETAIL

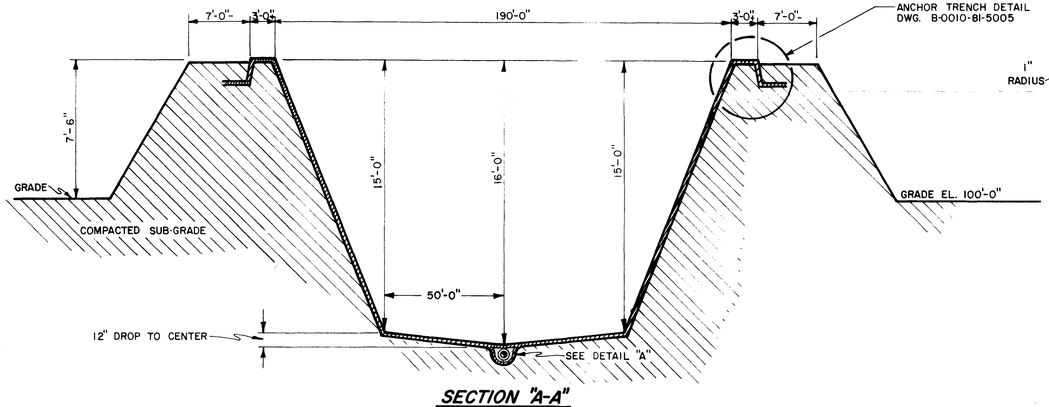
( ) REQ'D — SCALE: 1/2" = 1'-0"



PIPE SUPPORT #514

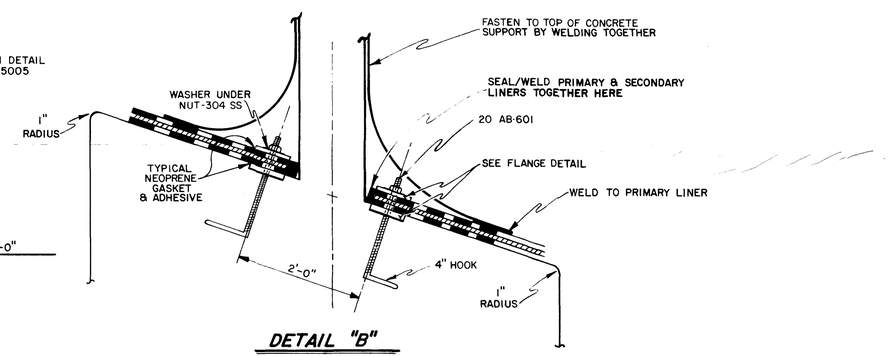
(1) REQ'D-5 CU. YD. REQ'D-SCALE: 1/2" = 1'-0"





SECTION "A-A"

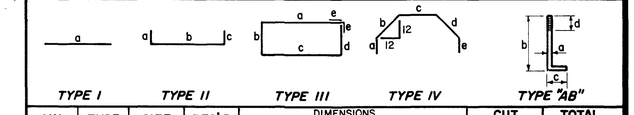
NO SCALE



DETAIL "B"

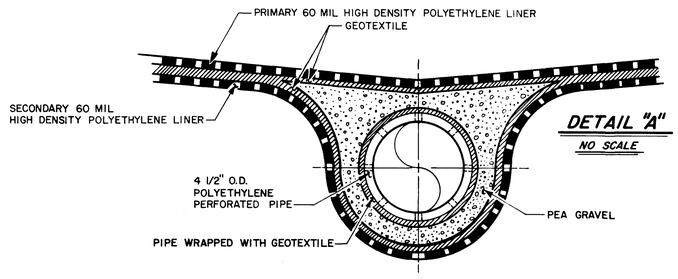
NO SCALE

REINFORCING BAR SCHEDULE



TYPE I — TYPE II — TYPE III — TYPE IV — TYPE "AB"

MK	TYPE	SIZE	REQ'D	DIMENSIONS a	b	c	d	e	CUT LENGTH	TOTAL LENGTH
401	III	No. 4	7	5'-6"	6"	5'-6"	6"	6"	12'-5-3/4"	87'-4-3/4"
402	II	No. 4	12	8'-9"	1'-7"				10'-2-3/4"	122'-9"
403	I	No. 4	8	7'-6"					7'-6"	60'-0"
404	I	No. 4	8	3'-6"					3'-6"	28'-0"
405	II	No. 4	6	0'-9"	6"				1'-1-3/4"	6'-10-1/2"
406	III	No. 4	8	2'-6"	1'-0"	2'-6"	1'-0"	6"	7'-5-3/4"	59'-10"
AB-601	AB	3/4"	40	3/4"	1'-2"	4"	4-1/4"		304 SS	—



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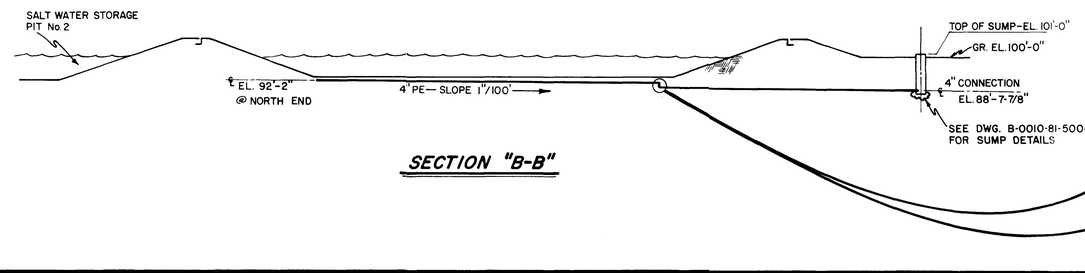
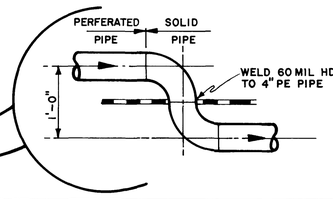


SECTION "B-B"



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APR 21 1989
OIL CONSERVATION DIV. SANTA FE

GENERAL NOTES:

1. Liner shall be installed atop, and evenly rolled, 1-1/2" to 2" thick layer of sand, compacted to a 95% Proctor Density. No sharp-edged exposed stones or aggregate will be allowed.
2. All concrete shall be made w/stone aggregate and shall develop a compressive strength of 3000 PSI in 28 days.
3. Concrete construction shall be in accordance w/ACI-318, latest edition.
4. All reinforcing bar shall be ASTM A-615 Gr. 60, and is dimensioned out to out.
5. Foundations shall rest on undisturbed soil or compacted sand returned to a 95% proctor density.
6. Splices shall overlap 12" or 24 bar diameters, whichever is greater.

REVISIONS

MK	DESCRIPTION	DATE	BY	CHK
A	Issue for approval	3-89	RAC	
B	Issue for bids	3-89	RAC	

REFERENCE DRAWINGS

DRAWING NO.	TITLE	DRAWING NO.	TITLE
D-0010-72-5002	Partial Plot Plan-Waste Water Disposal Pond Area		
B-0010-81-5003	Sub-Grade Vent Detail		
B-0010-81-5004	Sump Detail		
B-0010-81-5005	Anchor Trench Detail		

TEXACO | **TEXACO USA** NATURAL GAS PLANTS DIVISION

APPROVED:	DATE	TITLE: PIT No.4-WASTE WATER DISPOSAL POND EUNICE No.1-GAS PLANT
CHECKED:		
DESIGNED:		
DRAWN: R. CRIST 3-89	EST. NO.: 883222	SCALE: NOTED — DWG. NO.: D-0010-81-5001 — REV.: B

ANADARKO PROD. CO.
LMPSU TR. NO. 13 C
WELL NO. 5, UNIT "F"

H_2S FLARE

H_2S VOL. DRUM

FLARE STACK

L.P.G. WELL NO. 2

L.P.G. WELL NO. 1

L.P.G. WELL NO. 3

SALT WATER PUMP

VALVE BOX

SUMP

SALT WATER STORAGE PIT NO. 1

SALT WATER STORAGE PIT NO. 3 (Out of Service)

SUMP

SALT WATER STORAGE PIT NO. 2

SUMP

GAS COMPRESSOR STATION
(PROPERTY OF NORTHERN NATURAL GAS CO.)

WATER WELL NO. 18

DRAIN PIT

SALT-WATER DISP. WELL NO. 1

L.P.G. WELL NO. 4

50'

Waste Water Disposal Pit No. 4

50'

PLANT PARKING

PLANT OFFICE

WATER COOLER

FIN FAN

AIR COMP.

WATER PUMPS

BLDG.

STORAGE TANKS

NO. 28 NO. 27 NO. 26 NO. 25 NO. 24 NO. 23 NO. 22 NO. 21

NO. 17 NO. 16

PUMPS

WASTE TANK

INTAKE SCRUBBERS

ENGINE WATER

ENGINE WATER

AMINE RES. GAS TREATING

FIN FAN

AMINE UNIT

PUMP AND CONTROL BUILDING

STILL

ABSORBER

FILTERS

AMINE

AMINE TANKS

COOLER WATER PUMPS

JACKET WATER COOLERS

BLDG.

BLDG.

JTC RECOV.

HOT WELL

GENERATOR BLDG.

ENGINE BUILDING

N.M.P.&L.

AIR

PIPE HOR. TRENCH

SCRUBBERS

FIN FAN

SEP.

REFRIG.

ABSORBER

STRIPPER

AMINE SCRUB.

SEP.

PUMPS

WATER TANK

WASTE WATER PUMPS

BRINE TANK

GLYCOL REBOIL.

NO. 7

8

NO. 5

NO. 4

NO. 3

NO. 2

NO. 1

BOILERS

TREATER OFFICE

OIL HEATER

FIN FAN

WASTE OIL

IDLE PIT (FLOWERS)

ENG. REPAIR SHOP

LUNCH RM. & ENG. PARTS BLDG.

STORAGE AND LAB. BUILDING

DOCK

WELDING SHOP

RAW GASO. TANKS

NO. 14

NO. 13

NO. 12

NO. 11

PUMPS

IDLE BASIN

FRACT. CONTROL

AIR COMP.

GLYCOL REB.

ACCUM. TANKS

NO. 42 NO. 43

TANKS

DISTILLATION COIL SHED

STILL

LEAN OIL

FIN FAN

MEROX GASOLINE TREATING

SKIMMER TANK

CHROM. BLDG.

PROPANE DRYERS

PUMPS

STORAGE BUILDING

PUMPS

NO. 40 NO. 41 NO. 42 NO. 43 NO. 44 NO. 45 NO. 46 NO. 47 NO. 48 NO. 49 NO. 50

STORAGE TANKS

TANK NO. 41 BUTANE

TANK NO. 70 BUTANE

TANK NO. 71 BUTANE

WAREHOUSE AND ELECTRIC SHOP

TREATED WATER

WATER TREATER BUILDING

FIN FAN

FIN FAN

FRACTIONATORS

COMP. SHED

L.P.G. TREATING (CAUSTIC & AMINE)

CAUSTIC REGEN.

"TRUCKERS" BLDG.

FRACT. COIL SHED

WATER COOLING TOWER

LOADING RACKS & OFFICE

B-P FLUME TANK

DRAIN PIT

WATER KNOCK-OUT TANK

FLAKE CAUSTIC

LOADER

TST LAB BLDG.

LUBE & W.S. OIL UNLOAD. PUMP

METER SHOP LAB & OFFICE

CINDS

RETIRED WATER WELL

7-CAR GARAGE & STORAGE

PLANT ROAD

N. M. STATE HI-WAY NO. 18 LOOP

COMPANY HOUSES

STORAGE DOCKS

WATER WELL NO. 4

BUTANE TRANS. PUMP

TANK NO. 29 GASOLINE

TANK NO. 30 GASOLINE

PIPE RACKS

PLANT ROAD

TEXAS & N.M. RAILROAD

Electric Storage Building

RECEIVED
FEB 11 1991
OIL CONSERVATION DIV.
SANTA FE

EUNICE NO. 1 GASOLINE PLANT

0 10 20 30 40 50 100 150
SCALE IN FEET

SEPT. 1974

Texaco Dwg. No. E-0010-72-5003


ENGINE PARTS STORAGE BUILDING
ENGINE JACKET WATER COOLERS
MP
MK
ML
MQ
SEPTIC TANK
LAVATORY & STOREROOM
MG
MA
MB
MT
ME
ENGINE WATER STORAGE TANK
MF
MJ
FRESH WATER STORAGE TANKS
LS
ENGINE WATER TANK
WATER PUMPS
LD
ENGINE WATER HOT WELL
ENGINE WATER FILTER TANK
ENGINE REPAIR BLDG.
Oil Sump Tank
AIR CLEANERS
TWO AIR TANKS
ENGINE BUILDING
LUBE OIL COOLERS
LUBE OIL COOLERS
PLANT INTAKE SCRUBBER
PLANT INTAKE SCRUBBERS
HIGH COMPRESSION INTAKE SCRUBBER
PLANT INTAKE NO. 3
PLANT INTAKE NO. 2
TRANSFORMER SUB-STATION
LEAN AMINE PUMPS
AMINE CONTROL BUILDING
LEAN AMINE COOLER
AMINE STILL OVHD. CONDENSER
AMINE CONTACTOR
AMINE STILL
AMINE REFLUX PUMP SKID
LEAN AMINE SURGE TANK
AMINE REBOILER
HOT OIL SURGE TANK
HOT OIL PUMP SKID
Slop Oil Tanks
Waste Water Tank
STORAGE BLDG.
HIGH COMP. COND. SCRUBBER
HIGH COMP. INTAKE SCRUBBER
WASH GASOLINE DISPOSAL
ABSORBER NO. 2
ABSORBER RES. GAS SCRUBBER
LEAN OIL PUMPS
FINAL RES. GAS SCRUBBER
ABSORBER NO. 1
STARTERS
LEAN OIL MAKE-UP PUMP
GLYCOL SEPARATOR
WATER KNOCK-OUT
2ND STAGE DISCH. SCRUBBER
H2S Comp. Bldg. 7
Clark Compr's. Gas Coolers
STILL PROD. ACCUM. PUMPS
COOLING TOWER
PLANT INTAKE NO. 1
RAW GASOLINE STORAGE TANK
ACID STORAGE TANK
Water Pumps
STRIPPER TOWER
STRIPPER HEAT
HEATER NO. 1
OIL HEATER
HEATER NO. 2
OIL HEATER
SULFUR RECOVERY UNIT AND INCINERATOR
INCIN. #1
SITE COORD. S. 210'-0"
SITE COORD. E. 59'-0"
S. 153'-0"
S. 190'-0"
50'-0"
124'-3"

REV	DATE	BY	DESCRIPTION
1	5-90	A.T.M.	Added Amine Treating Facilities
2	[illegible]-90	BAT	ADDED ENVIR./COVER [illegible]

CR	JOB	CR	JOB
2000	4800	2148	7339
2001	4987	2191	7920
2002	4961	2200	7899
2005	5272	Revised to & Incl.	
2006	5273	CR-2203	9-6-62
(2009)	5480	2228	50032
2010	4800	2235	60109
2012	5234	2253	60306
2013	5089	2259	54505
2015	5509	2274	60412
2020	5500	Revised to & Incl.	
2021	5500	CR-2290	7-7-66
2022	5912	2293	57203
2024	5810	2295	56281
2030	5941		
2040	5975		
2044	6386		
2045	6426		
(2067)	1350		
2077	6732		
2100	1350		
2110	6998		
2127	1350		
2136	1350		

REVISED TO AND INCLUDING

CR	DATE	CR	DATE	CR	DATE	CR	DATE	CR	DATE	CR	DATE
2369	8-3-72										
2404	11-28-72										
2410	1-3-73										
2425	11-13-73										
2433	9-9-74										
2436	8-27-76										

RECEIVED
FEB 12 1991
OIL CONSERVATION DIV.
SANTA FE

SKELLY OIL COMPANY

MANUFACTURING DEPT. TULSA OKLA.

EUNICE GASOLINE PLANT No.2

ENVIRONMENTAL PLOT PLAN

LOCATION	Approx. 40 Acres In The S½, SE¼, NE¼ & NE¼, SE¼ Of Section 28, T-21-S, R-37-E. Lea Co. New Mexico		
DRAWN	McElhaney & Whitt	DATE	SEPT. 5, 1958
CHECKED	Evan L. McElhaney 8/62	SCALE	1" = 20'-0"
APPROVED	R. E. Mitchell Jr.	DWG. # R-0020-72-5001	
APPROVED			

Highlander Environmental Corp.

Midland, Texas

December 17, 1998

Mr. William C. Olson, Hydrogeologist
State of New Mexico
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Subsurface Environmental Assessment - Groundwater Plume Delineation, Texaco Exploration and Production, Inc., Former Eunice # 1 (South) Gas Plant, Lea County, New Mexico

Dear Mr. Olson:

Highlander Environmental Corp. (Highlander) has been retained by Texaco Exploration and Production, Inc. (Texaco) to delineate the extent of a groundwater contaminant plume at its Eunice # 1 (South) Gas Plant (Site), located approximately 4.5 miles south of Eunice, New Mexico. The Site is situated in the northwest quarter (NW/4) of the southwest quarter (SW/4), Section 27, Township 22 South, Range 37 East, Lea County, New Mexico. Figure 1 presents a Site location and topographic map.

Background

During the period July 1996 through June 1997, Highlander was retained by Texaco to conduct subsurface environmental investigations at the Site that were required by the New Mexico Oil Conservation Division (NMOCD), in conjunction with renewal of the Site's Groundwater Discharge Plan. The investigations consisted of collection and analysis of soil samples from hand auger and rotary-drilled borings, installation of monitoring wells, collection and analysis of groundwater samples, phase-separated hydrocarbon (free product) assessment, hydraulic conductivity (slug) tests and pumping tests. The results of these investigations have been documented in reports titled, " Subsurface Environmental Assessment, Texaco Exploration and Production, Inc., Eunice # 1 (South) Gas Plant, Lea County, New Mexico, September 1996" and "Final Investigation Report, Texaco Exploration and Production, Inc., Eunice # 1 (South) Gas Plant, Lea County, New Mexico, July 1997".

During November 1997, Highlander prepared the document titled, "Subsurface Abatement Work Plan", which was prepared on behalf of Texaco and submitted to the NMOCD. The Subsurface Abatement Work Plan was approved by the NMOCD on March 4, 1998, under the condition that Texaco submit a work plan to complete the

definition of the extent of groundwater contamination at the Site. Specifically, the extent of benzene, toluene, ethylbenzene, and xylene (BTEX) and barium in groundwater near the southwest corner of the Site, and the chloride and total dissolved solids (TDS) in groundwater in the vicinity of the northeast corner of the Site. The work plan was due to the NMOCD by May 1, 1998, however, due to pending change in operatorship of the Gas Plant, an extension was granted by the NMOCD. On October 4, 1998, Highlander submitted a work plan to the NMOCD, on behalf of Texaco, that included installation of six (6) additional groundwater monitoring wells and collection of groundwater samples for laboratory analysis.

Groundwater Plume Delineation

From November 20-27, 1998, Highlander personnel supervised installation of six (6) monitoring wells (MW-13 through MW-18). Wells MW-13 and MW-14 were drilled south of the Site to delineate *the southern* extent of BTEX in groundwater. Wells MW-15 and MW-16 were drilled east of the Site to determine the eastern most downgradient concentration of chloride in groundwater. Wells MW-17 and MW-18 were drilled near the north boundary of the Site to determine the concentration of chloride upgradient and determine if there was a potential source for the chloride impact north of the Site. Figure 2 presents a Site drawing.

Scarborough Drilling, Inc. (Scarborough) drilled the wells using a truck-mounted water rotary drill rig. Samples of drill cuttings were collected every ten feet and at changes in lithology. The drill cuttings were visually examined for lithology and a borehole sample log was prepared for each boring. Appendix A presents the borehole sample logs. The drilling rig and all down-hole equipment (i.e., drill rods, bits, etc.) were thoroughly washed between boreholes using a high pressure hot water washer. The drill cuttings were placed on the ground adjacent to the borehole.

The wells were constructed of 4-inch diameter, screw threaded, schedule 40 PVC casing and 0.020 inch factory slotted screen. The well screen, approximately twenty (20) feet in length, was placed into the boring with approximately 5 feet of screen above groundwater and 15 feet below groundwater. The well screens were filter packed with graded (20-40) silica sand, which was placed in the annular space between the borehole wall and screen to a depth approximately two (2) feet above the screen. A seal consisting of bentonite pellets, approximately 2 feet thick was placed above the sand and hydrated. The remainder of the borehole annulus was filled to approximately 2 feet BGS with cement-bentonite grout. Each well was secured with a locking water-tight cap. The wells were secured with above-grade well covers, anchored in a concrete pad measuring approximately 3 x 3 feet. Table 1 presents a summary of monitor well completion details. Appendix B presents the monitor well completion records.

Following installation, the wells were developed by Scarborough, using a three (3) inch diameter rig bailer. The bailer was thoroughly decontaminated between wells by washing with a high pressure washer. Groundwater displaced from the wells was contained in a portable tank, transferred to the Eunice #2 (North) Gas Plant and discharged into the wastewater and oil sump.

On December 3, 1998, Highlander personnel collected groundwater samples from the wells. The wells were purged prior to sampling by pumping with a stainless steel submersible pump. A minimum of three (3) casing volumes of groundwater was removed from each well and contained in a portable tank. The purged water was transferred to the Eunice #2 (North) Gas Plant and discharged to the wastewater and oil sump. The groundwater samples were collected using dedicated disposable polyethylene well bailers and line. The groundwater samples were carefully transferred to appropriately labeled and preserved sample containers, which were provided by the analytical laboratory (Trace Analysis, Inc., Lubbock, Texas). Groundwater samples from wells MW-13 and MW-14 were analyzed for BTEX and dissolved (filtered) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), chloride and TDS. Samples from wells MW-15 through MW-18 were analyzed for BTEX, chloride and TDS. Each well was checked for depth-to-groundwater and total depth before purging. Also, depth-to-groundwater and hydrocarbon product thickness measurements were obtained on all monitoring wells and water wells at the Site on December 7, 1998. Table 2 presents a summary of the depth-to-groundwater and hydrocarbon product thickness measurements. Table 3 presents a summary of the BTEX. Table 4 presents a summary of the metals, chloride, and TDS analysis. Appendix C presents the analytical laboratory reports, chain of custody control forms, and QA/QC documentation.

Plume Delineation Results

Depth-to-groundwater measurements collected from monitoring wells and water wells on December 7, 1998, were used to construct a groundwater potentiometric map (Figure 3). On December 7, 1998, the elevation of the groundwater surface ranged from approximately 3282.15 feet AMSL at monitor well MW-3 (up gradient) to 3278.95 feet AMSL at water well WW-4 (down gradient). Groundwater flow was generally from northwest to southeast at a gradient of approximately 0.001 feet per foot (ft/ft). The groundwater flow direction on December 7, 1998, was generally consistent with previous data presented on May 28, 1997 and the regional groundwater flow direction for the High Plains aquifer.

The only detectable concentration of benzene was reported in the groundwater from well MW-16, which reported 8 micrograms per liter (ug/L). The benzene concentration is below the New Mexico Water Quality Control Commission (WQCC) human health standard of 10 ug/L. These results conclude that the extent of the benzene

impact has been defined. Figure 4 presents an isopleth map showing the distribution of benzene in groundwater at the Site. Toluene, ethylbenzene and xylene were below less than the test method detection limit in the groundwater samples from wells MW-13 through MW-18.

Groundwater samples from wells MW-13 and MW-14 were analyzed for dissolved metals. Barium, the only metal detected in the groundwater samples, was reported at 1.3 milligrams per liter (mg/L) in the sample from well MW-13. The barium concentration was slightly above the WQCC human health standard of 1.0 mg/L. However, the barium level reported in well WW-4 was less than the test method detection limit of 0.2 mg/L on August 22, 1996. These results conclude that the extent of dissolved metals in groundwater has been defined. Chloride levels ranged from 420 mg/L (MW-14) to 6,000 mg/L (MW-17), and TDS ranged from 1,100 mg/L (MW-13 and MW-14) to 11,000 mg/L (MW-17). The WQCC domestic water supply standards for chloride and TDS are 250 mg/L and 1,000 mg/L, respectively. Figure 5 presents an isopleth map showing the distribution of chloride in groundwater at the Site. Referring to Figure 5, chloride and TDS slightly exceeded the WQCC standards at wells MW-13 and MW-14. However, these levels are consistent with "background" levels of 430 mg/L (chloride) and 1,200 mg/L (TDS) reported in groundwater samples from well MW-3 (upgradient). These results conclude that the extent of chloride and TDS has been defined south of the Site. Chloride and TDS levels reported in groundwater samples from wells MW-15 through MW-18 exceed the WQCC domestic water supply standards. However, the distribution of these contaminants in groundwater indicates that a significant impact exists north (upgradient) of the Site and is migrating in groundwater onto the Site. The isopleth map for chloride indicates that the surface ponds located near the northeast corner of the Site are not the source for the chloride and TDS impact. Anadarko has operated high pressure saltwater injection wells north of the plant site and has had a history of saltwater leaks. In addition, Anadarko also had brine pits north and east of the plant. Both locations appear to have impacted the groundwater in the northeast corner of the Texaco plant site.

Based on the results of its investigations, Texaco feels that, it has delineated the extent of contaminants in groundwater from its Site, and, therefore, no further investigation is required. Please call if you have any questions.

Sincerely,
Highlander Environmental Corp.

Mark J. Larson
Senior Project Manager

Encl.
cc: Mr. Bob Foote, Texaco Exploration and Production, Inc.
Mr. Wayne Price, OCD - Hobbs

TABLES

Table 1: **Summary of Soil Boring, Monitor Well and Water Well Drilling and Completion Details**
Texaco Exploration and Production, Inc., Eunice #2 (South) Gas Plant
Lea County, New Mexico

Drilling Area	Soil Boring/ Monitor Well No.	Date Drilled	Drilled Depth Feet, BGS	Ground Elevation Feet, MSL	Top of Casing Elev. Feet, MSL	Well Diameter Inches	Well Screen Interval Feet, BGL	Depth-to-Ground Water Feet, TOC 12/7/98
Jet Turbine Skid	BH-3	8/20/96	57.00	3336.11	--	--	--	--
Engine Sump #30	BH-1	8/21/96	17.00	3336.4	--	--	--	--
	AH-1	8/6/96	10.80	--	--	--	--	--
	AH-2	6/6/97	3.5	--	--	--	--	--
	AH-3	6/6/97	4.0	--	--	--	--	--
	AH-4	6/6/97	4.0	--	--	--	--	--
Engine Sump #31	BH-1	8/6/96	5.6	3336.39	--	--	--	--
Oil & Water Sump	BH-1	8/21/96	57	3335.34	--	--	--	--
Slop Oil Sump	BH-1	7/26/96	57	3334.64	--	--	--	--
Emergency Flare Sump	Trench	8/22/96	5.0	3337.09	--	--	--	--
H2S Flare Sump	BH-1	8/20/96	42	3332.58	--	--	--	--
Jet Turbine Skid	MW-1 (BH-1)	8/19/96	60	3335.52	3335.32	2	45.00 - 60.00	**53.63 (2.31)
Jet Turbine Skid	MW-2 (BH-2)	8/20/96	61	3335.79	3335.50	2	46.00 - 61.00	*53.87 (2.50)
Background	MW-3	5/5/97	66.40	3337.87	3339.89	4	46.40 - 66.40	57.74
Background	MW-4	5/6/97	66.69	3333.69	3333.50	4	46.69 - 66.69	51.73
Down Gradient of Process Area	MW-5	5/5/97	66.54	3331.83	3334.11	4	46.54 - 66.54	**52.62 (2.68)
Down Gradient of Surface Impoundments	MW-6	5/8/97	66.64	3330.74	3332.6	4	46.64 - 66.54	50.95
Down Gradient of Surface Impoundments	MW-7	5/7/98	66.70	3328.71	3330.66	4	46.70 - 66.70	49.01
Down Gradient of Facility	MW-8	8/8/97	66.76	3328.92	3330.91	4	46.76 - 66.76	49.70

Notes:

1. BGS: Denotes depth in feet below ground surface.
2. MSL: Denotes elevation in feet above mean sea level.
3. TOC: Denotes depth in feet below top of casing.
4. *: Denotes open hole completion.
5. **: Depth-to-Groundwater corrected for phase separated hydrocarbons, assuming assuming specific gravity of 0.75. Parenthisis denotes apparent product thickness.
6. --: No data available.

Table 1 (Continued): **Summary of Soil Boring, Monitor Well and Water Well Drilling and Completion Details (continued)**
Texaco Exploration and Production, Inc., Eunice #2 (South) Gas Plant
Lea County, New Mexico

Drilling Area	Soil Boring/ Monitor Well No.	Date Drilled	Drilled Depth Feet, BGS	Ground Elevation Feet, MSL	Top of Casing (T.C.) Elev. Feet, MSL	Well Diameter Inches	Well Screen Interval Feet, BGL	Depth-to-Ground Water Feet, TOC 12/7/98
Down Gradient of Facility	MW-9	5/9/97	66.80	3332.64	3335.02	4	46.80 - 66.80	54.12
Down Gradient of Jet Turbine Skid	MW-10	5/12/97	66.40	3335.13	3334.88	4	46.40 - 66.40	53.16
Oil and Water Sump	MW-11	5/13/97	66.79	3335.55	3335.16	4	46.79 - 66.79	53.32
Slop Oil Sump	MW-12	5/14/97	67.12	3334.44	3334.15	4	47.12 - 67.12	52.26
Downgradient of Facility	MW-13	10/20/88	68.00	3334.16	3336.15	4	48.00 - 68.00	56.84
Downgradient of Facility	MW-14	10/21/98	65.00	3330.50	3333.04	4	45.00 - 65.00	53.10
Downgradient of Facility	MW-15	10/26/98	68.00	3326.89	3328.98	4	45.99 - 65.35	48.07
Downgradient of Facility	MW-16	10/26/98	68.00	3328.1	3330.2	4	46.54 - 65.90	49.09
Downgradient of Facility	MW-17	10/27/98	68.00	3332.21	3334.32	4	47.15 - 66.50	52.84
Downgradient of Facility	MW-18	10/27/98	68.00	3333.85	3336.10	4	45.64 - 65.00	54.33
Plant Water Well (inactive)	WW-1	--	149.4	3331.53	3332.04	10	--	51.21
Plant Water Well (inactive)	WW-2	--	91.44	3330.86	3331.46	8	--	50.31
Plant Water Well (inactive)	WW-3	--	80.30	3334.33	3334.45	8	--	53.44
Plant Water Well (inactive)	WW-4	--	--	3333.93	3335.40	6	91.00 - 111.00	56.45
Plant Water Well (inactive)	WW-5	--	93.24	3332.62	3334.18	8	75.00 - 111.00	53.9
Plant Water Well (inactive)	WW-6	--	116.74	3329.69	3329.98	8.5	*100.00 - 148.00	50.64
Plant Water Well (inactive)	WW-7	--	60.83	3331.73	3332.5	6.25	147.00 - 167.00	51.45
Recovery Well	RW-1	8/12/98	110.00	-	-	6	50.00 - 110.00	53.66

Notes:

1. BGS: Denotes depth in feet below ground surface.
2. MSL: Denotes elevation in feet above mean sea level.
3. TOC: Denotes depth in feet below top of casing.
4. *: Denotes open hole completion.
5. **: Depth-to-Groundwater corrected for phase separated hydrocarbons, assuming assuming specific gravity of 0.75. Parenthisis denotes apparent product thickness.
6. --: No data available.

Table 1 (Continued): **Summary of Soil Boring, Monitor Well and Water Well Drilling and Completion Details**
Texaco Exploration and Production, Inc., Eunice #2 (South) Gas Plant
Lea County, New Mexico

Drilling Area	Soil Boring/ Monitor Well No.	Date Drilled	Drilled Depth Feet, BGS	Ground Elevation Feet, MSL	Top of Casing Elev. Feet, MSL	Well Diameter Inches	Well Screen Interval Feet, BGL	Depth-to-Ground Water Feet, TOC 12/7/98
West of NNG	TMW-1	12/5/95	68.00	3335.86	3337.91	4	48.00 - 67.50	55.82
West of NNG	TMW-2	11/28/95	67.00	3335.54	3338.51	4	47.00 - 66.50	**56.51 (0.01)
South of NNG	TMW-3	11/29/95	68.00	334.75	3336.88	4	48.00 - 67.50	54.87
Southeast of NNG	TMW-5	11/27/98	67.00	3332.99	3335.88	4	47.00 - 66.50	53.98
Southwest of NNG	TMW-6	12/4/95	68.00	3335.72	3335.58	4	48.00 - 67.50	53.57

Notes:

1. BGS: Denotes depth in feet below ground surface.
2. MSL: Denotes elevation in feet above mean sea level.
3. TOC: Denotes depth in feet below top of casing.
4. *: Denotes open hole completion.
5. **: Depth-to-Groundwater corrected for phase separated hydrocarbons, assuming assuming specific gravity of 0.75. Parenthisis denotes apparent product thickness.
6. --: No data available.

Table 3: Summary of Volatile, Semi-Volatile Organic, and TPH Analysis of Groundwater Samples
Texaco Exploration and Production, Inc., Eunice #1 (South) Gas Plant
Lea County, New Mexico

Well Number	Sample Date	1,1-Dichloroethane ug/L	Benzene ug/L	Carbon disulfide ug/L	1,1,2,2 - Tetrachloroethane ug/L	Vinyl accetate ug/L	Toluene ug/L	Ethylbenzene ug/L	Xylene ug/L	2-methylphenol mg/L
MW-1	8/26/96	<100	7,370	<100	<100	<100	6,020	867	1,571	0.034
MW-3	5/30/97	<1	29	<1	<1	<1	22	11	18	<0.001
MW-4	5/30/97	<1	47	<1	<1	<1	1	<1	<1	<0.001
MW-5	5/30/97	<50	1,700	<50	<50	<50	320	280	510	<0.01
MW-6	5/30/97	<1	2	<1	<1	<1	1	<1	<1	<0.001
MW-7	5/30/97	<1	2	<1	<1	<1	2	1	1	<0.001
MW-8	6/20/97	<1	3	<1	<1	<1	2	<1	<1	<0.001
MW-9	5/30/97	<50	7,900	<50	<50	<50	800	600	610	0.002
MW-10	5/29/97	<10	4,100	<10	<10	<10	280	280	359	0.023
MW-11	5/29/97	<100	30,000	<100	<100	<100	4,700	780	1,320	0.018
MW-12	5/29/97	<500	13,300	<500	<500	900	24,000	5,200	10,400	0.013
MW-13	11/3/98	--	<1	--	--	--	<1	<1	<1	--
MW-14	11/3/98	--	<1	--	--	--	<1	<1	<1	--
MW-15	11/3/98	--	8	--	--	--	<1	<1	<1	--
MW-16	11/3/98	--	<1	--	--	--	<1	<1	<1	--
MW-17	11/3/98	--	<1	--	--	--	<1	<1	<1	--
MW-18	11/3/98	--	<1	--	--	--	<1	<1	<1	--
TMW-1	6/2/97	2	9	<1	<1	<1	2	1	3	<0.002
TMW-2	6/2/97	<10	2,700	<10	<10	<10	<10	810	1,290	<0.01
TMW-3	6/2/97	<1	428	2	5	<1	3	1,100	154	<0.001
TMW-5	6/2/97	<5	480	<5	<5	<5	<5	270	73	<0.01
TMW-6	6/2/97	<10	2,100	<10	<10	<10	<10	500	630	<0.01
WW-1	8/26/96	<10	105	<10	<10	<10	14	23	53	<0.01
	6/2/97	<10	170	<10	<10	<10	<10	18	24	<0.005
WW-2	8/26/96	<1	<1	<1	<1	<1	<1	<1	<1	<0.001
	6/30/97	<1	<1	<1	<1	<1	<1	<1	<1	<0.001
WW-3	8/26/96	<1	33	<1	<1	<1	<1	<1	3	<0.001
	6/30/97	<1	11	<1	<1	<1	<1	7	<1	<0.001
WW-4	8/22/96	<1	<1	<1	<1	<1	<1	<1	<1	<0.010
	4/1/98	-	<10	-	-	-	<10	<10	<10	-
WW-5	6/30/97	<1	18	<1	<1	<1	<1	1	<1	<0.001
	4/1/98	-	9	-	-	-	<1	2	4	<0.001
WW-6	6/30/97	<1	<1	<1	<1	<1	<1	<1	<1	<0.001
	4/1/98	-	<1	-	-	-	<1	<1	<1	-
WW-7	6/30/97	<1	<1	<1	<1	<1	<1	57	22	<0.001
*	3/20/98	-	<1	-	-	-	<1	43	11	-

Notes: All analysis performed by Trace Analysis, Inc., Lubbock, Texas

1. ug/L: Denotes volatile organic analytic concentration in micrograms per liter
2. mg/L: Denotes semi-volatile organic and TPH concentration in milligrams per liter
3. <: Denotes analytic concentration below the analytical test method detection limit
4. -: No data available
5. *: Duplicate Sample for MW-3

Table 3: (continued) Summary of Volatile, Semi-Volatile Organic, and TPH Analysis of Groundwater Samples

Texaco Exploration and Production, Inc., Eunice #1 (South) Gas Plant

Lea County, New Mexico

Well Number	Sample Date	1,1-Dichloroethane ug/L	Benzene ug/L	Carbon disulfide ug/L	1,1,2,2 - Tetrachloroethane ug/L	Vinyl accetate ug/L	Toluene ug/L	Ethylbenzene ug/L	Xylene ug/L	2-methylphenol mg/L
Equipment Blank	5/29/97	<1	<1	<1	<1	<1	<1	<1	<1	<0.001
*Duplicate (MW-3A)	5/30/97	<1	30	<1	<1	<1	22	11	18	<0.001
Trip Blank	5/29/97	-	<1	<1	<1	<1	2	<1	<1	-
	5/30/97	-	<1	<1	<1	<1	<1	<1	<1	-

Notes: All analysis performed by Trace Analysis, Inc., Lubbock, Texas

1. ug/L: Denotes volatile organic analytic concentration in micrograms per liter
2. mg/L: Denotes semi-volatile organic and TPH concentration in milligrams per liter
3. <: Denotes analytic concentration below the analytical test method detection limit
4. -: No data available
5. *: Duplicate Sample for MW-3

Table 3: (Continued) Summary of Volatile, Semi-Volatile Organic, and TPH Analysis of Groundwater Samples
Texaco Exploration and Production, Inc., Eunice #1 (South) Gas Plant
Lea County, New Mexico

Well Number	Sample Date	4-methylphenol/ 3-methylphenol (mg/L)	Anthracene mg/L	Naphthalene mg/L	2-methlynaphthalene mg/L	TRPHC mg/L	Acetophenone mg/L	Di-n-butyl-phalate mg/L	Phenol mg/L
MW-1	8/26/96	0.038	0.015	<0.01	<0.01	45.7	<0.05	<0.01	<0.01
MW-3	5/30/97	<0.001	<0.001	<0.001	<0.001	-	<0.005	<0.001	<0.01
MW-4	5/30/97	<0.001	<0.001	<0.001	<0.001	-	<0.005	<0.001	<0.001
MW-5	5/30/97	<0.01	<0.01	0.018	<0.01	-	<0.05	<0.01	<0.01
MW-6	5/30/97	<0.001	<0.001	<0.001	<0.001	-	<0.005	<0.001	<0.001
MW-7	5/30/97	<0.001	<0.001	<0.001	<0.001	-	<0.005	<0.001	<0.001
MW-8	6/20/97	<0.001	<0.001	<0.001	<0.001	-	<0.005	<0.001	<0.001
MW-9	5/30/97	0.003	<0.001	0.004	0.003	-	0.006	0.001	0.013
MW-10	5/29/97	0.011	<0.005	0.007	0.005	-	<0.025	<0.005	0.033
MW-11	5/29/97	0.31	<0.05	<0.05	<0.05	-	<0.25	<0.05	0.017
MW-12	5/29/97	0.016	<0.1	<0.10	<0.1	-	<0.50	<0.1	<0.01
MW-13	11/3/98	--	--	--	--	--	--	--	--
MW-14	11/3/98	--	--	--	--	--	--	--	--
MW-15	11/3/98	--	--	--	--	--	--	--	--
MW-16	11/3/98	--	--	--	--	--	--	--	--
MW-17	11/3/98	--	--	--	--	--	--	--	--
MW-18	11/3/98	--	--	--	--	--	--	--	--
TMW-1	6/2/97	<0.002	<0.002	<0.002	<0.002	-	<0.01	<0.002	<0.002
TMW-2	6/2/97	<0.01	<0.01	0.019	0.016	-	<0.05	<0.01	<0.001
TMW-3	6/2/97	<0.001	<0.001	0.002	<0.001	-	<0.005	<0.001	<0.001
TMW-5	6/2/97	<0.01	<0.01	0.011	<0.01	-	<0.05	<0.01	<0.001
TMW-6	6/2/97	<0.01	<0.01	0.018	<0.01	-	<0.05	<0.01	<0.001
WW-1	8/26/96	<0.01	<0.01	<0.01	<0.001	4.8	<0.05	<0.01	<0.01
	6/2/97	<0.005	<0.005	<0.005	<0.005	-	<0.025	<0.005	<0.005
WW-2	8/26/96	<0.001	<0.001	<0.001	<0.001	0.277	<0.005	<0.001	<0.001
	6/30/97	<0.001	<0.001	<0.001	<0.001	-	<0.005	<0.001	<0.001
WW-3	8/26/96	0.001	<0.001	0.001	0.001	2.16	<0.005	<0.001	<0.001
	6/30/97	<0.001	<0.001	<0.001	<0.001	-	<0.005	<0.001	<0.001
WW-4	8/22/96	<0.001	<0.001	<0.001	<0.001	-	<0.005	<0.001	<0.001
	4/1/98	-	-	-	-	-	-	-	-
WW-5	6/30/97	<0.001	<0.001	<0.001	<0.001	-	<0.005	0.011	<0.001
	4/1/98	-	-	-	-	-	-	-	-
WW-6	6/30/97	<0.001	<0.001	<0.001	<0.001	-	<0.005	0.003	<0.001
	4/1/98	--	-	-	-	-	-	-	-
WW-7	6/30/97	<0.001	<0.001	<0.001	<0.001	-	<0.005	<0.001	<0.001
	3/20/98	-	-	-	-	-	-	-	-
Equipment Blank	5/29/97	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001
*Duplicate (MW-3A)	5/30/97	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001
Trip Blank	5/29/97	-	-	-	-	-	-	-	-
	5/30/97	-	-	-	-	-	-	-	-

Notes: All analysis performed by Trace Analysis, Inc., Lubbock, Texas

1. ug/L: Denotes volatile organic analytic concentration in micrograms per liter
2. mg/L: Denotes semi-volatile organic and TPH concentration in milligrams per liter
3. <: Denotes analytic concentration below the analytical test method detection limit
4. -: No data available
5. *: Duplicate Sample for MW-3

Table 3: **(Continued) Summary of Volatile, Semi-Volatile Organic, and TPH Analysis of Groundwater Samples**
Texaco Exploration and Production, Inc., Eunice #1 (South) Gas Plant
Lea County, New Mexico

Well Number	Sample Date	4-methylphenol/ 3-methylphenol (mg/L)	Anthracene mg/L	Naphthalene mg/L	2-methlynaphthalene mg/L	TRPHC mg/L	Acetophenone mg/L	Di-n-butyl-phalate mg/L	Phenol mg/L
Equipment Blank	5/29/97	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001
*Duplicate (MW-3A)	5/30/97	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001
Trip Blank	5/29/97	-	-	-	-	-	-	-	-
	5/30/97	-	-	-	-	-	-	-	-

Notes: All analysis performed by Trace Analysis, Inc., Lubbock, Texas

1. ug/L: Denotes volatile organic analytic concentration in micrograms per liter
2. mg/L: Denotes semi-volatile organic and TPH concentration in milligrams per liter
3. <: Denotes analytic concentration below the analytical test method detection limit
4. -: No data available
5. *: Duplicate Sample for MW-3

Table 4: Summary of Dissolved Metals and General Inorganic Analysis of Groundwater Samples
Texaco Exploration and Production, Inc., Eunice #1 (South) Gas Plant
Lea County, New Mexico

Well Number	Sample Date	Arsenic mg/L	Barium mg/L	Cadmium mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Selenium mg/L	Silver mg/L	Chloride mg/L	TDS mg/L
MW-1	8/26/96	<0.10	0.51	<0.02	<0.05	<0.10	<0.001	<0.10	<0.01	--	--
MW-2	8/26/96	--	--	--	--	--	--	--	--	--	--
MW-3	5/30/97	<0.10	<0.20	<0.20	<0.05	<0.10	<0.001	<0.10	<0.05	430	1,200
MW-4	5/30/97	<0.10	0.2	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	5,500	10,000
MW-5	5/30/97	<0.10	<0.20	<0.02	<0.05	<0.10	<0.001	<0.10	0.28	1,500	4,000
MW-6	5/30/97	<0.10	0.2	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	3,000	6,600
MW-7	5/30/97	<0.10	<0.20	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	330	1,300
MW-8	6/02/97	<0.10	<0.20	<0.02	<0.05	<0.10	<0.001	<0.10	1.5	1,900	4,200
MW-9	5/30/97	<0.10	2.7	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	340	1,200
MW-10	5/29/97	<0.10	0.5	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	530	1,400
MW-11	5/29/97	<0.10	1.5	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	750	2,800
MW-12	5/29/97	<0.10	<0.20	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	1,300	3,000
MW-13	11/03/98	<0.1	1.3	<0.02	<0.05	<0.01	<0.001	<0.10	<0.05	430	1,100
MW-14	11/03/98	<0.1	<0.1	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	420	1,100
MW-15	11/03/98	--	--	--	--	--	--	--	--	2,300	4,700
MW-16	11/03/98	--	--	--	--	--	--	--	--	2,000	3,700
MW-17	11/03/98	--	--	--	--	--	--	--	--	6,000	11,000
MW-18	11/03/98	--	--	--	--	--	--	--	--	5,700	9,500

Notes: All analysis performed by Trace Analysis, Inc., Lubbock, Texas

1. mg/L: Denotes analytic concentration in milligrams per liter
2. <: Denotes analytic concentration below test method detection limit
3. --: No data available

Table 4: (continued) Summary of Dissolved Metals and General Inorganic Analysis of Groundwater Samples
Texaco Exploration and Production, Inc., Eunice #1 (South) Gas Plant
Lea County, New Mexico

Well Number	Sample Date	Arsenic mg/L	Barium mg/L	Cadmium mg/L	Chromium mg/L	Lead mg/L	Mercury mg/L	Selenium mg/L	Silver mg/L	Chloride mg/L	TDS mg/L
TMW-1	6/02/97	<0.10	<0.20	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	460	1,300
TMW-2	6/02/97	<0.10	3	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	730	2,000
TMW-3	6/02/97	<0.10	1.0	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	870	2,200
TMW-5	6/02/97	<0.10	0.9	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	4,300	8,100
TMW-6	6/02/97	<0.10	1.3	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	730	2,100
WW-1	8/26/96	<0.10	0.97	<0.02	<0.05	<0.10	<0.001	<0.10	<0.01	--	--
	6/02/97	<0.10	0.6	<0.02	<0.05	<0.10	<0.001	<0.10	1.4	4,500	6,300
WW-2	8/26/96	<0.10	0.49	<0.02	<0.05	<0.10	<0.001	<0.10	<0.01	--	--
	6/03/97	<0.10	0.6	<0.02	<0.05	<0.10	<0.001	<0.01	<0.05	200	550
WW-3	8/26/96	<0.10	2	<0.02	<0.05	<0.10	<0.001	<0.10	<0.01	--	--
	6/03/97	<0.10	0.8	<0.02	<0.05	<0.10	<0.001	<0.01	<0.05	120	420
WW-4	8/22/96	<0.10	<0.20	<0.02	<0.05	<0.10	<0.001	<0.10	<0.01	--	--
WW-5	6/03/97	<0.10	0.3	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	1,200	2,900
WW-6	6/03/97	<0.10	0.3	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	970	2,500
WW-7	6/03/97	<0.10	0.3	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	490	1,400
*MW-3A	5/30/97	<0.10	<0.20	<0.02	<0.05	<0.10	<0.001	<0.10	<0.05	390	1,300

Notes: All analysis performed by Trace Analysis, Inc., Lubbock, Texas

1. mg/L: Denotes analytic concentration in milligrams per liter
2. <: Denotes analytic concentration below test method detection limit
3. --: No data available
4. *: Denotes duplicate sample of MW-3 (5/30/97)

FIGURES

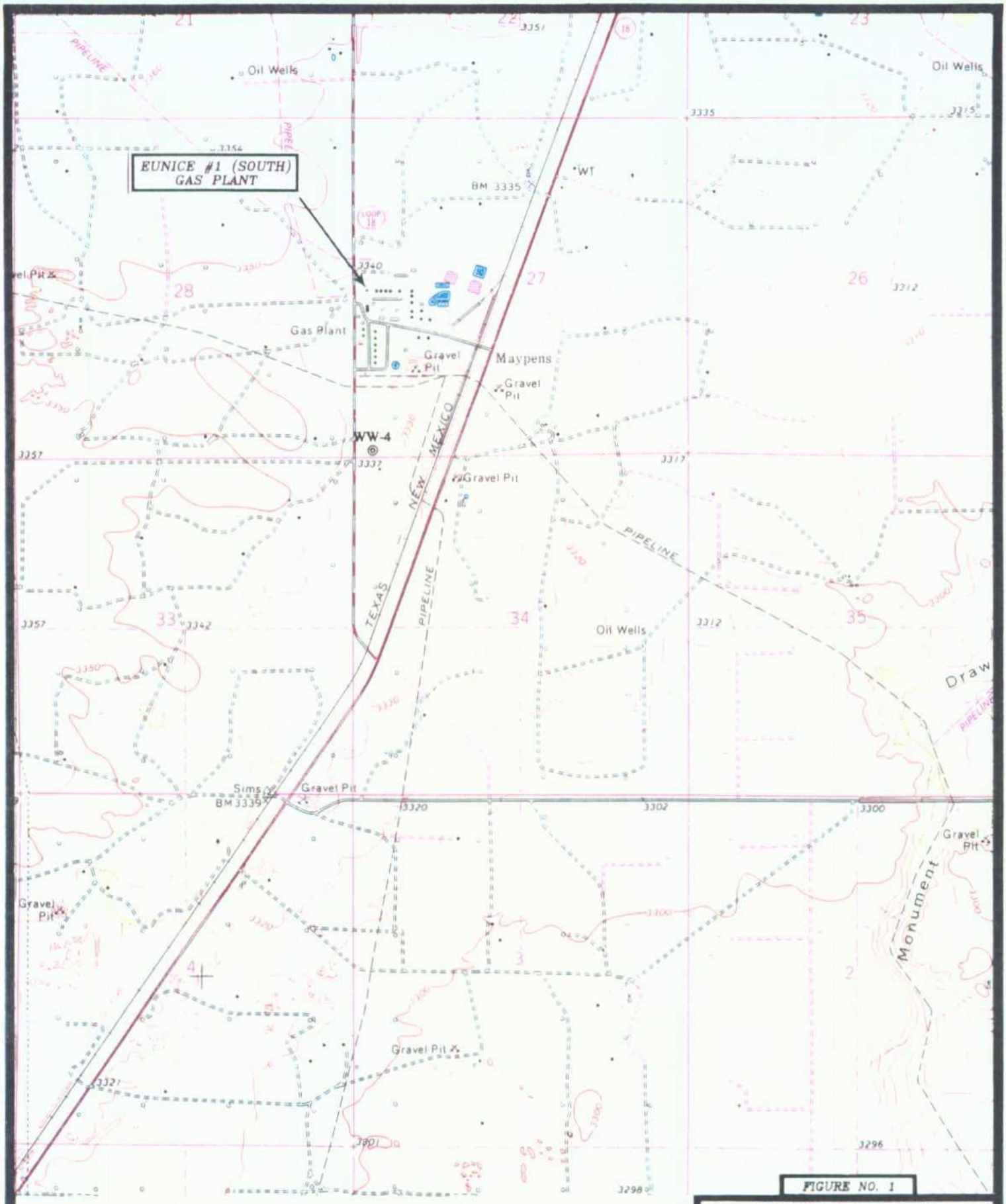


FIGURE NO. 1

LEA COUNTY, NEW MEXCIO

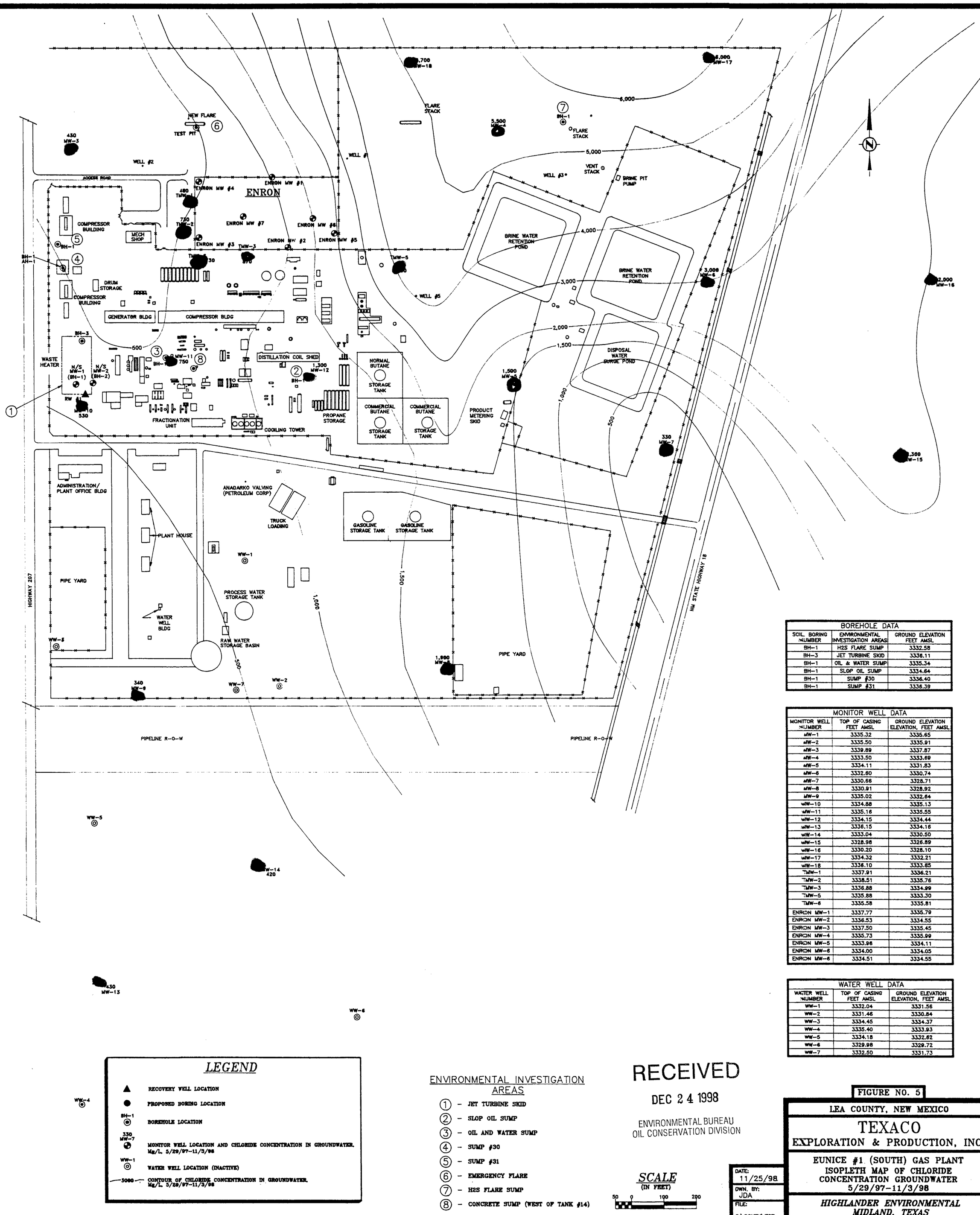
TEXACO
EXPLORATION & PRODUCTION

TOPOGRAPHIC
MAP

HIGHLANDER ENVIRONMENTAL
MIDLAND, TEXAS

TAKEN FROM U.S.G.S.
EUNICE, NM
7.5' QUADRANGLE

SCALE: 1"=2,000'



BOREHOLE DATA		
SOIL BORING NUMBER	ENVIRONMENTAL INVESTIGATION AREAS	GROUND ELEVATION FEET AMSL
BH-1	H2S FLARE SUMP	3332.58
BH-3	JET TURBINE SKID	3336.11
BH-1	OIL & WATER SUMP	3335.34
BH-1	SLOP OIL SUMP	3334.64
BH-1	SUMP #30	3336.40
BH-1	SUMP #31	3336.39

MONITOR WELL DATA		
MONITOR WELL NUMBER	TOP OF CASING FEET AMSL	GROUND ELEVATION ELEVATION, FEET AMSL
MW-1	3335.32	3335.65
MW-2	3335.50	3335.91
MW-3	3339.89	3337.87
MW-4	3333.50	3333.69
MW-5	3334.11	3331.83
MW-6	3332.60	3330.74
MW-7	3330.66	3328.71
MW-8	3330.91	3328.92
MW-9	3335.02	3332.64
MW-10	3334.88	3335.13
MW-11	3335.16	3335.55
MW-12	3334.15	3334.44
MW-13	3336.15	3334.16
MW-14	3333.04	3330.50
MW-15	3328.98	3326.89
MW-16	3330.20	3328.10
MW-17	3334.32	3332.21
MW-18	3336.10	3333.85
TMW-1	3337.91	3336.21
TMW-2	3338.51	3335.76
TMW-3	3336.88	3334.99
TMW-5	3335.88	3333.30
TMW-6	3335.58	3335.81
ENRON MW-1	3337.77	3335.79
ENRON MW-2	3336.53	3334.55
ENRON MW-3	3337.50	3335.45
ENRON MW-4	3335.73	3335.99
ENRON MW-5	3333.96	3334.11
ENRON MW-6	3334.00	3334.05
ENRON MW-6	3334.51	3334.55

WATER WELL DATA		
WATER WELL NUMBER	TOP OF CASING FEET AMSL	GROUND ELEVATION ELEVATION, FEET AMSL
WW-1	3332.04	3331.56
WW-2	3331.46	3330.84
WW-3	3334.45	3334.37
WW-4	3335.40	3333.93
WW-5	3334.18	3332.62
WW-6	3329.98	3329.72
WW-7	3332.50	3331.73

LEGEND

- RECOVERY WELL LOCATION
- PROPOSED BORING LOCATION
- BH-1 — BOREHOLE LOCATION
- 330 MW-7 — MONITOR WELL LOCATION AND CHLORIDE CONCENTRATION IN GROUNDWATER, Mg/L. 5/29/97-11/3/98
- WW-1 — WATER WELL LOCATION (INACTIVE)
- —3000— CONTOUR OF CHLORIDE CONCENTRATION IN GROUNDWATER, Mg/L. 5/29/97-11/3/98

ENVIRONMENTAL INVESTIGATION AREAS

1. JET TURBINE SKID
2. SLOP OIL SUMP
3. OIL AND WATER SUMP
4. SUMP #30
5. SUMP #31
6. EMERGENCY FLARE
7. H2S FLARE SUMP
8. CONCRETE SUMP (WEST OF TANK #14)

SCALE (IN FEET)
50 0 100 200

RECEIVED
DEC 24 1998
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

DATE: 11/25/98
DWN. BY: JDA
FILE: C:\SOUTH\787

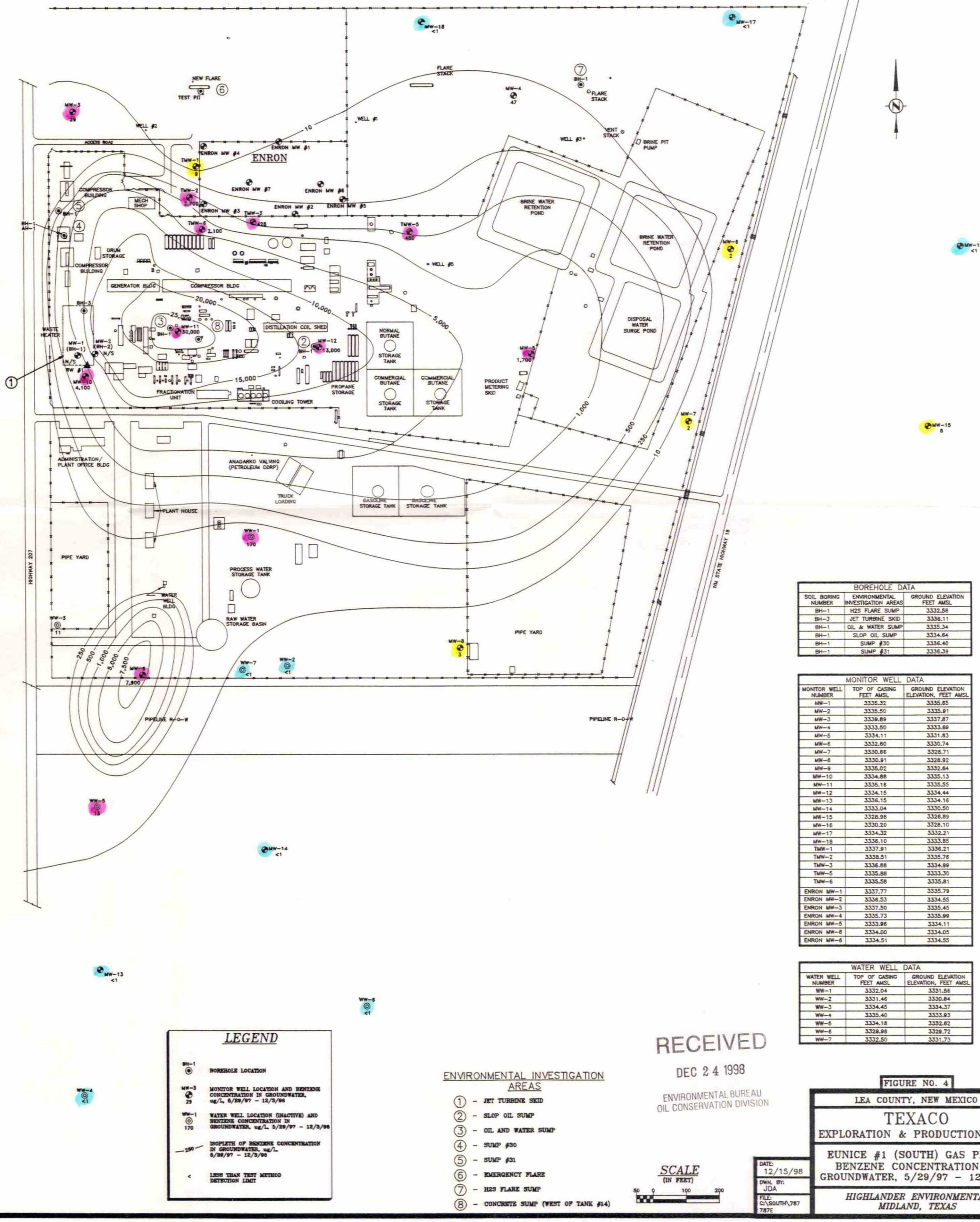
FIGURE NO. 5

LEA COUNTY, NEW MEXICO

TEXACO
EXPLORATION & PRODUCTION, INC.

EUNICE #1 (SOUTH) GAS PLANT
ISOPLETH MAP OF CHLORIDE
CONCENTRATION GROUNDWATER
5/29/97-11/3/98

HIGHLANDER ENVIRONMENTAL
MIDLAND, TEXAS



BOREHOLE DATA		
SOIL BORING NUMBER	ENVIRONMENTAL INVESTIGATION AREAS	GROUND ELEVATION FEET AMSL
BH-1	H2S FLARE SUMP	3332.58
BH-3	JET TURBINE SKID	3336.11
BH-1	OIL & WATER SUMP	3335.34
BH-1	SLOP OIL SUMP	3334.64
BH-1	SUMP #30	3336.40
BH-1	SUMP #31	3336.39

MONITOR WELL DATA		
MONITOR WELL NUMBER	TOP OF CASING FEET AMSL	GROUND ELEVATION ELEVATION, FEET AMSL
MW-1	3335.32	3335.65
MW-2	3335.50	3335.91
MW-3	3339.89	3337.87
MW-4	3333.50	3333.69
MW-5	3334.11	3331.83
MW-6	3332.60	3330.74
MW-7	3330.66	3328.71
MW-8	3330.91	3328.92
MW-9	3335.02	3332.64
MW-10	3334.88	3335.13
MW-11	3335.16	3335.55
MW-12	3334.15	3334.44
MW-13	3336.15	3334.16
MW-14	3333.04	3330.50
MW-15	3328.98	3326.89
MW-16	3330.20	3328.10
MW-17	3334.32	3332.21
MW-18	3336.10	3333.85
TMW-1	3337.91	3336.21
TMW-2	3338.51	3335.76
TMW-3	3336.88	3334.99
TMW-5	3335.88	3333.30
TMW-6	3335.58	3335.81
ENRON MW-1	3337.77	3335.79
ENRON MW-2	3336.53	3334.55
ENRON MW-3	3337.50	3335.45
ENRON MW-4	3335.73	3335.99
ENRON MW-5	3333.96	3334.11
ENRON MW-6	3334.00	3334.05
ENRON MW-6	3334.51	3334.55

WATER WELL DATA		
WATER WELL NUMBER	TOP OF CASING FEET AMSL	GROUND ELEVATION ELEVATION, FEET AMSL
WW-1	3332.04	3331.56
WW-2	3331.46	3330.84
WW-3	3334.45	3334.37
WW-4	3335.40	3333.93
WW-5	3334.18	3332.62
WW-6	3329.98	3329.72
WW-7	3332.50	3331.73

LEGEND

- BH-1 ◉ — BOREHOLE LOCATION
- MW-3 ◔ 29 — MONITOR WELL LOCATION AND BENZENE CONCENTRATION IN GROUNDWATER, ug/L, 5/29/97 – 12/3/98
- WW-1 ◎ 170 — WATER WELL LOCATION (INACTIVE) AND BENZENE CONCENTRATION IN GROUNDWATER, ug/L, 5/29/97 – 12/3/98
- —250— ISOPLETH OF BENZENE CONCENTRATION IN GROUNDWATER, ug/L, 5/29/97 – 12/3/98
- < — LESS THAN TEST METHOD DETECTION LIMIT

ENVIRONMENTAL INVESTIGATION AREAS

1. JET TURBINE SKID
2. SLOP OIL SUMP
3. OIL AND WATER SUMP
4. SUMP #30
5. SUMP #31
6. EMERGENCY FLARE
7. H2S FLARE SUMP
8. CONCRETE SUMP (WEST OF TANK #14)

SCALE (IN FEET)

50 0 100 200

DATE: 12/15/98
DWN. BY: JDA
FILE: C:\SOUTH\787 787E

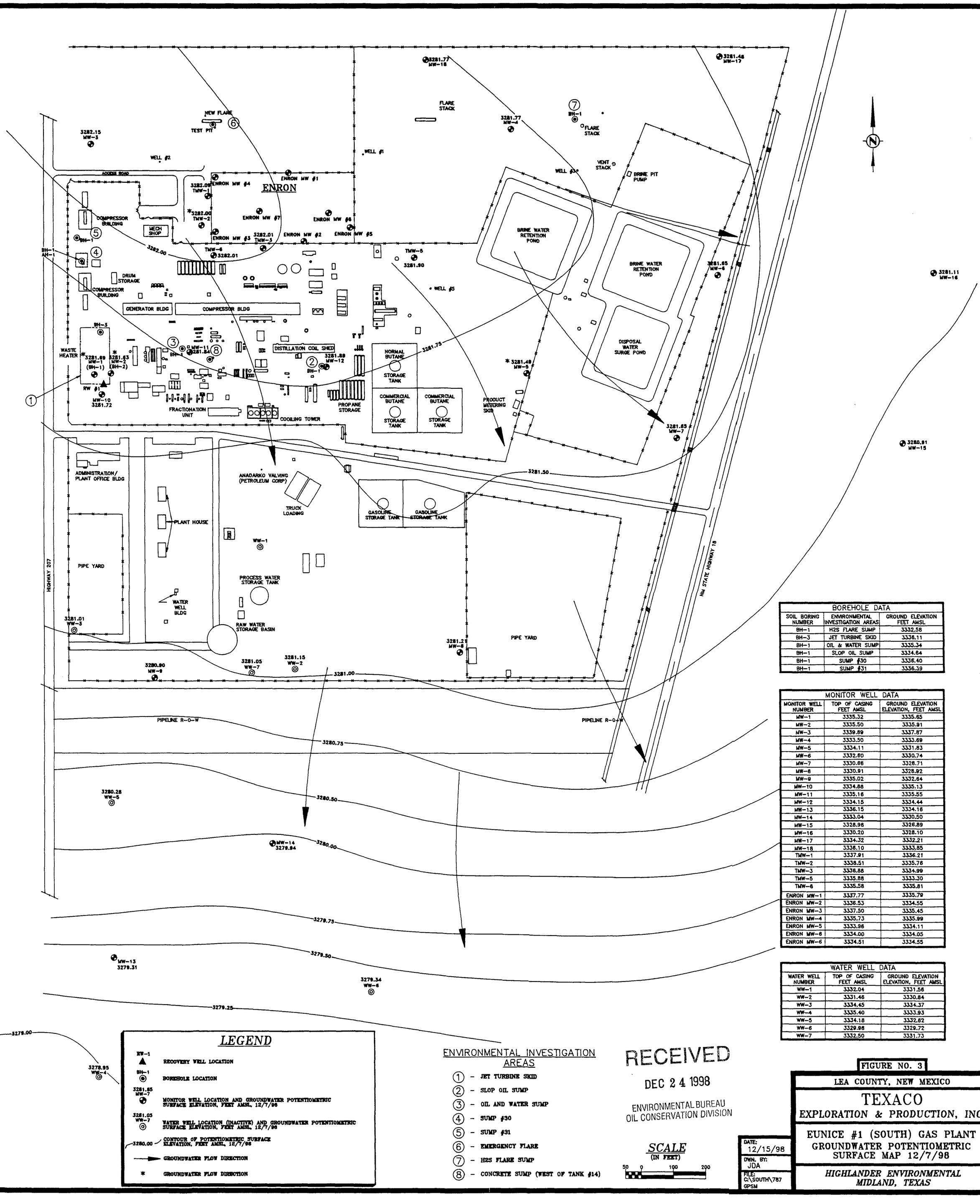
FIGURE NO. 4

LEA COUNTY, NEW MEXICO

TEXACO
EXPLORATION & PRODUCTION, INC.

EUNICE #1 (SOUTH) GAS PLANT BENZENE CONCENTRATION IN GROUNDWATER, 5/29/97 – 12/3/98

HIGHLANDER ENVIRONMENTAL MIDLAND, TEXAS



BOREHOLE DATA		
SOIL BORING NUMBER	ENVIRONMENTAL INVESTIGATION AREAS	GROUND ELEVATION FEET AMSL
BH-1	H2S FLARE SUMP	3332.58
BH-3	JET TURBINE SKID	3336.11
BH-1	OIL & WATER SUMP	3335.34
BH-1	SLOP OIL SUMP	3334.64
BH-1	SUMP #30	3336.40
BH-1	SUMP #31	3336.39

MONITOR WELL DATA		
MONITOR WELL NUMBER	TOP OF CASING FEET AMSL	GROUND ELEVATION ELEVATION, FEET AMSL
MW-1	3335.32	3335.65
MW-2	3335.50	3335.91
MW-3	3339.89	3337.87
MW-4	3333.50	3333.69
MW-5	3334.11	3331.83
MW-6	3332.60	3330.74
MW-7	3330.66	3328.71
MW-8	3330.91	3328.92
MW-9	3335.02	3332.64
MW-10	3334.88	3335.13
MW-11	3335.16	3335.55
MW-12	3334.15	3334.44
MW-13	3336.15	3334.16
MW-14	3333.04	3330.50
MW-15	3328.98	3326.89
MW-16	3330.20	3328.10
MW-17	3334.32	3332.21
MW-18	3336.10	3333.85
TMW-1	3337.91	3336.21
TMW-2	3338.51	3335.76
TMW-3	3336.88	3334.99
TMW-5	3335.88	3333.30
TMW-6	3335.58	3335.81
ENRON MW-1	3337.77	3335.79
ENRON MW-2	3336.53	3334.55
ENRON MW-3	3337.50	3335.45
ENRON MW-4	3335.73	3335.99
ENRON MW-5	3333.96	3334.11
ENRON MW-6	3334.00	3334.05
ENRON MW-6	3334.51	3334.55

WATER WELL DATA		
WATER WELL NUMBER	TOP OF CASING FEET AMSL	GROUND ELEVATION ELEVATION, FEET AMSL
WW-1	3332.04	3331.56
WW-2	3331.48	3330.84
WW-3	3334.45	3334.37
WW-4	3335.40	3333.93
WW-5	3334.18	3332.82
WW-6	3329.86	3329.72
WW-7	3332.50	3331.73

LEGEND

- RW-1 ▲ — RECOVERY WELL LOCATION
- BH-1 ◉ — BOREHOLE LOCATION
- 3281.85 MW-7 ◓ — MONITOR WELL LOCATION AND GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET AMSL, 12/7/98
- 3281.05 WW-7 ◎ — WATER WELL LOCATION (INACTIVE) AND GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, FEET AMSL, 12/7/98
- 3280.00 — CONTOUR OF POTENTIOMETRIC SURFACE ELEVATION, FEET AMSL, 12/7/98
- → — GROUNDWATER FLOW DIRECTION
- * — GROUNDWATER FLOW DIRECTION

ENVIRONMENTAL INVESTIGATION AREAS

1. JET TURBINE SKID
2. SLOP OIL SUMP
3. OIL AND WATER SUMP
4. SUMP #30
5. SUMP #31
6. EMERGENCY FLARE
7. H2S FLARE SUMP
8. CONCRETE SUMP (WEST OF TANK #14)

SCALE (IN FEET)
50 0 100 200

DATE: 12/15/98
DWN. BY: JDA
FILE: C:\SOUTH\787 GPSM

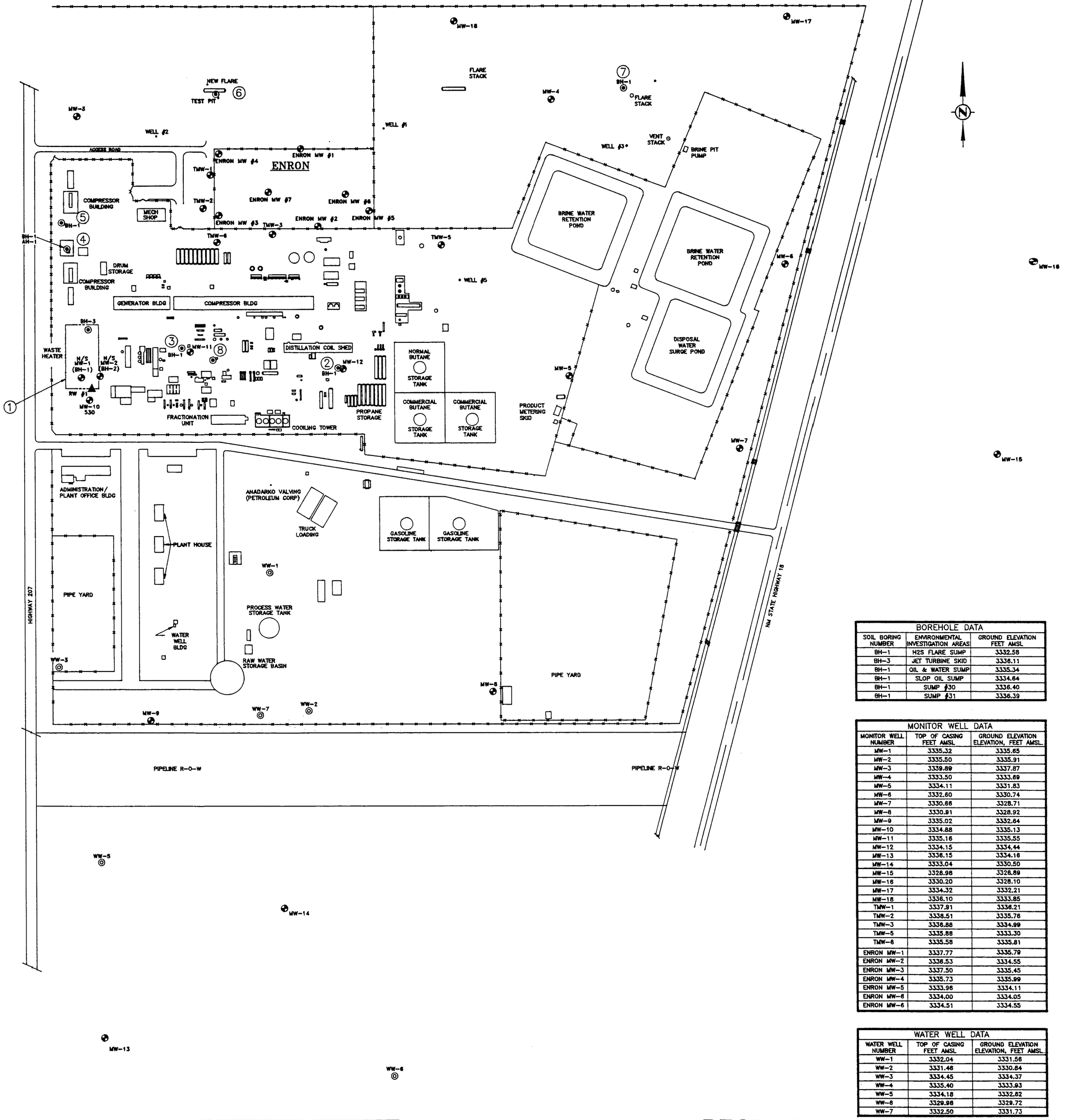
FIGURE NO. 3

LEA COUNTY, NEW MEXICO

TEXACO
EXPLORATION & PRODUCTION, INC.

EUNICE #1 (SOUTH) GAS PLANT GROUNDWATER POTENTIOMETRIC SURFACE MAP 12/7/98

HIGHLANDER ENVIRONMENTAL MIDLAND, TEXAS



BOREHOLE DATA

SOIL BORING NUMBER	ENVIRONMENTAL INVESTIGATION AREAS	GROUND ELEVATION FEET AMSL
BH-1	H2S FLARE SUMP	3332.58
BH-3	JET TURBINE SKID	3336.11
BH-1	OIL & WATER SUMP	3335.34
BH-1	SLOP OIL SUMP	3334.64
BH-1	SUMP #30	3336.40
BH-1	SUMP #31	3336.39

MONITOR WELL DATA

MONITOR WELL NUMBER	TOP OF CASING FEET AMSL	GROUND ELEVATION ELEVATION, FEET AMSL
MW-1	3335.32	3335.65
MW-2	3335.50	3335.91
MW-3	3339.89	3337.87
MW-4	3333.50	3333.69
MW-5	3334.11	3331.83
MW-6	3332.60	3330.74
MW-7	3330.66	3328.71
MW-8	3330.91	3328.92
MW-9	3335.02	3332.64
MW-10	3334.88	3335.13
MW-11	3335.16	3335.55
MW-12	3334.15	3334.44
MW-13	3336.15	3334.16
MW-14	3333.04	3330.50
MW-15	3328.98	3326.89
MW-16	3330.20	3328.10
MW-17	3334.32	3332.21
MW-18	3336.10	3333.85
TMW-1	3337.91	3336.21
TMW-2	3338.51	3335.78
TMW-3	3336.88	3334.99
TMW-5	3335.88	3333.30
TMW-6	3335.58	3335.81
ENRON MW-1	3337.77	3335.79
ENRON MW-2	3336.53	3334.55
ENRON MW-3	3337.50	3335.45
ENRON MW-4	3335.73	3335.99
ENRON MW-5	3333.96	3334.11
ENRON MW-6	3334.00	3334.05
ENRON MW-6	3334.51	3334.55

WATER WELL DATA

WATER WELL NUMBER	TOP OF CASING FEET AMSL	GROUND ELEVATION ELEVATION, FEET AMSL
WW-1	3332.04	3331.56
WW-2	3331.46	3330.84
WW-3	3334.45	3334.37
WW-4	3335.40	3333.93
WW-5	3334.18	3332.82
WW-6	3329.98	3329.72
WW-7	3332.50	3331.73

LEGEND

- ▲ RECOVERY WELL LOCATION
- BH-1 ◉ BOREHOLE LOCATION
- MW-7 ⊕ MONITOR WELL LOCATION
- WW-1 ◎ WATER WELL LOCATION (INACTIVE)

ENVIRONMENTAL INVESTIGATION AREAS

1. JET TURBINE SKID
2. SLOP OIL SUMP
3. OIL AND WATER SUMP
4. SUMP #30
5. SUMP #31
6. EMERGENCY FLARE
7. H2S FLARE SUMP
8. CONCRETE SUMP (WEST OF TANK #14)

SCALE (IN FEET)
50 0 100 200

FIGURE NO. 2

LEA COUNTY, NEW MEXICO

TEXACO
EXPLORATION & PRODUCTION, INC.

EUNICE #1 (SOUTH) GAS PLANT
SITE MAP

HIGHLANDER ENVIRONMENTAL
MIDLAND, TEXAS

DATE: 11/25/98
DWN. BY: JDA
FILE: C:\SOUTH\787 SITE-MAP

APPENDIX A

Sample Logs

SAMPLE LOG

Boring/Well: MW-13
Site Location: Texaco - Eunice # 1 (South) Gas Plant
Location: Lea County, New Mexico
Total Depth: 68'
Date Installed: 10/20/98

DEPTH (Ft)	SAMPLE DESCRIPTION
0-10	**Sand**, brown and tan, fine grained, traces of white caliche, dense
10-20	**Sand**, tan, fine grained, loose, layers of cemented sandstone
20-30	**Sand**, tan, fine grained, loose, trace of cemented sandstone layers
30-40	**Sand**, tan, fine grained, loose, layers of cemented sandstone, dense
40-50	**Sand**, tan, fine grained, loose, trace of cemented sandstone (layers)
60-68	**Sand**, tan, fine grained, loose, trace of cemented sandstone (layers)
TD: 68'	

SAMPLE LOG

Boring/Well: MW-14
Site Location: Texaco - Eunice # 1 (South) Gas Plant
Location: Lea County, New Mexico
Total Depth: 65'
Date Installed: 10/21/98

DEPTH (Ft)	SAMPLE DESCRIPTION
0-10	**Sand**, brown and tan, fine grained, white caliche encountered at 3.5'
10-20	**Sand**, tan, fine grained, loose, trace of caliche, thin layers of cemented sandstone
20-30	**Sand**, tan, fine grained, loose, thin layers of cemented sandstone
30-40	**Sand**, tan, fine grained, loose, layers of cemented sandstone, dense
40-50	**Sand**, tan, fine grained, loose, layers of cemented sandstone
60-65	**Sand**, tan, fine grained, loose, trace of cemented sandstone (layers)
TD: 65'	

SAMPLE LOG

Boring/Well: MW-15
Site Location: Texaco - Eunice # 1 (South) Gas Plant
Location: Lea County, New Mexico
Total Depth: 68'
Date Installed: 10/26/98

DEPTH (Ft)	SAMPLE DESCRIPTION
0-10	**Silty Sand**, 10YR 5/3 to 5/4. yellowish brown to brown, fine grained from 0 to 2 feet **Caliche**, 10YR 7/4, very pale brown , dense from 2 to 10 feet
10-20	**Caliche**, 10YR 7/4, very pale brown, dense from 10 to 12 feet **Sandstone**, 5YR 5/6, yellowish red, fine grained quartz, well sorted, moderately well cemented below 12 feet
20-30	**Sandstone**, 10YR 5/6, yellowish red, fine grained quartz, moderate to poorly sorted, poorly to well cemented
30-40	**Sandstone**, 10YR 5/6, yellowish red, fine grained, moderately to poorly sorted, moderately well cemented
40-50	**Sandstone**, 10YR 5/6, yellowish red, fine grained quartz, poorly sorted, moderately well cemented
50-60	**Sandstone**, 10YR 5/6, yellowish red, fine grained quartz, poorly sorted, moderately well cemented
60 - 68	**Gravelly Sand**, 5YR 5/6 to 2.5YR 4/6, yellowish red to red, coarse to very coarse grained quartz and gravel from 60 to 62 feet **Shale**, 2.5 YR 4/6, red, silty, soft below 62 feet
TD: 68'	

SAMPLE LOG

Boring/Well: MW-16
Site Location: Texaco - Eunice # 1 (South) Gas Plant
Location: Lea County, New Mexico
Total Depth: 68'
Date Installed: 10/26/98

DEPTH (Ft)	SAMPLE DESCRIPTION
0-10	**Silty Sand**, 10YR 5/3 to 5/4, yellowish brown to brown, fine grained quartz, from 0 to 2 feet **Caliche**, 10YR 7/4, very pale brown , dense, from 2 to 10 feet
10-20	**Sandstone**, 7.5YR 6/6 to 5YR 5/6, reddish yellow to yellowish red, very fine grained quartz, moderate to poorly sorted, moderately hard
20-30	**Sandstone**, 7.5YR 6/6 to 5YR 5/6, reddish yellow to yellowish red, very fine grained quartz, moderate to poorly sorted, moderately hard
30-40	**Sandstone**, 7.5YR 6/6 to 5YR 5/6, reddish yellow to yellowish red, very fine grained quartz, moderate to poorly sorted, moderately hard, from 30 to 37 feet **Sand**, 5YR 6/6, reddish yellow, very fine grained quartz, moderately well sorted, loose, from 38 to 40 feet
40-50	**Sand**, 5YR 6/6, reddish yellow, very fine grained quartz, moderately well sorted, loose
50-60	**Sand**, 5YR 6/6, reddish yellow, very fine grained quartz, moderately well sorted, loose
60-68	**Sand**, 5YR 6/6, reddish yellow, very fine grained quartz, moderately well sorted, loose, from 60 to 62 feet **Shale**, 2.5YR 4/6, red, silty soft below 62 feet
TD: 68'	

SAMPLE LOG

Boring/Well: MW-17
Site Location: Texaco - Eunice # 1 (South) Gas Plant
Location: Lea County, New Mexico
Total Depth: 68'
Date Installed: 10/26/98

DEPTH (Ft)	SAMPLE DESCRIPTION
0-10	**Sand, 10YR 5/3 to 5/4,** brown to yellowish brown, very fine grained quartz, silty, from 0 to 3 feet **Caliche**, 10YR 7/4, pale brown , dense, from 2 to 10 feet, sandy below 8 feet
10-20	**Caliche**, 10YR 7/4, pale brown , sandy, dense, from 10 to 11 feet **Sandstone**, 7.5YR 6/6 to 5YR 5/6, reddish yellow to yellowish red, very fine grained quartz, moderately well sorted, moderately to poorly cemented below 11 feet
20-30	**Sandstone**, 7.5YR 6/6 to 5YR 5/6, reddish yellow to yellowish red, very fine grained quartz, moderately well sorted, moderately to poorly cemented, from 20 to 23 feet **Sand**, 5YR 6/6, reddish yellow, very fine grained quartz, moderate to poorly sorted, loose below 23 feet
30-40	**Sand**, 5YR 6/6, reddish yellow, very fine grained quartz, moderate to poorly sorted, loose
40-50	**Sand**, 5YR 6/6, reddish yellow, very fine grained quartz, moderate to poorly sorted, loose
50-60	**Sand**, 5YR 6/6, reddish yellow, very fine grained quartz, moderate to poorly sorted, loose
60-68	**Sand**, 5YR 6/6, reddish yellow, very fine grained quartz, moderate to poorly sorted, loose
TD: 68'	

SAMPLE LOG

Boring/Well: MW-18
Site Location: Texaco - Eunice # 1 (South) Gas Plant
Location: Lea County, New Mexico
Total Depth: 68'
Date Installed: 10/27/98

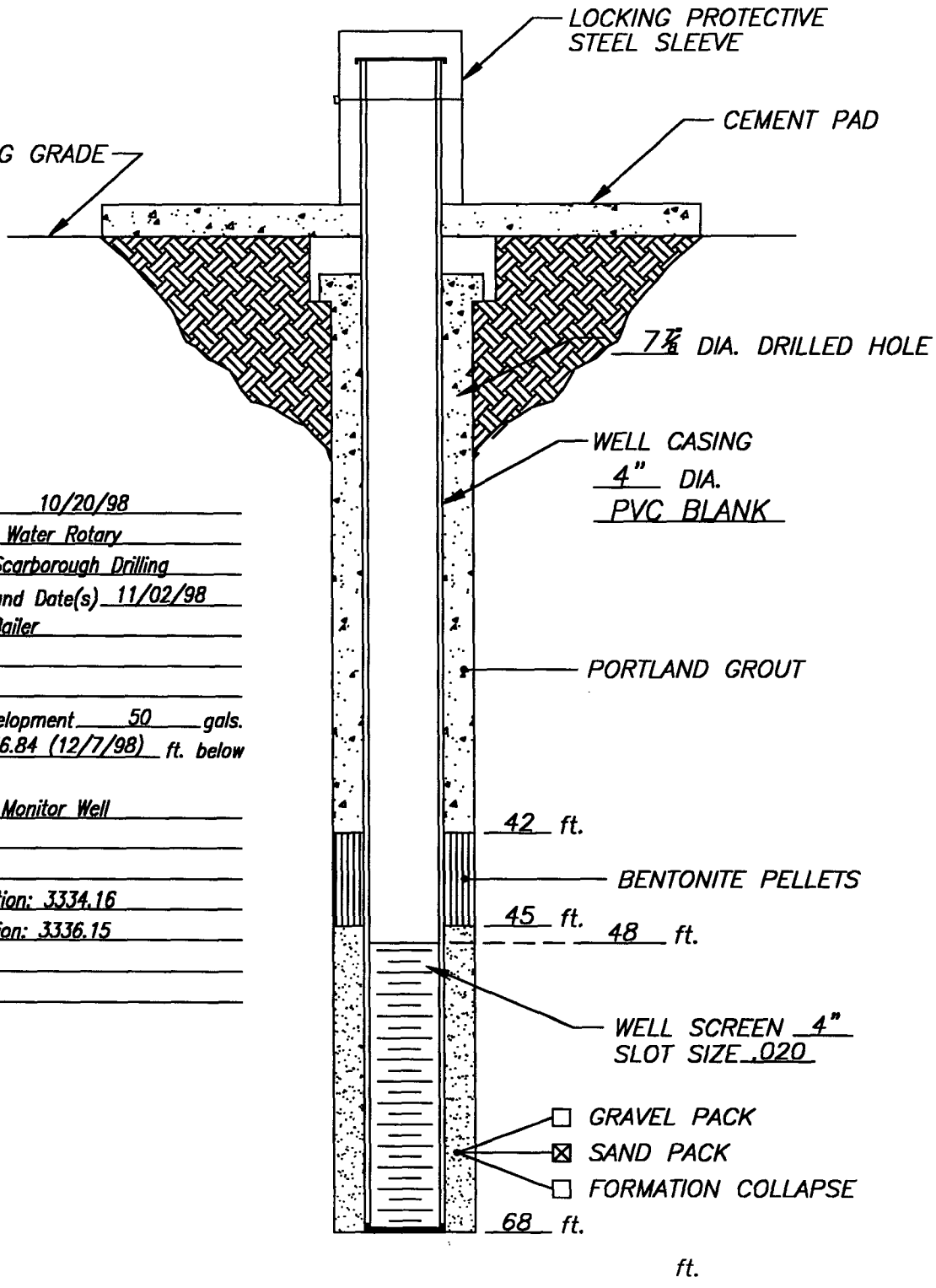
DEPTH (Ft)	SAMPLE DESCRIPTION
0-10	**Sand**, 10YR 5/3 to 5/4, brown to yellowish brown, very fine grained quartz, poorly sorted, round, from 0 to 0.5 feet **Caliche**, 10YR 7/4,very pale brown , indurated, hard, from 0.5 to 9 feet **Sandstone**, 7.5YR 5/6 to 6/6, yellowish red, very fine grained quartz, poorly sorted, moderately to poorly cemented below 9 feet
10-20	**Sandstone**, 7.5YR 5/6 to 6/6, yellowish red, very fine grained quartz, poorly sorted, moderately to poorly cemented
20-30	**Sand**, 5YR 5/6 to 6/6, reddish yellow to yellowish red, , very fine to fine grained quartz, poorly sorted, loose
30-40	**Sand**, 5YR 5/6 to 6/6, reddish yellow to yellowish red, , very fine to fine grained quartz, poorly sorted, loose
40-50	**Sand**, 5YR 5/6 to 6/6, reddish yellow to yellowish red, , very fine to fine grained quartz, poorly sorted, loose, moderately well cemented sandstone stringers below 40 feet
50-60	**Sand**, 5YR 5/6 to 6/6, reddish yellow to yellowish red, , very fine to fine grained quartz, poorly sorted, loose, moderately well cemented sandstone stringers
60-68	**Sand**, 5YR 5/6 to 6/6, reddish yellow to yellowish red, , very fine to fine grained quartz, poorly sorted, loose, moderately well cemented sandstone stringers
TD: 68'	

APPENDIX B

APPENDIX B

Well Completion Records

WELL CONSTRUCTION LOG



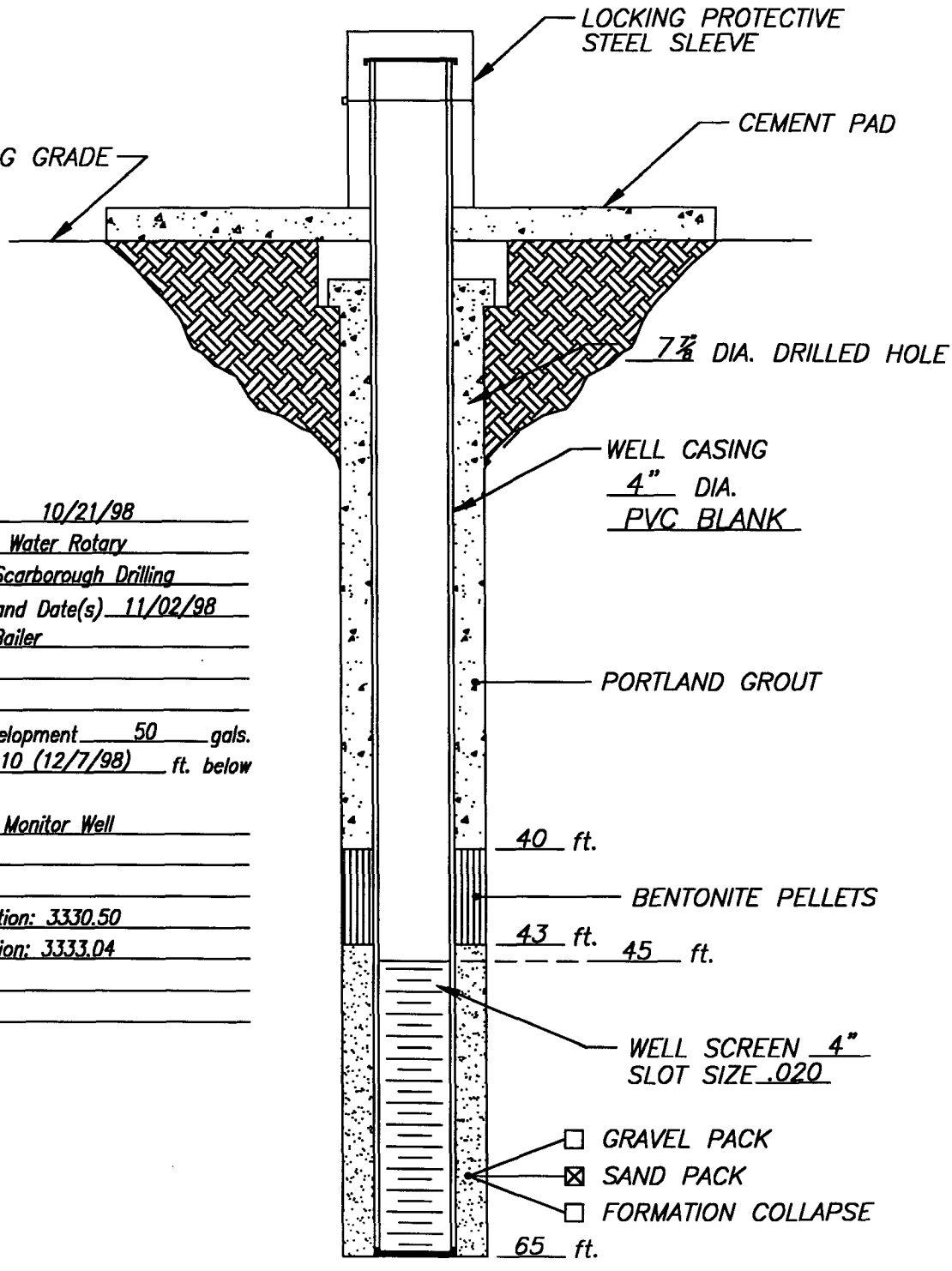
Installation Date(s) 10/20/98
Drilling Method Water Rotary
Drilling Contractor Scarborough Drilling
Development Technique(s) and Date(s) 11/02/98
Rig Bailer

Water Removed During Development 50 gals.
Static Depth to Water 56.84 (12/7/98) ft. below Ground Level
Well Purpose Monitor Well

Remarks
Ground Elevation: 3334.16
T.O.C. Elevation: 3336.15

DATE: 10/20/98	CLIENT: TEXACO EXPLORATION & PRODUCTION, INC.	WELL NO.
Highlander Environmental	PROJECT: EUNICE #2 (SOUTH) PLANT	MW-13
	LOCATION: LEA COUNTY, NEW MEXICO	

WELL CONSTRUCTION LOG



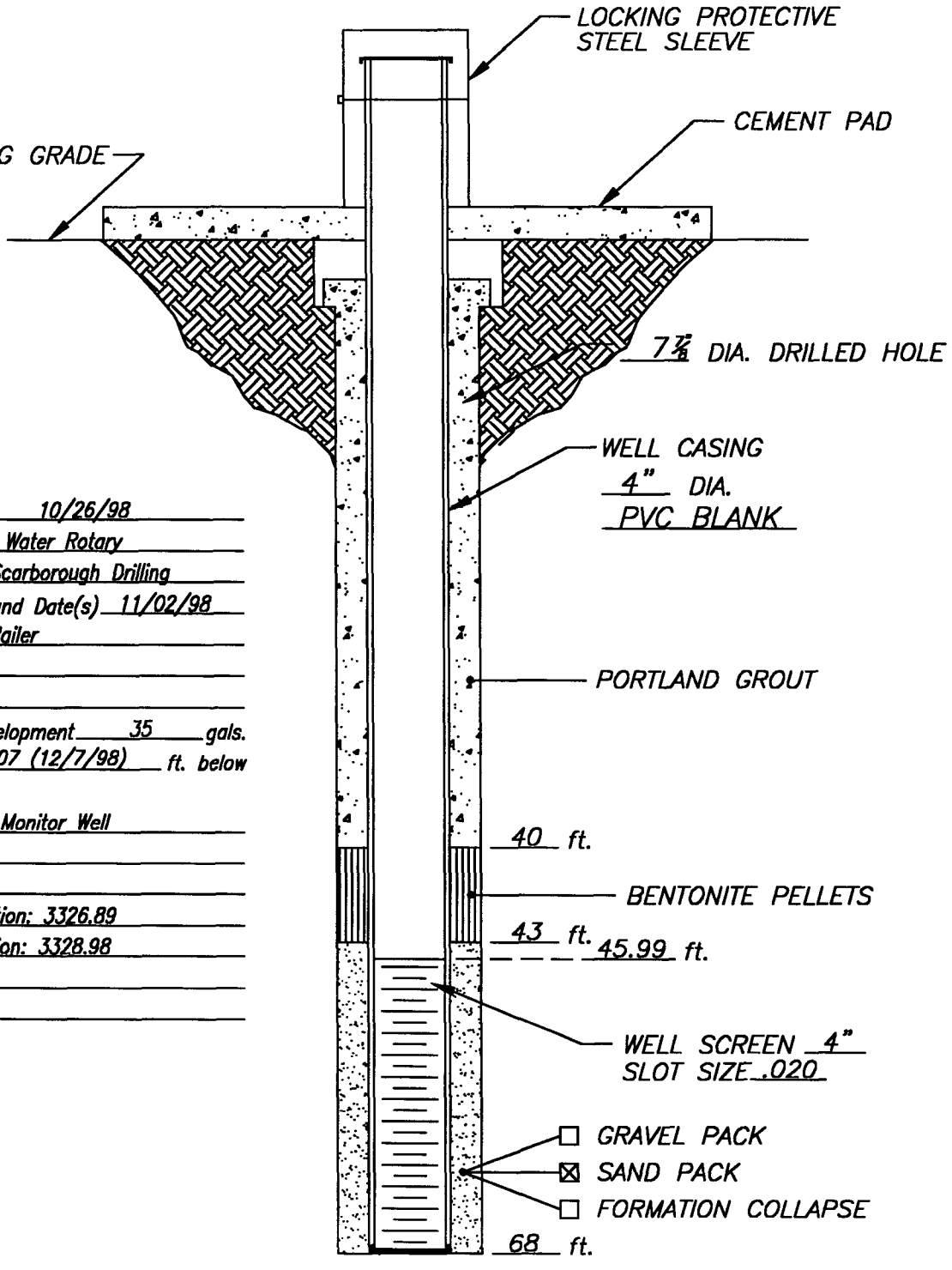
Installation Date(s) 10/21/98
Drilling Method Water Rotary
Drilling Contractor Scarborough Drilling
Development Technique(s) and Date(s) 11/02/98
Rig Bailer

Water Removed During Development 50 gals.
Static Depth to Water 53.10 (12/7/98) ft. below Ground Level
Well Purpose Monitor Well

Remarks
Ground Elevation: 3330.50
T.O.C. Elevation: 3333.04

DATE: 10/21/98	CLIENT: *TEXACO EXPLORATION & PRODUCTION, INC.*	WELL NO.
Highlander Environmental	PROJECT: *EUNICE #2 (SOUTH) PLANT*	MW-14
	LOCATION: *LEA COUNTY, NEW MEXICO*	

WELL CONSTRUCTION LOG



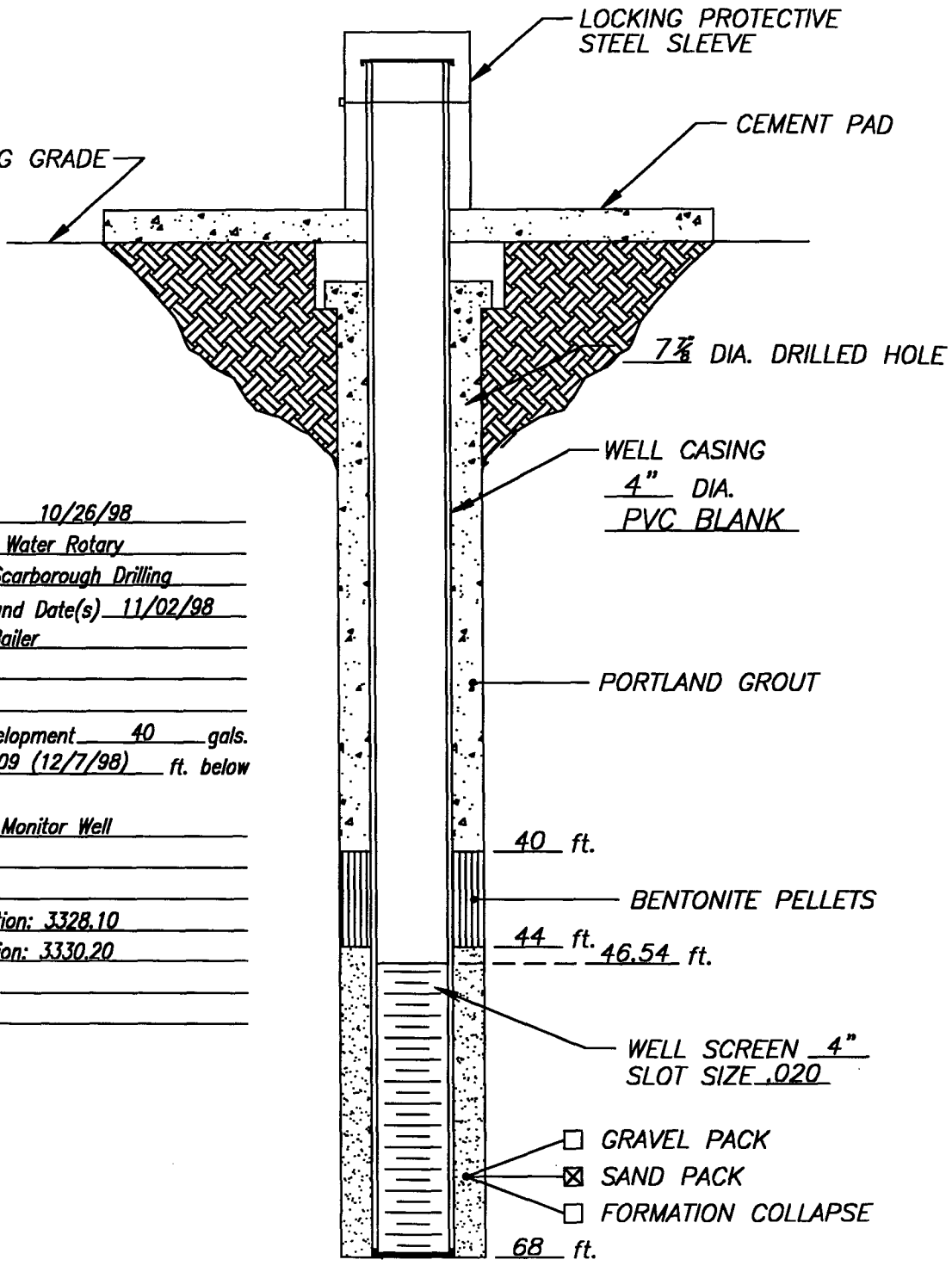
Installation Date(s) 10/26/98
Drilling Method Water Rotary
Drilling Contractor Scarborough Drilling
Development Technique(s) and Date(s) 11/02/98
Rig Bailer

Water Removed During Development 35 gals.
Static Depth to Water 48.07 (12/7/98) ft. below Ground Level
Well Purpose Monitor Well

Remarks
Ground Elevation: 3326.89
T.O.C. Elevation: 3328.98

DATE: 10/26/98	CLIENT: TEXACO EXPLORATION & PRODUCTION, INC.	WELL NO.
Highlander Environmental	PROJECT: EUNICE #2 (SOUTH) PLANT	MW-15
	LOCATION: LEA COUNTY, NEW MEXICO	

WELL CONSTRUCTION LOG



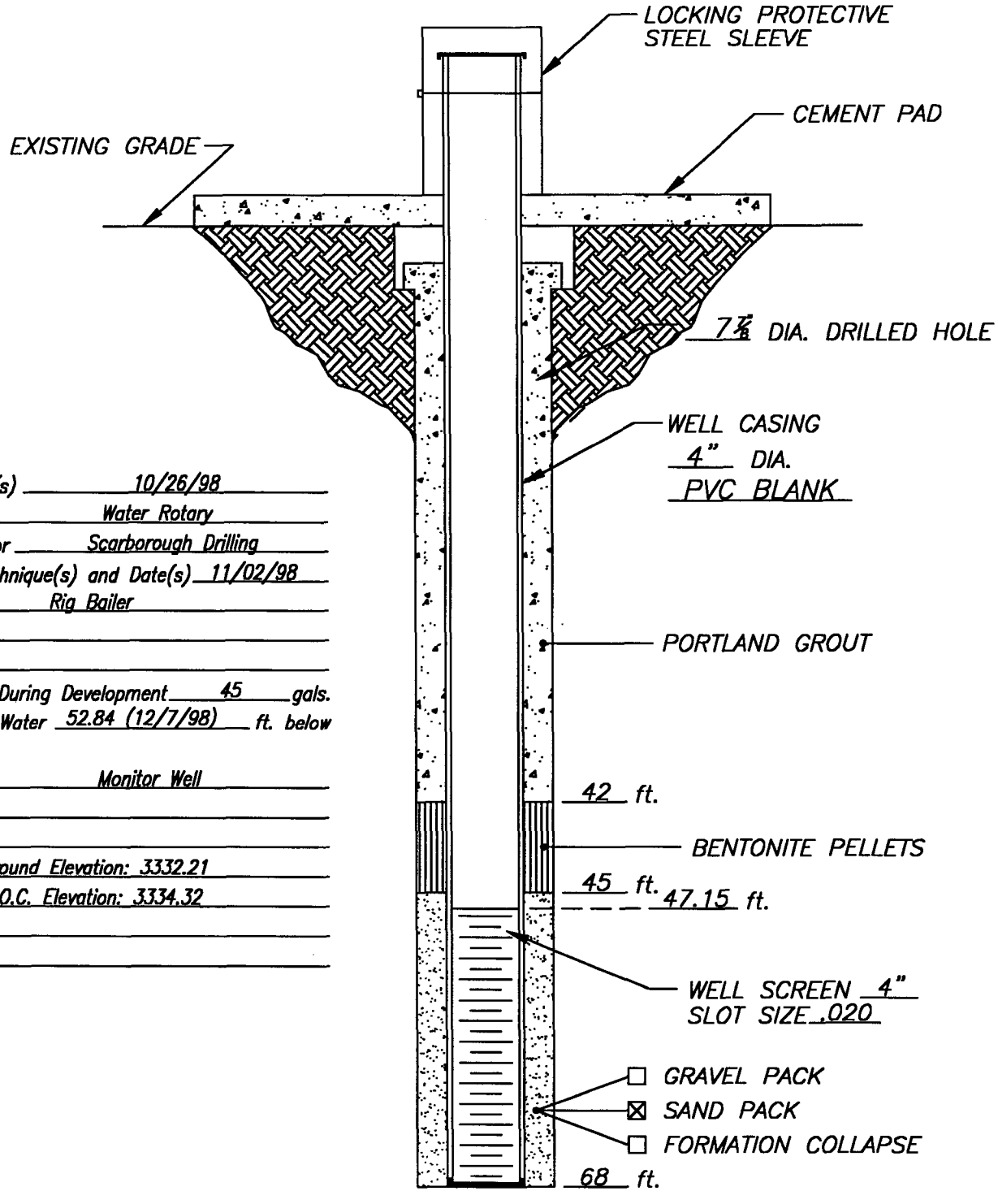
Installation Date(s) 10/26/98
Drilling Method Water Rotary
Drilling Contractor Scarborough Drilling
Development Technique(s) and Date(s) 11/02/98
Rig Bailer

Water Removed During Development 40 gals.
Static Depth to Water 49.09 (12/7/98) ft. below Ground Level
Well Purpose Monitor Well

Remarks
Ground Elevation: 3328.10
T.O.C. Elevation: 3330.20

DATE: 10/26/98 **Highlander Environmental**	CLIENT: TEXACO EXPLORATION & PRODUCTION, INC. PROJECT: EUNICE #2 (SOUTH) PLANT LOCATION: LEA COUNTY, NEW MEXICO	WELL NO. MW-16

WELL CONSTRUCTION LOG



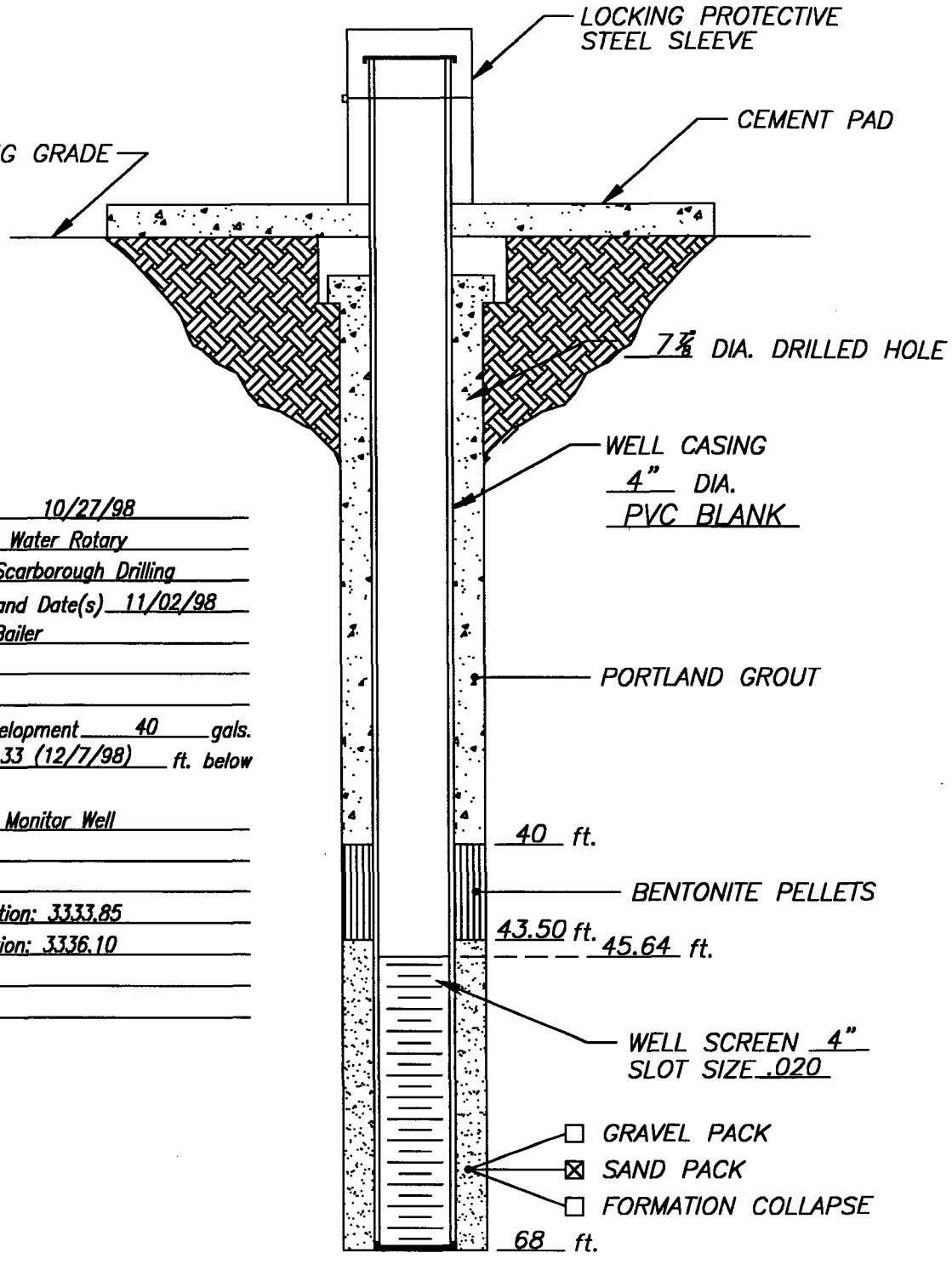
Installation Date(s) 10/26/98
Drilling Method Water Rotary
Drilling Contractor Scarborough Drilling
Development Technique(s) and Date(s) 11/02/98
Rig Bailer

Water Removed During Development 45 gals.
Static Depth to Water 52.84 (12/7/98) ft. below Ground Level
Well Purpose Monitor Well

Remarks
Ground Elevation: 3332.21
T.O.C. Elevation: 3334.32

DATE: 10/26/98	CLIENT: TEXACO EXPLORATION & PRODUCTION, INC.	WELL NO.
Highlander Environmental	PROJECT: EUNICE #2 (SOUTH) PLANT	MW-17
	LOCATION: LEA COUNTY, NEW MEXICO	

WELL CONSTRUCTION LOG



Installation Date(s) 10/27/98
Drilling Method Water Rotary
Drilling Contractor Scarborough Drilling
Development Technique(s) and Date(s) 11/02/98
Rig Bailer

Water Removed During Development 40 gals.
Static Depth to Water 54.33 (12/7/98) ft. below Ground Level
Well Purpose Monitor Well

Remarks
Ground Elevation: 3333.85
T.O.C. Elevation: 3336.10

DATE: 10/27/98 **Highlander Environmental**	CLIENT: TEXACO EXPLORATION & PRODUCTION, INC. PROJECT: EUNICE #2 (SOUTH) PLANT LOCATION: LEA COUNTY, NEW MEXICO	WELL NO. MW-18

APPENDIX C

APPENDIX C

Trace Analysis, Inc. Reports

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
Highlander Environmental Services
Attention Mark Larson
1910 N. Big Spirng St.
Midland TX 79705

Date: Nov 06, 1998
Date Rec: 11/5/98
Project: 786
Proj Name: Texaco South Eunice Gas Plant
Proj Loc: Eunice Plant

Lab Receiving # : 9811000075
Sampling Date: 11/3/98
Sample Condition: Intact and Cool
Sample Received By: VW

TA#	Field Code	MATRIX	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P,O XYLENE (mg/L)	TOTAL BTEX (mg/L)
111914	MW-13	Water	<0.001	<0.001	<0.001	<0.001	<0.001
111915	MW-14	Water	<0.001	<0.001	<0.001	<0.001	<0.001
111916	MW-15	Water	0.008	<0.001	<0.001	<0.001	0.008
111917	MW-16	Water	<0.001	<0.001	<0.001	<0.001	<0.001
111918	MW-17	Water	<0.001	<0.001	<0.001	<0.001	<0.001
111919	MW-18	Water	<0.001	<0.001	<0.001	<0.001	<0.001
Method Blank			<0.001	<0.001	<0.001	<0.001	
Reporting Limit			0.001	0.001	0.001	0.001	
QC			0.125	0.115	0.108	0.314	
RPD			2	2	2	2	
% Extraction Accuracy			129	120	111	112	
% Instrument Accuracy			125	115	108	105	

TEST	PREP METHOD	PREP DATE	ANALYSIS METHOD	ANALYSIS COMPLETED	CHEMIST	QC: (mg/L)	SPIKE: (mg/L)
BTEX	EPA 5030	11/5/98	EPA 8021B	11/5/98	CS	0.100 ea	0.1 ea

Director, Dr. Blair Leftwich

11-6-98
Date

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
HIGHLANDER ENVIRONMENTAL CORP.

November 11, 1998
Receiving Date: 11/05/98
Sample Type: Water
Project No: 786
Project Location:

Attention: Mark Larson
1910 N. Big Spring
Midland, Texas 79705

Sampling Date: 11/03/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Eunice #1 (South) Plant

DISSOLVED

TA#	FIELD CODE	As (mg/L)	Se (mg/L)	Cd (mg/L)	Cr (mg/L)	Pb (mg/L)	Ag (mg/L)	Ba (mg/L)	Hg (mg/L)
T111914	MW-13	<0.01	<0.01	0.003	<0.01	<0.005	<0.002	1.5	<0.0010
ICV		5.0	5.1	4.8	5.0	4.9	1.0	5.1	0.0052
CCV		4.8	5.0	4.9	4.9	4.8	1.0	5.1	0.0052
REPORTING LIMIT		0.01	0.01	0.001	0.01	0.005	0.002	0.01	0.0010
RPD		0	5	6	5	0	0	0	2
% Extraction Accuracy		85	95	90	95	85	75	90	93
% Instrument Accuracy		98	100	96	98	96	100	102	104
PREP DATE		11/5/98	11/5/98	11/5/98	11/5/98	11/5/98	11/5/98	11/5/98	11/8/98
ANALYSIS DATE		11/6/98	11/6/98	11/6/98	11/6/98	11/6/98	11/6/98	11/6/98	11/9/98

METHODS: EPA SW-846 6010, 3005A, 7470A
CHEMIST: As, Se, Cd, Cr, Pb, Ag, Ba: RR Hg: BP
TOTAL METALS SPIKE: 2.0 mg/kL As, Se Cd, Cr, Pb, Ba: 1.0 mg/kg Ag
TOTAL METALS CV: 5.0 mg/L As, Se Cd, Cr, Pb, Ba: Ag: 1.0 mg/L
Hg SPIKE: 0.0050 mg/L Hg CV: 0.0050 mg/L

Director, Dr. Blair Leftwich

11-11-98
Date

TRACEANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
HIGHLANDER ENVIRONMENTAL CORP.

December 14, 1998
Receiving Date: 11/05/98
Sample Type: Water
Project No: 786
Project Location: Eunice Plant

Attention: Mark Larson
1910 N. Big Spring
Midland, Texas 79705

Sampling Date: 11/03/98
Sample Condition: I & C
Sample Received by: VW
Project Name: Eunice #1 (South) Plant

DISSOLVED

TA#	FIELD CODE	As (mg/L)	Se (mg/L)	Cd (mg/L)	Cr (mg/L)	Pb (mg/L)	Ag (mg/L)	Ba (mg/L)	Hg (mg/L)
T111915	MW - 14	<0.10	<0.10	<0.02	<0.05	<0.10	<0.05	<0.10	<0.0010
ICV		1.0	1.0	1.0	1.0	1.0	0.20	1.0	0.0044
CCV		0.94	1.0	0.97	0.97	0.93	0.20	0.99	0.0045
REPORTING LIMIT		0.10	0.10	0.02	0.05	0.10	0.05	0.10	0.0010
RPD		5	5	5	5	6	2	5	2*
% Extraction Accuracy		100	105	95	95	90	98	100	86*
% Instrument Accuracy		97	100	98	98	96	100	99	90
PREP DATE		12/9/98	12/9/98	12/9/98	12/9/98	12/9/98	12/9/98	12/9/98	12/9/98
ANALYSIS DATE		12/9/98	12/9/98	12/9/98	12/9/98	12/9/98	12/9/98	12/9/98	12/10/98

***LCS & LCSD were used for RPD & %EA due to poor recovery in MS & MSD.**

METHODS: EPA 200.7
CHEMIST: As, Se, Cd, Cr, Pb, Ag, Ba: RR Hg: BP
TOTAL METALS SPIKE: 2.0 mg/L As, Se Cd, Cr, Pb, Ba: 0.50 mg/L Ag.
TOTAL METALS CV: 1.0 mg/L As, Se Cd, Cr, Pb, Ag Ba: 0.20 mg/L Ag
Hg SPIKE: 0.0050 mg/L Hg CV: 0.0050 mg/L

BS — 12.14.98

Director, Dr. Blair Leftwich — Date

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
HIGHLANDER SERVICES CORP.
Attention: Mark Larson
1910 N. Big Spring Street
Midland, TX 79705

November 11, 1998
Receiving Date: 11/05/98
Sample Type: Water
Project No: 786
Project Location:

Sampling Date: 11/03/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: Eunice #1
(South) Plant

TA#	FIELD CODE	TDS (mg/L)	pH (s.u.)	CHLORIDE (mg/L)	CHLORIDE (mg/L)
T111914	MW-13	1,100	7.3	430	---
T111915	MW-14	1,100	7.3	420	---
T111916	MW-15	4,700	7.0	2,300	---
T111917	MW-16	3,700	7.3	2,000	---
T111918	MW-17	11,000	6.9	---	6,000
T111919	MW-18	9,500	7.0	---	5,700
ICV		983	7.0	12.83	12.41
CCV		997	7.0	13.81	13.18
REPORTING LIMIT		10	---	0.5	0.5
RPD		0	0	0	0
% Extraction Accuracy		---	---	106	104
% Instrument Accuracy		100	100	107	102
PREP DATE		11/06/98	10/21/98	11/09/98	11/10/98
ANALYSIS DATE		11/06/98	10/21/98	11/09/98	11/10/98

METHODS: EPA 160.1, 150.1, 300.0
CHEMIST: pH: SA TDS: RS CHLORIDE: JS
CHLORIDE SPIKE: 625 mg/L CHLORIDE.
CHLORIDE CV: 12.5 mg/L CHLORIDE.

Director, Dr. Blair Leftwich

11-11-98
Date

111914-19

75

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4559 Fax (915) 682-3946

PAGE: 1 OF: 1

CLIENT NAME: Texaco | SITE MANAGER: M. Larson

PROJECT NO.: 786 | PROJECT NAME: Eunice #1 (South) Plant

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
111914	11/3/98	08:10	W	✓	✓	MW-13	5	Y	✓	✓	✓	✓
15	11/3/98	09:00	W	✓	✓	MW-14	4	N	✓		✓	✓
16	11/3/98	10:15	W	✓	✓	MW-15	4	N	✓		✓	✓
17	11/3/98	11:00	W	✓	✓	MW-16	4	N	✓		✓	✓
18	11/3/98	12:50	W	✓	✓	MW-17	4	N	✓		✓	✓
19	11/3/98	13:55	W	✓	✓	MW-18	4	N	✓		✓	✓

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8020/602	MTBE 8020/602	TPH	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
✓			✓	✓								✓	✓			
✓			*									✓				
✓												✓				
✓												✓				
✓												✓				
✓												✓				

* Dissolved Metals

RELINQUISHED BY: (Signature) Mark Larson — Date: 11/4/98 Time: 14:15

RECEIVED BY: (Signature) Helen Shelton — Date: 11/4/98 Time: 4:10 PM

RELINQUISHED BY: (Signature) Helen Shelton — Date: 11/4/98 Time: 5:00 PM

RECEIVED BY: (Signature) — Date: — Time:

RELINQUISHED BY: (Signature) — Date: — Time:

RECEIVED BY: (Signature) — Date: — Time:

SAMPLED BY: (Print & Sign) M.J. Larson — Date: 11/3/98 Time: 12:00

SAMPLE SHIPPED BY: (Circle) FEDEX BUS UPS HAND DELIVERED — AIRBILL # GLI 15938440409 — OTHER: — #5 11-5-98 2°

RECEIVING LABORATORY: Trace Analysis, Inc
ADDRESS: 6701 Aberdeen
CITY: Lubbock STATE: Texas ZIP:
CONTACT: Nell PHONE: (800) 378-1296

RECEIVED BY: (Signature) Vicki Wardhan
DATE: 11-5-98 TIME: 9:00 a

HIGHLANDER CONTACT PERSON: Mark Larson

Results by: THURS 12TH OR FRI 13TH NOV.
RUSH Charges Authorized: Yes No PLEASE

SAMPLE CONDITION WHEN RECEIVED:

MATRIX: (W)-Water A-Air SD-Solid S-Soil SL-Sludge O-Other

REMARKS: * filter sample for dissolved analysis

Please Fill out all spaces - Laboratory retains yellow copy - Return original copy to Highlander Environmental Corp. - Project Manager retains pink copy - Accounting receives Gold copy.

Texaco Exploration and Production Inc P O Box 1929
Eunice NM 88231 1929

February 14,1996

Chris E. Eustice
State of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: GROUND WATER DISCHARGE PLAN RENEWAL

Enclosed is Texaco Exploration and Productions Inc.'s Eunice South Gas Processing Plant's Groundwater Discharge Plan. The plan is being submitted for renewel.

If you have any questions please call me at 505-394-2516.

Sincerely,

Rodney G Bailey

Rodney G. Bailey
Eunice Complex EHS Coordinator

GROUNDWATER DISCHARGE PLAN

TEXACO EXPLORATION & PRODUCTION

EUNICE SOUTH GAS PROCESSING PLANT

LEA COUNTY, NEW MEXICO

February 14, 1996

I. GENERAL INFORMATION

A. Name of Discharge or Legally Responsible Party.

Texaco Exploration and Production Inc.'s Eunice South Gas Processing Plant
PO Box 1929
Phone: (505) 394-2516

B. Name of Local Representative or Contact Person

Plant Superintendent:	L. A. Brzowski (Same as above)
EH&S Coordinator:	R. G. Bailey (Same as above)

C. Location of Discharge

SW/4, SW/4, Section 27, Township 22 South, Range 37 East, Lea County, New Mexico.

A topographic map and a facility plot plan are included in Appendix 4.

D. Type of Natural Gas Operation

The plant is cryogenic natural gas processing plant designed to process 139.5 million cubic feet per day. At present the plant is processing approximately 110 million cubic feet per day and producing about 12,000 bbls/day of demethanized product (ethane, propane, butanes, pentanes, and heavier).

E. Affirmation

"I hereby certify that I am familiar with the information contained in and submitted with this application and that such information is true, accurate, and complete to the best of my knowledge and belief."

Signature: C. R. Addison Date: 02-14-96

Printed Name: C. R. Addison Title: Complex Manager

II. PLANT PROCESS

A. Sources and Quantities of Effluent and Process Fluids

1. Scrubbers and Separators: The plant utilizes the following scrubbers and separators with the indicated discharge:

a)	1st stage scrubber to turbine compressors:	30 gal/day
b)	2nd stage scrubber to turbine compressors:	40 gal/ day
c)	four interstage scrubbers on the turbine compressors	10 gal/day/scrubber
d)	tanks #12, #13 separators:	1200 gal/day
e)	inlet scrubber on booster inlet gas:	40 gal/day
f)	high pressure inlet gas scrubber:	20 gal/day
g)	high pressure discharge gas scrubber:	10gal/day
h)	hydrogen sulfide separator:	20 gal/day
i)	gas to treater scrubber:	5 gal/day
j)	gas to treater scrubber	5 gal/day
k)	gas treater discharge scrubber:	5 gal/day
l)	1st stage discharge scrubbers on compressors:	10 gal/day
m)	raw gas inlet scrubbers:	15 gal/day
	Total:	1410 gal/day

The scrubber water may typically be high in Total Dissolved Solids (TDS) and may contain dissolved hydrocarbons.

2. Boilers: The Eunice South Gas Processing Plant utilizes one Erie City boiler, one Nebraska boiler and four Lookout-Eclipse boilers in its operations. The combined blowdown rate varies from 15,000 gal/day to 20,000 gal/day. Additives include Unichem 3030 corrosion inhibitor, Unichem 3270 neutralizer and Unichem 3141 an oxygen scavenger. The Material Safety Data Sheets (MSDS) are included in Appendix 1. The blowdown can be expected to be high in TDS

3. Engine Cooling Water: Auxiliary engines 1-4, 5-9 and gas compressors 17-25 have their own closed loop cooling system. The cooling water is not routinely discharged but should mechanical failure occur, the water is collected in the engine room sump and is then placed in the scrubber oil tank at the Eunice North processing plant. Additives include Unichem 2010 and 2310, both corrosion inhibitors. MSDS is included in Appendix 1.

4. Cooling Tower: The cooling tower water is continuously discharged into pit # 4 through a buried 4 inch polyethylene line. The discharge rate varies from 20,000 gallons per day to 25,000 gallons per day. The discharge water can be expected to contain high TDS. Additives include Unichem 1304 biocide and sulfuric acid for pH control. MSDS's are included in Appendix 1.

5. Sewage: The sewage system at the Eunice South Gas Processing Plant consists of a septic tank and lateral lines. This system is completely separate from and independent of all other plant waste systems.

6. Others:

   a) Used engine oil: Used engine oil from the auxiliary engines and from engines 23-25 are removed from the engine room sumps by vacuum truck and the placed in the scrubber oil tanks at the Eunice North Gas Processing Plant for recycling. The used engine oil from the remainder of the engines is pumped to tank #21 and then removed by vacuum truck to the Eunice North Gas Processing Plant scrubber oil tanks for recycling. There are no additives used in the engine oil.

   b) Equipment Cleaning Solution: The plant uses a mixture of water and Adams Chemical Company's "Adams Special" Industrial soap. Industrial Cleaner for engine and equipment cleaning. The MSDS is included in appendix 1. The discharge averages approximately 40 gallons per day and may contain some oil and grease.

   c) Water Softener Wastewater: The water softener wastewater can be expected to be high in TDS and sodium chloride as a result of the regeneration process. The average discharge is 806 gallons per day. There are no additives in this waste water stream.

B. Quality Characteristics

All plant wastewater, except the aforementioned engine room sumps, are commingled at pit # 4. (See the Wastewater Block Flow Diagram included in Appendix 3.) All wastewater transfer, storage and collection units are constructed of either reinforced concrete or steel piping therefore minimizing any risk of ground water contamination. (See Item #II-C for additional details.)

Because of the low risk of groundwater contamination we have elected to treat all sources discharged into the waste water pit as a commingled source.

Sample points will include the pit # 4 discharge line and the plants freshwater well. Full TCLUP test will be conducted on all samples.

1. WQCC 1-101.uu: Since this facility does not manufacture chemical compounds (including herbicides, pesticides and chlorinated hydrocarbons) we would expect to find only those hydrocarbon compounds that are naturally occurring such as benzene, toluene and xylene. Benzene, toluene, and xylene which have been quantified under item #2 above.

2. Sampling Location, Methods, and Procedures: The sampling locations include the following.

   Fresh water well - Freshwater faucet.

   Waste Water Pit - Discharge line to the injection well.

   All samples were unfiltered grab samples that were preserved and analyzed in accordance with EPA SW 846 and/or Standard Methods for the Examination of Water and Wastewater (17th edition). The samples were then transported, on ice, to Cardinal Lab in Hobbs, NM for analysis.

3. Variability in Flow Rates and Concentration: During normal operations we anticipate no significant fluctuations in flow rate or concentration in the plant effluents. However, if there is a mechanical malfunction at off-site gas gathering locations there is a possibility of increased volumes of produced water and oil following to the plant. We would not anticipate an increase in concentration of the parameters of concern.

C. Transfer and Storage of Process Fluids and Effluents

1. Water and Wastewater Flow Schematics: See Wastewater Block Flow Diagram in Appendix 3.

2. Description of Equipment Associated with Wastewater Production and Handling.

a) Raw Gas Inlet Scrubbers -The scrubbers are pressurized vessels which discharge by pump into tank #21. The discharge lines are constructed with a solid connection to the drains and are fabricated with 4 inch schedule 40 carbon steel pipe. The drain lines and a section of the dump lines are buried.

b) Tank #21- This vessel operates at atmospheric pressure and is used to provide storage for scrubber oil and water from the engine sumps and inlet scrubbers. Scrubber oil and water mixture is trucked from tank # 21 to the Eunice North Gas Processing Plant for recovery of the oil. This tank is a standard welded tank with capacity of 20,000 gallons and wall thickness of .3125 inches. The tank is 40 feet in diameter and 10 feet in diameter.

c) Engine Sumps - The engine sumps are constructed of reinforced concrete. The sumps for engines # 17-22 are pumped to tank # 21 through a 4 inch schedule 40 carbon steel pipe. All connections are of solid construction. In addition to used engine oil and any escaping coolant, the sumps also collect any soap and wash water that is used in the engine room.

d) The sump liquids from the auxiliary engines and engines #23-25 are removed by vacuum truck and taken directly to the Eunice North Gas Processing Plant for oil recovery.

e) 1st Stage Discharge Scrubbers on Compressors - These scrubbers are pressured vessels which separate gas and liquids by gravity. The liquids are discharged to tank # 21 through a 2 inch schedule 40 carbon steel line that is constructed with solid connections. With the exception of the last 50 feet, these lines are installed above ground.

f) Gas to Amine Treater / Scrubber - The scrubbers are pressurized vessels which separate gas and liquids by gravity. The liquids are discharged to tank # 21 through a 2 inch schedule 40 carbon steel line that is constructed with solid connections. With the exception of the last 50 feet, these lines are installed above ground.

g) Gas Treater Gas Discharge Scrubber - This is a pressurized vessel which seperates gas and monoethylamine (MEA) by gravity. The MEA liquid discharges back to the MEA surge

tank through a 2 inch carbon steel line. This line is constructed with solid connections and is above ground.

h) MEA Filter - This is a pressurized vessel that discharges liquids to the drain system once every month when the filters are changed. Discharge is through a 4 inch polyethylene line that is of solid construction and is installed above ground. The 4 inch line is then discharged into an underground 6 inch schedule 40 carbon steel line that is discharged to the plant skimmer tank.

i) MEA Reclaimer - This pressurized vessel discharges liquid every 3 months upon cleaning of the reclaimer. The liquid is discharged through 4 inch polyethylene line into a bell riser that is connected to a buried 6 inch drain line. The 6 inch line discharges to the plant skimmer tank.

j) MEA Surge Tank - This pressurized vessel discharges to the 4 inch drain line (described in (g) above) only in the event of an emergency.

k) Zeolite Treaters - Both of the zeolite treaters discharge high TDS water into a buried 4 inch carbon steel line which in turn discharges into a buried 4 inch polyethylene line. The 4 inch polyethylene line discharges into pit # 4.

l) Boilers - The plant utilizes one Erie City boiler, one Nebraska boiler and four Lookout-Eclipse boilers. The Nebraska boiler is rated a 30,000 lbs/hr. The Erie City boiler is rated at 58,000 lbs/hr and each Lookout-Eclipse boiler is rated at 12,000 lbs/hr. The continuous and manual blowdown from all boilers is discharged to a buried 4 inch carbon steel line. The 4 inch line then discharges to a buried 4 inch polyethylene line. The polyethylene line then discharges to pit # 4.

m) H2S Flare Sump - This is an atmospheric vessel used to separate gas and liquid. The liquid is pumped from the sump to the waste water pit through a buried 2 inch carbon steel line. All connections are of solid construction.

n) Saltwater Tank Overflow - This tank is for the storage of saltwater that is used in the regeneration cycle of the zeolite treaters. The overflow line is constructed of buried 2 inch carbon steel with solid connections to within 15 feet of pit #

4. The last 15 feet is above ground 2 inch polyethylene line. The saltwater is discharged into the waste water pit.

o) Cooling Tower Blowdown - The blowdown originates at the discharge of the coil shed circulation pumps. The water is discharged into a 4 inch polyethylene line that is buried and of solid construction which in turn discharges into pit # 4.

p) Skimmer Tank - This is a 6 foot diameter by 19 foot 8 inch deep underground process tank that is constructed of 7/16 inch welded steel. This tank receives wastewater from several sources (see Waste water Block Flow Diagram in Appendix 3). After the reclaimable hydrocarbons are removed, the effluent is pumped to pit # 4 through a buried 4 inch polyethylene line.

q) Sump - The sump pit is constructed of reinforced concrete and measures 4'8" x 4'8" x 7' deep. This sump receives waste water from the waste heat boilers, interstage scrubbers, 1st and 2nd stage scrubbers and the drains from tanks 12-14. The sump is gravity drained to the skimmer tank through a solid buried 6 inch scheduled 40 carbon steel line.

r) Tanks 12-13 - The pressurized vessels are used for NGL storage for rerun purposes. The drain for tank 13 is a 2 inch carbon steel that connect to a 4 inch carbon steel line. The drain for tank #12 is a 2 inch carbon steel line that discharges into a 4 inch carbon steel riser. The 4 inch line for both drains is routed into a 4 inch carbon steel line that discharges to the sump.

s) Regenerator Gas Separator - This pressurized vessel is used to separate gas and liquid from the regeneration beds. The drain line is a solid, buried 2 inch carbon steel line. The separator is equipped with a level control that automatically drains this vessel to tank # 12.

t) Water Knockout on Glycol Reboiler Overhead - This vessel is used to separate gas and liquid. The liquid is pumped through a solid, buried, 2 inch carbon steel line that is discharged to tank # 12.

u) Interstage Scrubbers - These pressurized vessels are used to separate the gas from the liquid as the gas travels from the 1st stage to the 2nd stage on the turbine compressors.

The liquid is automatically drained to a solid, buried, 2 inch carbon steel line that discharges into a solid, buried, 6 inch carbon steel line. The 6 inch line is then discharged to the sump.

v) 2nd Stage Scrubber - This pressurized vessel is used to separate liquid from the raw gas prior to the turbine compressors. The drain line consists of a 2 inch carbon steel line that is connected to a 6 inch schedule 40 carbon steel line. Approximately 15 feet of the line is above ground while the remaining 5 feet is buried. The vessel automatically discharges liquid to the drain which discharges to the sump.

w) 1st Stage Scrubbers - This pressurized vessel is used to separate the liquid from the raw gas prior to the 2nd stage turbine compressors. The vessel drains automatically to an above ground, solid 4 inch carbon steel line that, in turn discharges to a buried 6 inch scheduled 40 carbon steel line that discharges to tank # 21.

x) Flare Water Knockout - Condensed water from the flare gravity flows into an aboveground process tank. The tank is pumped to the treater/stabilizer condensate tank.

D. Spill/Leak Prevention and Housekeeping Procedures

1. Containment and Cleanup of Spills: Texaco's Eunice South Gas Processing Plant is manned 24 hours per day, 7 days per week. After hours, from 3:30pm until 7:00am, there are four operators at the plant site. The plant is visually inspected on an hourly basis by the Operators.

In the event of a spill that cannot be handled with personnel and equipment on site, the Plant Superintendent or his designated representative will call a trained and experienced local contractor who can provide the equipment necessary to contain and remove the spill. The contractor's equipment may include, but is not limited to, vacuum trucks, dump trucks, backhoes, hand tools, and absorbent material.

The Eunice South Gas Processing Plant has in effect a plan for prevention of significant spills that could lead to groundwater contamination. This plan calls for the installation of curbing, diking

and/or other acceptable containment measures around all ground level storage vessels.

This plan also provides that any future ground level storage tanks will be installed on curbed pads constructed of concrete or other impervious material that will facilitate the detection of leaks.

Any spill contaminated materials will be disposed of in a manner that is consistent with all applicable local, state, and federal regulations.

In the event of a reportable spill, leak, or release, notification will be provided in accordance with New Mexico Oil Conservation Division Rule 116 and any other applicable rules or regulations.

2. Housekeeping Procedures: Empty chemical drums are rinsed until clean and then stored for return to the providing vendor of for proper disposal. Where practical the plant utilizes bulk storage tanks in lieu of drums.

Oily rags are accumulated in closed lid containers placed at strategic locations throughout the plant. The oily rags are then returned to the vendor for cleaning and reuse.

Trash Is stored in a dumpster as it is generated. Waste Management of Southeast New Mexico removes the trash for disposal at the City of Hobbs Landfill.

Oil filters and other filters used in the plant process are stored in metal containers until they are completely drained of fluid. They are then placed in a special waste container provided by Quell Petroleum Services, Inc. which are removed for disposal at their location in Monahans Tx.

The plant has a spill program in effect that calls for the installation of drip/leak collection pads or vats around or under all sources that have a history of leaking or have a high potential to leak. The sources that will be controlled will include certain pumps, valves, flanges, chemical pots, and blowdown lines.

The plant has drip vats under the chemical drum racks. The vats or containers are emptied on an as-needed basis.

Should a spill or leak occur, any contaminated soil is removed and disposed of in accordance with applicable local, state, and federal regulations.

3. Leak Detection: The plant operators conduct hourly walk-through inspections of the entire facility. If a leak is discovered the plant operator will initiate corrective action. In the event of a serious or catastrophic leak the plant operator may initiate emergency procedures as outlined in Item II.D.1.

   Any problems encountered are noted in the operators log book or remarks section of the daily work sheets.

   Additionally, the plant plans to leak test all buried wastewater lines within 2 years from this date, All pressurized lines will be hydrostatically tested at 1.5 times their operating pressure. Open end lines will be tested by pneumatic or other acceptable nondestructive testing techniques. Records of the leak testing will be maintained in the plant files.

4. Injection Wells - Alternate Disposal: Should the on-site injection well become unserviceable, the plant's waste water will be stored in pit # 4. Pit # 4 has a total capacity of approximately 52,000 bbls. Should the need for storage exceed the pit capacity, the plant waste water will be transported by truck to any of a number of permitted locally available commercial disposal wells.

III. Effluent Disposal

A. Existing Operations

1. On-site Facilities:

a) Description

(1) Surface Impoundment's: The Eunce South Gas Processing Plant does not utilize any surface impoundments for disposal. However pit # 4 is used for wastewater storage pending disposal in the plants injection well. The following information is relevant to pit # 4:

- Date of use: Construction in 1989. The pit is still being utilized as of this date.

- Type and volume of effluents stored: All liquid plant waste as described in previous sections are stored in pit # 4 prior to disposal. The volume of liquid wastes averages approximately 50,000 bbls per month.
- Area (inside dimensions): 190' x 240'
- Volume: 52,000 bbls.
- Depth (top of dike to bottom of pit) : 15'
- Slope: 1:3 (inside and outside)
- Sub-grade description: Sand directly beneath secondary liner followed by compacted earth.
- Liner type: High density polyethylene
- Liner thickness: 60 Mil primary and secondary
- Compatibility of liner and effluents: See the chemical resistance information provided in Appendix 6.
- Installation method: The liners were installed by welding the approximate 20' width sheets of polyethylene together using fusion welding machines. Vents were installed under the secondary liner and between the primary and secondary liner to vent any gas that may form.
- Leak detection methods: A network of 4 1/2 inch O.D. perforated polyethylene pipe wrapped in Geotextile that empties into a 4 inch collector pipe which in turn empties into a 30 inch concrete sump. The perforated pipe is situated between the primary and secondary liner. Each perforated pipe has been graveled in with clean pea gravel. (See drawing in Appendix 7)
- Freeboard: 3'

- Run-on / run-off protection: Run-on and run-off is prevented by the conpacted earthen dikes that extend approximately 7 1/2' above grade.

(2) Off-Site Facilities

(a) Sludge's and Solids-The plant disposes of sludge's and solids on an as needed basis. When disposal is required, the transporter and disposal site utilized will meet all local, state, and federal requirements.

(3) Injection wells:

- Effluent injected: All liquid plant wastes as described in previous sections.
- Volume: Approximately 1.98 million gallons/month.
- Depth: 4550"
- Formation: San Andres
- OCD order number: SWD-29
- Approval date: November 25, 1961

The injected wastes are not classified as hazardous wastes. The majority of the plant liquid wastes are covered under EPA's Exploration, Production, Gas Processing and Geothermal exemptions for RCRA hazardous wastes.

b) Protection from Groundwater Contamination

(1) See item above (Surface Impoundment's)

(2) Samples of pit #4 may be acquired from the pit discharge line. Any leaks occurring through the primary liner will be collected in the leak detection sump located adjacent to the pit.

(3) The monitoring system is described in item above *(surface Impoundments)*.

(4) Should a leak be detected, the Oil Conservation Division (OCD) District Office will be provided written notice within 10 working days. Additionally, any needed corrective action will be coordinated through the OCD District Office.

2. Off-site Disposal: There are no industrial wastes that are routinely disposed of off-site. However, sludge's from the wastewater pit or various plant processes may be disposed of on an as-needed basis.

Should the need for off-site disposal arise, the Oil Conservation Division, and all other applicable regulatory agencies, will be notified prior to disposal. Additionally, any required testing and / or permits will be secured prior to disposal.

The Eunice South Gas Plant transports its' used lube oil and certain slop oils to the Eunice North Gas Plant for reclamation and reintroduction into the Texas-New Mexico Crude Oil Pipeline. The used oil is transported by vacuum truck.

IV. SITE CHARACTERISTICS

A. Hydrological Features

1. There are no known bodies of water, streams or other water course within a one mile radius of the plant. There are two known water wells within a one mile radius of the plant:

   a) The John Able water well is located 3/4 mile North of the plant on the West side of State Highway # 207. Texaco purchases water from this well for domestic and industrial use.

   b) Texaco's water well # 17 , Township 22 South, Range 37 East, Lea County, New Mexico. This well is used exclusively for industrial use.

2. The depth to the first usable groundwater averages 85-100 feet. On 2-14-96 the plant's freshwater well (the Able well) was sampled for water quality analyses. The analysis are included in Appendix 2.

B. Geological Description of Discharge Site

1. Soil Types: According to local well logs, the soils in the area of the plant are typically:

surface to 45'	Caliche
- 130'	sand, shale and occasionally, Redbeds
- 430'	Triassic Redbeds

2. Name of Aquifer: According to groundwater maps of the area, the groundwater is on the extreme south/southwestern fringe of the Ogallala aquifer.

3. Composition of Aquifer Material: The composition of the aquifer material is an alluvium composed of various sands, shale and occasionally Redbed clays.

4. Depth to Rock at Base of Alluvium: The Triassic Redbeds are encountered at approximately 130'. The Triassic Redbeds and various sands are present from 130' to 1196' where anhydrite is encountered.

C. Flood Protection

1. After an exhaustive search of governmental agencies, specific flooding information could not be located. However, during the operating history of the plant there have been no known flooding events.

APPENDIX 1

Product Name: UNICHEM 3030

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 2/10/91
Date Prepared 9/21/93
Version: 0000002

Product Name: UNICHEM 3030

Chemical Description:
Proprietary boiler water scale and corrosion inhibitor

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
sodium nitrate	07631-99-4	< 15%
ethylenediaminetetraacetic acid, tetrasodium salt	00064-02-8	< 10%
potassium hydroxide	01310-58-3	< 5%
trisodium nitrilotriacetate	05064-31-3	< 1%

Section: 03 PHYSICAL DATA

Freezing Point: 10 Deg.F.
Boiling Point, 760 mm Hg: 212 Deg.F
Specific Gravity(H2O=1) : 1.300 Solubility in water: Complete
Appearance and Odor: Light brown liquid; no significant odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): None

Extinguishing Media

Material is not combustible. Keep containers cool. Contain fire fighting liquids for proper disposal.

Special Fire Fighting Procedures

Do not enter confined fire space without proper personal protective equipment including NIOSH approved self-contained breathing apparatus with full facepiece operated in the positive pressure demand mode. Do not inject a solid stream of water or foam into hot, burning pools; this may cause splattering and increase fire intensity. Evacuate personnel to a safe area. Keep unnecessary people away.

Unusual Fire and Explosion Hazards

None

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Product Name: UNICHEM 3030

Section: 05 HEALTH HAZARD DATA CONTINUED

Eye contact: vapors, liquid, and mists are extremely corrosive to the eyes. Brief contact of the vapors will be severely irritating. Brief contact of the liquid or mists will severely damage the eyes and prolonged contact may cause permanent eye injury which may be followed by blindness.

Skin contact: vapors, mists, and liquid are extremely corrosive to the skin. Vapors will severely irritate the skin and liquid and mists will severely burn the skin. Prolonged liquid contact will burn or destroy surrounding tissue and death may accompany burns which extend over large portions of the body.

Inhalation: vapors and mists are extremely corrosive to the nose, throat, and mucous membranes. Bronchitis, pulmonary edema, and chemical pneumonitis may occur. Irritation, coughing, chest pain, and difficulty in breathing may occur with brief exposure while prolonged exposure may result in more severe irritation and tissue damage. Breathing high concentrations may result in death.

Ingestion: vapors, mists, and liquid are extremely corrosive to the mouth and throat. Swallowing the liquid burns the tissues, causes severe abdominal pain, nausea, vomiting, and collapse. Swallowing large quantities can cause death.

Chronic effects of exposure: may result in area of destruction of skin tissue or primary irritant dermatitis. Similarly, inhalation of vapors or mists may cause varying degrees of damage to the affected tissues and also increasing susceptibility to respiratory illness.

Systemic & Other Effects: very small amounts of nitrilotriacetic acid acid (NTA) are present in this product. NTA is a component listed by the IARC as a possible human carcinogen (Group 2B). While current data regarding human exposures to NTA is inadequate, large dietary doses of NTA have caused urinary tumors in laboratory animals.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if

Product Name: UNICHEM 3030

Section: 05 HEALTH HAZARD DATA CONTINUED

not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid

None known.

Incompatibility (Materials to Avoid)

Avoid contact with strong oxidizers or acidic materials.

Hazardous Decomposition Products

Smoke, carbon dioxide, carbon monoxide, oxides of nitrogen.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid

None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Persons not wearing suitable personal protective equipment should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled material with sand or earth. Recovered undamaged or minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.
Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S.EPA or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

A respirator is normally not required if this product is

Section: 08 SPECIAL PROTECTIVE INFORMATION CONTINUED

used with adequate ventilation.

Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Do not transfer to improperly marked container. Do not use pressure to empty container. Do not cut, heat, weld, or expose containers to flame or other sources of ignition. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should be grounded and bonded to receiving container(s) when being emptied. Containers should not be washed out and used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311

Product Name: UNICHEM 3030

Section: 10 REGULATORY INFORMATION CONTINUED

and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard _ Sudden Release of Pressure _ Fire
X Chronic Health Hazard _ Reactive

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
NONE		

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
ethylenediaminetetraacetic acid, tetrasodium salt	00064-02-8	5000
potassium hydroxide	01310-58-3	1000

OSHA Exposure Limits

Component Name
NONE

National Fire Protection Agency

2 Health 0 Fire
0 Reactive ALK Other

Product Name: UNICHEM 3030

Section: 10 REGULATORY INFORMATION CONTINUED

Department of Transportation Shipping Information

Proper Shipping Name: Corrosive liquids, n.o.s.
Hazard Class: 8 Identification: UN1760
Packaging Group: PG II
Contains: ethylenediaminetetraacetic acid, potassium hydroxide
Hazardous Substance RQ: 20000# Emergency Response Guide Number: 60
Labels: Corrosive

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

Product Name: UNICHEM 3270

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 2/10/91
Date Prepared 9/21/93
Version: 0000002

Product Name: UNICHEM 3270

Chemical Description:
Proprietary neutralizing amine blend

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
cyclohexylamine	00108-91-8	< 25%

Section: 03 PHYSICAL DATA

Freezing Point: 15 Deg.F.
Boiling Point, 760 mm Hg: init 212 Deg.F
Specific Gravity(H2O=1) : 0.970 Solubility in water: Complete
Appearance and Odor: Water white to light yellow, clear liquid; amine odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): 120 Deg.F TCC

Extinguishing Media

CO2, dry chemical, water spray or fog, or foam. Use water to keep containers cool. Isolate "fuel" supply from fire. Contain fire fighting liquids for proper disposal.

Special Fire Fighting Procedures

Do not enter confined fire space without proper personal protective equipment including NIOSH approved self-contained breathing apparatus with full facepiece operated in the positive pressure demand mode. Do not inject a solid stream of water or foam into hot, burning pools; this may cause splattering and increase fire intensity. Evacuate personnel to a safe area. Keep unnecessary people away.

Unusual Fire and Explosion Hazards

This material is volatile and readily gives off vapors that may travel along the ground or be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electrical motors, static discharge, or other ignition sources at locations distant from material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite

Product Name: UNICHEM 3270

Section: 04 FIRE AND EXPLOSION HAZARD DATA CONTINUED

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explosively. Containers may explode from internal pressure if confined to fire. Keep containers cool. Keep unnecessary people away.

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Eye Contact: contact with the eyes causes severe irritation and burns.

Skin Contact: severely irritating and corrosive upon skin contact. Can cause dermatitis. Material is well absorbed through skin.

Inhalation: excessive inhalation of vapors can cause nasal and respiratory irration.

Ingestion: toxic; can cause severe gastrointestinal irritation, vomiting, diarrhea, sweating, weakness, headache.

The primary routes of exposure are by inhalation of vapors and skin contact.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid

None known.

Product Name: UNICHEM 3270

Section: 06 REACTIVITY DATA CONTINUED

Incompatibility (Materials to Avoid)

Avoid contact with strong oxidizers or acidic materials.

Hazardous Decomposition Products

Smoke, carbon dioxide, carbon monoxide, oxides of nitrogen.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid

None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Eliminate sources of ignition. Persons not wearing suitable personal protective equipment should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled materials with sand or earth. Recover undamaged and minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.
Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S.EPA and/or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

If workplace exposure limit(s) of product or any component is exceeded, an NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure organic vapor type) under specified conditions. Engineering or administrative controls should be implemented to reduce exposure.

Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Product Name: UNICHEM 3270

Section: 08 SPECIAL PROTECTIVE INFORMATION CONTINUED

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist. Keep away from heat, sparks, and open flames and never use a cutting torch on or near container (even empty) or explosion may result. Vapors may travel to areas away from the work site and ignite.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Do not transfer to improperly marked container. Do not use pressure to empty container. Do not cut, heat, weld, or expose containers to flame or other sources of ignition. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should be grounded and bonded to receiving container(s) when being emptied. Containers should not be washed out and used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Components present in this product at a level which could require reporting under the statute are:

Product Name: UNICHEM 3270

Section: 10 REGULATORY INFORMATION CONTINUED

Component Name	RQ	TPQ	% Range
cyclohexylamine	1	10000	< 25%

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard
X Chronic Health Hazard
_ Sudden Release of Pressure
_ Reactive
X Fire

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
NONE		

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
NONE		

OSHA Exposure Limits

Component Name
cyclohexylamine
TWA ppm: 10.0 TWA MG/M3: 40.0

National Fire Protection Agency

2 Health
0 Reactive
2 Fire
ALK Other

Department of Transportation Shipping Information

Proper Shipping Name: Corrosive liquids, flammable, n.o.s.
Hazard Class: 8
Identification: UN2920
Packaging Group: PG II
Contains: alkylamines, cyclicamines

Section: 10 REGULATORY INFORMATION CONTINUED

Hazardous Substance RQ: *NONE* Emergency Response Guide Number: 60
Labels: Corrosive Flammable liquid

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

Product Name: UNICHEM 3141

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 2/10/91
Date Prepared 9/21/93
Version: 0000002

Product Name: UNICHEM 3141

Chemical Description:
Proprietary boiler water oxygen scavenger

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
sodium bisulfite	07631-90-5	< 30%

Section: 03 PHYSICAL DATA

Freezing Point: 13 Deg.F.
Boiling Point, 760 mm Hg: 212 Deg.F
Specific Gravity(H2O=1) : 1.200 Solubility in water: Complete
Appearance and Odor: Water white, clear liquid; slight musty odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): None

Extinguishing Media

Material is not combustible. Keep containers cool. Contain fire fighting liquids for proper disposal.

Special Fire Fighting Procedures

Do not enter confined fire space without proper personal protective equipment including NIOSH approved self-contained breathing apparatus with full facepiece operated in the positive pressure demand mode. Do not inject a solid stream of water or foam into hot, burning pools; this may cause splattering and increase fire intensity. Evacuate personnel to a safe area. Keep unnecessary people away.

Unusual Fire and Explosion Hazards

None

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Eye Contact: may cause irritation or burns if not promptly removed.

Product Name: UNICHEM 3141

Section: 05 HEALTH HAZARD DATA CONTINUED

Skin Contact may cause irritation.
Inhalation: may cause irritation of upper respiratory tract.
Ingestion: may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid

None known.

Incompatibility (Materials to Avoid)

Avoid contact with oxidizers or alkaline materials.

Hazardous Decomposition Products

Oxides of sulfur.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid

None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Persons not wearing suitable personal protective equipment

Product Name: UNICHEM 3141

Section: 07 SPILL OR LEAK PROCEDURES CONTINUED

should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled material with sand or earth. Recovered undamaged or minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.
Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S.EPA or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

A respirator is normally not required if this product is used with adequate ventilation.

Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist.

Product Name: UNICHEM 3141

Section: 09 SPECIAL PRECAUTIONS *CONTINUED*

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Do not transfer to improperly marked container. Do not use pressure to empty container. Do not cut, heat, weld, or expose containers to flame or other sources of ignition. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should be grounded and bonded to receiving container(s) when being emptied. Containers should not be washed out and used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard
_ Chronic Health Hazard
_ Sudden Release of Pressure
_ Reactive
_ Fire

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
NONE		

Product Name: UNICHEM 3141

Section: 10 REGULATORY INFORMATION CONTINUED

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
sodium bisulfite	07631-90-5	5000

OSHA Exposure Limits

Component Name

sodium bisulfite

TWA MG/M3: 5.0

National Fire Protection Agency

2 Health	0 Fire
0 Reactive	ACID Other

Department of Transportation Shipping Information

Proper Shipping Name: Bisulfites, inorganic, aqueous solutions, n.o.s.
Hazard Class: 8 Identification: UN2693
Packaging Group: PG III
Contains: sodium bisulfite
Hazardous Substance RQ: 16700# Emergency Response Guide Number: 60
Labels: Corrosive

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

Product Name: UNICHEM 2310

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 9/21/93
Date Prepared 10/07/93
Version: 0000003

Product Name: UNICHEM 2310

Chemical Description:
Proprietary Corrosion Inhibitor Blend

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
sodium nitrite	07632-00-0	< 25%

Section: 03 PHYSICAL DATA

Freezing Point: 22 Deg.F.
Boiling Point, 760 mm Hg: 212 Deg.F
Specific Gravity(H2O=1) : 1.160 Solubility in water: Complete
Appearance and Odor: Light yellow to water-white, clear liquid; very slight odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): NONE TCC

Extinguishing Media

This material is non-combustible. If this material is involved in a fire, use an extinguishing agent appropriate to surrounding materials. Water spray may be used to cool containers of this material exposed to a fire. Fire extinguishing materials should be collected for determination of proper disposal.

Special Fire Fighting Procedures

Fire fighters should wear self-contained breathing apparatus with a full facepiece operated in the pressure-demand or positive-pressure mode.

Unusual Fire and Explosion Hazards

None

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Eye Contact: may cause irritation with symptoms of redness, itching and pain.

Product Name: UNICHEM 2310

Section: 05 HEALTH HAZARD DATA CONTINUED

Skin Contact: may cause irritation with symptoms of redness, itching and pain. Prolonged contact may cause irritation and chronic dermatitis. Material absorbed through broken skin produces symptoms similar those for ingestion.

Inhalation: heated or agitated product may cause irritatation of the respiratory tract. Symptoms may include coughing, shortness of breath.

Ingestion: may cause gastroenteritis and abdominal pains. Purging and diuresis can be expected. Can cause nausea, vomiting, diarrhea, weakness, depression, headaches, skin rashes, dry skin, loss of hair, cracked lips, shock.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid

None known.

Incompatibility (Materials to Avoid)

Acids and strong reducing agents.

Hazardous Decomposition Products

Smoke, carbon dioxide, carbon monoxide, oxides of nitrogen.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Product Name: UNICHEM 2310

Section: 06 REACTIVITY DATA CONTINUED

Hazardous Polymerization -- Conditions to Avoid

None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Persons not wearing suitable personal protective equipment should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled material with sand or earth. Recovered undamaged or minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.
Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S.EPA or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

If a respirator is determined to be necessary, respirators approved by NIOSH and MSHA and selected for the hazard by qualified persons shall be used. Conditions unique to the workplace may allow air purifying devices selected for the contaminate(s) of concern, or require supplied air or self-contained breathing apparatus. Engineering or administrative controls should be implemented to reduce exposures.

Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also

Product Name: UNICHEM 2310

Section: 08 SPECIAL PROTECTIVE INFORMATION CONTINUED

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permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain residues (vapor, liquid, or solid), all hazard precautions given in this data sheet must be observed. Do not transfer to improperly marked container. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should not be washed out or used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard
_ Chronic Health Hazard
_ Sudden Release of Pressure
_ Reactive
_ Fire

Product Name: UNICHEM 2310

Section: 10 REGULATORY INFORMATION CONTINUED

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
NONE		

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
sodium nitrite	07632-00-0	100

OSHA Exposure Limits

Component Name
NONE

National Fire Protection Agency

2 Health	0 Fire
0 Reactive	____ Other

Department of Transportation Shipping Information

Proper Shipping Name: Environmentally hazardous substance, liquid,n.o.s.
Hazard Class: 9 Identification: UN3082
Packaging Group: PG III
Contains: sodium nitrite
Comments: Marine Pollutant
Hazardous Substance RQ: 400# Emergency Response Guide Number: 31
Labels: Class 9

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

Section: 10 REGULATORY INFORMATION CONTINUED

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END OF MSDS

Product Name: UNICHEM 2010

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 3/01/87
Date Prepared 10/13/93
Version: 0000002

Product Name: UNICHEM 2010

Chemical Description:
Proprietary Corrosion and Scale Inhibitor Blend

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
sodium molybdate	10102-40-6	< 25%

Section: 03 PHYSICAL DATA

Freezing Point: 25 Deg.F.
Boiling Point, 760 mm Hg: 212 Deg.F
Specific Gravity(H2O=1) : 1.200 Solubility in water: Complete
Appearance and Odor: Water white, clear liquid; slightly sweet odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): NONE

Extinguishing Media

This material is non-combustible. If this material is involved in a fire, use an extinguishing agent appropriate to surrounding materials. Water spray may be used to cool containers of this material exposed to a fire. Fire extinguishing materials should be collected for determination of proper disposal.

Special Fire Fighting Procedures

Fire fighters should wear self-contained breathing apparatus with a full facepiece operated in the pressure-demand or positive-pressure mode.

Unusual Fire and Explosion Hazards

May release toxic or corrosive material if container is destroyed in a fire.

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Eye Contact: vapors, liquid and mists are corrosive to the

Section: 05 HEALTH HAZARD DATA CONTINUED

eyes. Brief contact with vapors or liquid will be severely irritating. Brief contact of the liquid or mists can severely damage the eyes and prolonged contact may cause permanent eye injury which may be followed by blindness.

Skin Contact: vapors, mists and liquid are corrosive to the skin. Vapors or mists can irritate or burn. Prolonged liquid contact will burn or destroy surrounding tissue and death may accompany burns which extend over large portions of the body. Prolonged contact may cause chronic dermatitis. Absorption of this material through broken skin produces symptoms similar those for ingestion.

Inhalation: can cause irritation of nasal and respiratory passages. Vapors and mists are corrosive to the nose, throat and mucous membranes. Bronchitis, pulmonary edema, and chemical pneumonitis may occur. Irritation, coughing, chest pain, and difficulty in breathing may occur with brief exposure while prolonged exposure may result in more severe irritation and tissue damage. Breathing high concentrations may result in death.

Ingestion: vapors, mists and liquid are corrosive to the mouth and throat. Swallowing the liquid burns the tissues, causes severe abdominal pain, nausea, vomiting and collapse. Swallowing large quantities can cause death. Can cause nausea, vomiting, diarrhea, weakness, depression, headaches, skin rashes, dry skin, loss of hair, cracked lips and shock.

Chronic Effects of Exposure: may result in area of destruction of skin tissue or primary irritant dermatitis. Similarly, inhalation of vapors or mists may cause varying degrees of damage to the affected tissues and also increasing susceptibility to respiratory illness.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

Product Name: UNICHEM 2010

Section: 05 HEALTH HAZARD DATA CONTINUED

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid

None known.

Incompatibility (Materials to Avoid)

Avoid contact with strong oxidizers or acidic materials.

Hazardous Decomposition Products

Smoke, carbon dioxide, carbon monoxide, oxides of nitrogen.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid

None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Persons not wearing suitable personal protective equipment should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled material with sand or earth. Recovered undamaged or minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.
Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S.EPA or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

If a respirator is determined to be necessary, respirators

Product Name: UNICHEM 2010

Section: 08 SPECIAL PROTECTIVE INFORMATION CONTINUED

approved by NIOSH and MSHA and selected for the hazard by qualified persons shall be used. Conditions unique to the workplace may allow air purifying devices selected for the contaminate(s) of concern, or require supplied air or self-contained breathing apparatus. Engineering or administrative controls should be implemented to reduce exposures.

Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain residues (vapor, liquid, or solid), all hazard precautions given in this data sheet must be observed. Do not transfer to improperly marked container. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should not be washed out or used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable

Product Name: UNICHEM 2010

Section: 10 REGULATORY INFORMATION CONTINUED

Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard
_ Chronic Health Hazard
_ Sudden Release of Pressure
_ Reactive
_ Fire

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
NONE		

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
NONE		

OSHA Exposure Limits

Component Name
sodium molybdate
TWA MG/M3: 5.0

National Fire Protection Agency

2 Health
0 Reactive
0 Fire
ALK Other

Product Name: UNICHEM 2010

Section: 10 REGULATORY INFORMATION CONTINUED

Department of Transportation Shipping Information

Proper Shipping Name: Corrosive liquids, n.c.s.
Hazard Class: 8 Identification: UN1760
Packaging Group: PG III
Contains: sodium molybdate
Hazardous Substance RQ: *NONE* Emergency Response Guide Number: 60
Labels: Corrosive

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

Product Name: UNICHEM 1304

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 4/12/93
Date Prepared 9/21/93
Version: 0000002

Product Name: UNICHEM 1304

Chemical Description:
Proprietary cooling water treatment blend

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
potassium hydroxide	01310-58-3	< 15%

Section: 03 PHYSICAL DATA

Freezing Point: 5 Deg.F.
Boiling Point, 760 mm Hg: 212 Deg.F
Specific Gravity(H2O=1) : 1.340 Solubility in water: Soluble
Appearance and Odor: Clear, amber liquid; sweet odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): None

Extinguishing Media

This material is non-combustible. If this material is involved in a fire, use an extinguishing agent appropriate to surrounding materials. Water spray may be used to cool containers of this material exposed to a fire. Fire extinguishing materials should be collected for determination of proper disposal.

Special Fire Fighting Procedures

Fire fighters should wear self-contained breathing apparatus with a full facepiece operated in the pressure-demand or positive-pressure mode.

Unusual Fire and Explosion Hazards

May release toxic or corrosive material if container is destroyed in a fire.

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Eye Contact: vapors, liquid and mists are corrosive to the

Section: 05 HEALTH HAZARD DATA CONTINUED

eyes. Brief contact of the vapors will be cause irritation while brief contact of the liquid or mists will cause damage the eyes. Prolonged contact may cause permanent eye injury which may be followed by blindness.

Skin Contact: vapors, mists and liquid are corrosive to the skin. Vapors will irritate the skin and liquid will burn the skin. Prolonged liquid contact will burn or destroy surrounding tissue and death may accompany burns which extend over large portions of the body. Some skin absorption may occur.

Inhalation: vapors and mists are corrosive to the nose, throat, and mucous membranes. Bronchitis, pulmonary edema and chemical pneumonitis may occur. Irritation, coughing, chest pain, difficulty in breathing, headache and nausea may occur with brief exposure while prolonged exposure may result in more severe irritation and tissue damage. Breathing high concentrations may result in death.

Ingestion: vapors, mists and liquid are corrosive to the mouth and throat. Swallowing the liquid burns the tissues, causes severe abdominal pain, nausea, vomiting and collapse. Swallowing large quantities can cause death.

Chronic Effects of Exposure: may result in area of destruction of skin tissue or primary irritant dermatitis. Similarly, inhalation of vapors or mists may cause varying degrees of damage to the affected tissues and also increasing susceptibility to respiratory illness.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Product Name: UNICHEM 1304

Section: 05 HEALTH HAZARD DATA CONTINUED

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid

None known.

Incompatibility (Materials to Avoid)

Strong oxidizing agents and strong acids.

Hazardous Decomposition Products

Smoke, carbon dioxide, carbon monoxide, oxides of nitrogen.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid

None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Persons not wearing suitable personal protective equipment should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled material with sand or earth. Recovered undamaged or minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.
Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S.EPA or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

If a respirator is determined to be necessary, respirators approved by NIOSH and MSHA and selected for the hazard by qualified persons shall be used. Conditions unique to the workplace may allow air purifying devices selected for the contaminate(s) of concern, or require supplied air or self-

Product Name: UNICHEM 1304

Section: 08 SPECIAL PROTECTIVE INFORMATION CONTINUED

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contained breathing apparatus. Engineering or administrative controls should be implemented to reduce exposures.

Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain residues (vapor, liquid, or solid), all hazard precautions given in this data sheet must be observed. Do not transfer to improperly marked container. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should not be washed out or used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Product Name: UNICHEM 1304

Section: 10 REGULATORY INFORMATION CONTINUED

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard
X Chronic Health Hazard
_ Sudden Release of Pressure
_ Reactive
_ Fire

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
NONE		

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
potassium hydroxide	01310-58-3	1000

OSHA Exposure Limits

Component Name
potassium hydroxide

Ceiling MG/M3 2.0

National Fire Protection Agency

2 Health
0 Reactive
0 Fire
ALK Other

Department of Transportation Shipping Information

Proper Shipping Name: Corrosive liquids, n.o.s.

Product Name: UNICHEM 1304

Section: 10 REGULATORY INFORMATION CONTINUED

Hazard Class: 8 Identification: UN1760
Packaging Group: PG II
Contains: potassium hydroxide
Hazardous Substance RQ: 6700# Emergency Response Guide Number: 60
Labels: Corrosive

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

Product Name: UNICHEM 4500

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 3/09/92
Date Prepared 9/21/93
Version: 0000002

Product Name: UNICHEM 4500

Chemical Description:
Proprietary resin cleaner

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
sodium carbonate	00497-19-8	< 10%

Section: 03 PHYSICAL DATA

Freezing Point: 26 Deg.F.
Boiling Point, 760 mm Hg: 212 Deg.F
Specific Gravity(H2O=1) : 1.104 Solubility in water: Soluble
Appearance and Odor: Water white, clear liquid; no odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): None

Extinguishing Media

Material is not combustible. Keep containers cool. Contain fire fighting liquids for proper disposal.

Special Fire Fighting Procedures

Fire fighters should wear self-contained breathing apparatus with a full facepiece operated in the pressure-demand or positive-pressure mode.

Unusual Fire and Explosion Hazards

None

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Eye Contact: can cause irritation or burns and permanent eye injury, even blindness.
Skin Contact: prolonged or repeated exposure may cause skin irritation, even a burn.
Inhalation: mists may cause irritation to upper respiratory tract and eyes.

Product Name: UNICHEM 4500

Section: 05 HEALTH HAZARD DATA CONTINUED

Ingestion: can cause gastrointestinal irritation, nausea, vomiting, and diarrhea.
Systemic and Other Effects: excessive exposure may cause liver and kidney effects.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid

None known.

Incompatibility (Materials to Avoid)

Avoid contact with strong oxidizers or acidic materials.

Hazardous Decomposition Products

Smoke, carbon dioxide, carbon monoxide, oxides of nitrogen.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid

None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Persons not wearing suitable personal protective equipment

Product Name: UNICHEM 4500

Section: 07 SPILL OR LEAK PROCEDURES CONTINUED

should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled material with sand or earth. Recovered undamaged or minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.
Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S.EPA or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

If a respirator is determined to be necessary, respirators approved by NIOSH and MSHA and selected for the hazard by qualified persons shall be used. Conditions unique to the workplace may allow air purifying devices selected for the contaminate(s) of concern, or require supplied air or self-contained breathing apparatus. Engineering or administrative controls should be implemented to reduce exposures.

Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing

Product Name: UNICHEM 4500

Section: 09 SPECIAL PRECAUTIONS CONTINUED

vapors or mist.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain residues (vapor, liquid, or solid), all hazard precautions given in this data sheet must be observed. Do not transfer to improperly marked container. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should not be washed out or used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard
_ Chronic Health Hazard
_ Sudden Release of Pressure
_ Reactive
_ Fire

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
NONE		

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and

Product Name: UNICHEM 4500

Section: 10 REGULATORY INFORMATION CONTINUED

Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
NONE		

OSHA Exposure Limits

Component Name
NONE

National Fire Protection Agency

2 Health	0 Fire
0 Reactive	ALK Other

Department of Transportation Shipping Information

Proper Shipping Name: Nonregulated material
Hazardous Substance RQ: *NONE* Emergency Response Guide Number: 31
Labels: None

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

Product Name: UNICHEM 9850

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 9/21/93
Date Prepared 9/28/93
Version: 0000003

Product Name: UNICHEM 9850

Chemical Description:
Proprietary Antifoam Blend

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
NONE		

Section: 03 PHYSICAL DATA

Freezing Point: 32 Deg.F.
Boiling Point, 760 mm Hg: 212 Deg.F
Specific Gravity(H2O=1) : 0.990 Solubility in water: Soluble
Appearance and Odor: White, opaque liquid; characteristic odor

---

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): 600 Deg.F TCC

Extinguishing Media

This material is non-combustible. If this material is involved in a fire, use an extinguishing agent appropriate to surrounding materials. Water spray may be used to cool containers of this material exposed to a fire. Fire extinguishing materials should be collected for determination of proper disposal.

Special Fire Fighting Procedures

Fire fighters should wear self-contained breathing apparatus with a full facepiece operated in the pressure-demand or positive-pressure mode.

Unusual Fire and Explosion Hazards

None

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Eye Contact: liquid may cause minor irritation.
Skin Contact: no irritation expected under normal

Product Name: UNICHEM 9850

Section: 05 HEALTH HAZARD DATA CONTINUED

conditions.
Inhalation: not expected to present a hazard under normal conditions.
Ingestion: may cause gastrointestinal upset and nausea.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid

None known.

Incompatibility (Materials to Avoid)

Strong alkalies and acids.

Hazardous Decomposition Products

Thermal decomposition or burning may produce carbon dioxide and/or carbon monoxide and oxides of silicon.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid

None

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Wipe up with a cloth or paper (small quantity); or absorb

Product Name: UNICHEM 9850

Section: 07 SPILL OR LEAK PROCEDURES CONTINUED

unrecoverable product with inert materail such as clay, sand or vermiculite, and put into containers for disposal.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

Use a dust/mist mask if spray or mist is present.

Ventilation

Good general mechanical ventilation recommended.

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain residues (vapor, liquid, or solid), all hazard precautions given in this data sheet must be observed. Do not transfer to improperly marked container. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should not be washed out or used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Product Name: UNICHEM 9850

Section: 10 REGULATORY INFORMATION CONTINUED

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard
_ Chronic Health Hazard
_ Sudden Release of Pressure
_ Reactive
_ Fire

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
NONE		

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
NONE		

OSHA Exposure Limits

Component Name
NONE

National Fire Protection Agency

1 Health
0 Reactive
0 Fire
____ Other

Product Name: UNICHEM 9850

Section: 10 REGULATORY INFORMATION CONTINUED

Department of Transportation Shipping Information

Proper Shipping Name: Nonregulated material
Hazardous Substance RQ: *NONE* Emergency Response Guide Number: 31
Labels: None

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

END OF MSDS

MATERIAL SAFETY DATA SHEET

Product Name: UNICHEM 5025

Section: 01 PRODUCT IDENTIFICATION

UNICHEM INTERNATIONAL INC.
P.O. BOX 1499
707 N. LEECH
HOBBS, NM 88241-1499

Emergency Telephone 505-393-7751
Previous Version Date 10/13/93
Date Prepared 10/21/93
Version: 0000003

Product Name: UNICHEM 5025

Chemical Description:
Proprietary Scale Inhibitor

Section: 02 HAZARDOUS INGREDIENTS

Component Name	CAS#	% Range
proprietary organophosphonic acid		< 15%
hydrochloric acid	07647-01-0	< 5%

Section: 03 PHYSICAL DATA

Freezing Point: 22 Deg.F.
Boiling Point, 760 mm Hg: 212 Deg.F
Specific Gravity(H2O=1) : 1.068 Solubility in water: Soluble
Appearance and Odor: Clear, water white liquid; pungent odor.

Section: 04 FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method): > 212 Deg.F TCC

Extinguishing Media

This material is non-combustible. If this material is involved in a fire, use an extinguishing agent appropriate to surrounding materials. Water spray may be used to cool containers of this material exposed to a fire. Fire extinguishing materials should be collected for determination of proper disposal.

Special Fire Fighting Procedures

Fire fighters should wear self-contained breathing apparatus with a full facepiece operated in the pressure-demand or positive-pressure mode.

Unusual Fire and Explosion Hazards

May release toxic or corrosive material if container is destroyed in a fire.

Section: 05 HEALTH HAZARD DATA

Effects of Overexposure

Product Name: UNICHEM 5025

Section: 05 HEALTH HAZARD DATA CONTINUED

Eye Contact: causes irritation, redness and burning. May cause permanent damage if not promptly removed.
Skin Contact: causes mild to severe irritation, depending on the extent of contact. Prolonged exposures can cause dermatitis.
Inhalation: vapors can irritate the eyes, nose and throat and cause coughing.
Ingestion: causes chemical burns to the esophagus, mouth and throat. Aspiration of fluid into lungs can cause pulmonary edema and death.

Emergency and First Aid Procedures

SKIN

Wash with soap and water. Remove contaminated clothing and launder contaminated clothing before reuse. Get medical attention if redness or irritation develops.

EYES

Flush eyes immediately with large amounts of water for at least 15 minutes. Lift lower and upper lids occasionally. Get medical attention.

INHALATION

Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, administer oxygen. Keep person warm, quiet and get medical attention.

INGESTION

Call a physician immediately. Give victim a glass of water. Do NOT induce vomiting unless instructed by a physician or poison control center. Never give anything by mouth to an unconscious person.

Section: 06 REACTIVITY DATA

Stable (Y=Yes/N=No): Y

Stability -- Conditions to Avoid

None known.

Incompatibility (Materials to Avoid)

Avoid contact with oxidizers or alkaline materials.

Hazardous Decomposition Products

Smoke, carbon dioxide, carbon monoxide, oxides of nitrogen.

Hazardous Polymerization May Occur(Y=Yes/N=No): N

Hazardous Polymerization -- Conditions to Avoid

None

Product Name: UNICHEM 5025

Section: 06 REACTIVITY DATA CONTINUED

Section: 07 SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled

Persons not wearing suitable personal protective equipment should be excluded from area of spill until clean-up has been completed. Shut off source of spill if possible to do so without hazard. Prevent material from entering sewers or watercourses. Provide adequate ventilation. Contain spilled material with sand or earth. Recovered undamaged or minimally contaminated material for reuse or reclamation. Place all collected material and spill absorbents into DOT approved containers.
Advise authorities. If this product is an EPA hazardous substance (see Section 10), notify the U.S.EPA or the National Response Center. Additional notification pursuant to SARA Section 302/304 (40 CFR 355) may also be required.

Waste Disposal Method

Treatment, storage, transportation and disposal must be in accordance with EPA or State regulations under authority of the Resource Conservation and Recovery Act (40 CFR 260-271).

Section: 08 SPECIAL PROTECTIVE INFORMATION

Respiratory Protection

If workplace exposure limit(s) of product or any component is exceeded, an NIOSH/MSHA approved supplied air respirator is advised in absence of proper environmental controls. OSHA regulations permit other NIOSH/MSHA approved respirators (negative pressure acid gas cartridge type) under specified conditions. Engineering or administrative controls should be implemented to reduce exposures.

Ventilation

The use of mechanical dilution ventilation is recommended whenever this product is used in confined spaces, is heated above ambient temperatures or is agitated. When applicable, sufficient local ventilation should be provided to maintain employee exposures below safe working limits (TWA's).

Protective Gloves

Neoprene, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)

Eye Protection

Chemical splash goggles or face shield in compliance with OSHA regulations is advised; however OSHA regulations also permits safety glasses under certain conditions. The use of contact lenses is not recommended.

Product Name: UNICHEM 5025

Section: 08 SPECIAL PROTECTIVE INFORMATION CONTINUED

Other Protective Equipment

Eye wash and safety shower

Section: 09 SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

Avoid contact with eyes, skin or clothing. Avoid breathing vapors or mist.

Other Precautions

Containers of this material may be hazardous when emptied. Since emptied containers retain residues (vapor, liquid, or solid), all hazard precautions given in this data sheet must be observed. Do not transfer to improperly marked container. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Containers should not be washed out or used for other purposes.
FOR INDUSTRIAL USE ONLY

Section: 10 REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act Of 1986(SARA) Title III

Section 302/304-Extremely Hazardous Substances (40 CFR 355)

SARA requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). These values are subject to change and the regulations should be consulted to verify current statutory requirements.

Components present in this product at a level which could require reporting under the statute are:

Component Name	RQ	TPQ	% Range
NONE			

Section 311/312 Chemical Inventory Reporting Requirements (40 CFR 370)

The Superfund Amendments and Reauthorization Act (SARA) may require submission of reports (chemical list, MSDS, Tier I & Tier II) to the State Emergency Response Commission, Local Emergency Response Committee and the local fire department. The SARA physical and health hazards related to this product are:

X Acute Health Hazard
_ Chronic Health Hazard
_ Sudden Release of Pressure
_ Reactive
_ Fire

Section 313-List of Toxic Chemicals (40 CFR 372)

This product contains the following toxic chemicals subject

Product Name: UNICHEM 5025

Section: 10 REGULATORY INFORMATION CONTINUED

to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). This information should be included in all MSDSs that are copied and distributed for this material.

Component Name	CAS #	% Range
hydrochloric acid	07647-01-0	< 5%

CERCLA, 40 CFR 261 AND 302

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center 1-800-424-8802 of any release of a Hazardous Substances equal to or greater than the reportable quantities (RQs) listed in 40CFR 302.4. Values are given in pounds for the component and not the mixture, if applicable. (These values are subject to change and the regulations should be consulted to verify current statutory levels.)

Component Name	CAS #	CERCLA RQ
hydrochloric acid	07647-01-0	5000

OSHA Exposure Limits

Component Name
hydrochloric acid

Ceiling ppm: 5.0 Ceiling MG/M3 7.0

National Fire Protection Agency

2 Health
0 Reactive
0 Fire
ACID Other

Department of Transportation Shipping Information

Proper Shipping Name: Corrosive liquids, n.o.s.
Hazard Class: 8 Identification: UN1760
Packaging Group: PG II
Contains: phosphonic acid, hydrochloric acid
Hazardous Substance RQ: 100000# Emergency Response Guide Number: 60
Labels: Corrosive

Toxic Substances Control Act (TSCA), 40 CFR 261

This product (or components if product is a mixture) is in compliance with TSCA.

- -

Section 10 information is to remain attached to the material safety data sheet for this product.

- -

While UNICHEM INTERNATIONAL believes that the above data is correct, UNICHEM INTERNATIONAL expressly disclaims liability for any loss or injury arising out of the use of this information or the use of any materials designated.

- -

ADAMS SPECIAL

1	HMIS HEALTH
0	HMIS FLAMMABILITY
0	HMIS REACTIVITY
0	HMIS PERSONAL PROTECTION

SECTION I - IDENTIFICATION

MANUFACTURER'S NAME..... ADAMS CHEMICAL AND EQUIPMENT COMPANY, INC.
PHONE NUMBER..... 915 337 8942
EMERGENCY PHONE NUMBER... 915 697 2803
EFFECTIVE DATE..... SEPTEMBER, 1990
TRADE NAME..... ADAMS SPECIAL
CHEMICAL FAMILY..... SURFACTANTS
CAS NUMBER..... BLEND
CHEMICAL FORMULA..... BLEND

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	%	TLV (Units)	PROD. CAS #
PROPYLENE GLYCOL T BUTYL ETHER	<5	NONE LISTED	57018-52-7
SODIUM META SILICATE	<5		6834-92-0
SODIUM TRIPOLY PHOSPHATE	<5		NONE LISTED
NONYLPHENOL	<5		26027-38-3

SECTION III - PHYSICAL DATA

BOILING Point(F)..... APPROXIMATELY 212 DEGREES F
FREEZING POINT (F)..... NOT DETERMINED
VAPOR PRESSURE (mm Hg)... NOT APPLICABLE
VAPOR DENSITY (Air=1).... APPROXIMATELY 1
SOLUBILITY IN H20..... YES
APPEARANCE/ODOR..... ORANGE LIQUID
SPECIFIC GRAVITY (H20=1). APPROXIMATELY 1.18 9.84
PH..... 12.8

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT..... NON FLAMMABLE
LOWER FLAME LIMIT..... NON FLAMMABLE
HIGHER FLAME LIMIT..... NOT APPLICABLE
EXTINGUISH MEDIA..... NOT APPLICABLE
UNUSUAL FIRE HAZARD..... NONE

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE.... NOT LISTED

ROUTES OF ENTRY	INHALATION?	SKIN?	INGESTION?
	NONE	IRRITANT	IRRITANT

HEALTH HAZARDS ..... Acute, Irritating to skin and eyes. Chronic, May cause allergic skin reactions.

CARCINOGENICITY	NTP?	IARC MONOGRAPHS?	OSHA REGULATED
	NO	NO	NO

OVER EXPOSURE EFFECTS.... Skin irritation develops slowly after contact. Eye irritation develops immediately upon contact.

FIRST AID PROCEDURES..... In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get medical attention; for skin, wash thoroughly with soap and water.

SECTION VI - REACTIVITY DATA

CHEMICAL STABILITY..... STABLE
CONDITIONS TO AVOID..... NONE
INCOMPATIBLE MATERIALS... NONE
DECOMPOSITION PRODUCTS... NONE
HAZARDOUS POLYMERIZATION. WILL NOT OCCUR
POLYMERIZATION AVOID..... NONE KNOWN

SECTION VII - SPILL OR LEAK PROCEDURE

FOR SPILL ..... In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations.

WASTE DISPOSAL METHOD.... Hazardous Waste. Follow Federal and State Regulations.

SECTION VIII - SPECIAL PROTECTION

RESPIRATORY PROTECTION... NOT NORMALLY REQUIRED
VENTILATION..... NOT NORMALLY REQUIRED
MECHANICAL EXHAUST..... NOT NORMALLY REQUIRED
LOCAL EXHAUST..... NOT NORMALLY REQUIRED
PROTECTIVE GLOVES..... Wear impervious gloves
EYE PROTECTION..... Use goggles or face shield if spashing is likely
OTHER PROTECTIVE EQUIPMENT..... None

SECTION IX - SPECIAL HANDLING

HANDLING AND STORAGE..... Wear impervious gloves Use goggles or face shield if spashing is likely

PRECAUTIONARY MEASURES... Avoid contact with skin, eyes, and clothing. After handling this product, wash hands before eating, drinking, or smoking. If contact occurs, remove contaminated clothing. If needed, take firstaid action shown in Section V.

HAZARD CLASS..... D002 CORROSIVE
DOT SHIPPING NAME..... CORROSIVE LIQUID CONTAINS POTASSIUM HYDROXIDE
REPORTABLE QUANTITY (RQ). 6666 POUNDS BASED ON POTASSIUM HYDROXIDE
UN NUMBER..... UN 1760

NA #..... NOT APPLICABLE
PACKAGING SIZE..... VARIED

SECTION X - REGULATORY

EPA ACUTE..... YES
EPA CHRONIC..... NO
EPA IGNITABILITY..... NO
EPA REACTIVITY..... NO
EPA SUDDEN RELEASE OF PRESSURE..... NO

CERCLA RQ VALUE..... 6666 POUNDS BASED ON POTASSIUM HYDROXIDE

SARA TPQ..... NONE
SARA RQ..... NONE
SECTION 313..... NO

EPA HAZARD WASTE #..... YES
CLEANAIR..... YES
CLEAN WATER..... YES

FOOT NOTES

PREPARED BY:..... HAZARDOUS MATERIAL CHEMISTS, MIDLAND TEXAS
915 697 2803
REVISED DATE..... SEPTEMBER, 1990

THIS PRODUCT'S SAFETY INFORMATION IS PROVIDED TO ASSIST OUR CUSTOMERS IN ASSESSING COMPLIANCE WITH HEALTH, SAFETY AND ENVIRONMENTAL REGULATIONS. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA AVAILABLE TO US AND IS BELIEVED TO BE ACCURATE, ALTHOUGH NO GUARANTEE OR WARRANTY IS PROVIDED BY THE COMPANY IN THIS RESPECT. SINCE THE USE OF THIS PRODUCT IS WITHIN THE EXCLUSIVE CONTROL OF THE USER, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THIS PRODUCT. SUCH CONDITIONS SHOULD COMPLY WITH ALL FEDERAL REGULATIONS CONCERNING THE PRODUCT.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240
PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

TCLP ANALYSIS REPORT

Company:	Texaco E & P	Date:	02/15/96
Address:	PO Box 1929	Lab #:	H2405
City, State:	Eunice New Mexico 88231		
Project Name:	Texaco Plant		
Location:	Eunice, NM		
Sampled by:	RB	Date:	02/12/96
Sample Type:	Water	Sample Condition:	intact

Sample ID #1: #4 Waste Water Pit
#2: Able Fresh Water Well
#3: N. Plant Fresh Water Well
#4: N. Plant Waste Water

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULT 1	RESULT 2	RESULT 3	RESULT 4	UNITS
Ignitability (Pensky-Martens Closed Cup)	85	>140	>140	95	F
Corrositivity (pH)	10.03	9.95	8.06	8.96	
Reactivity-S	0.8	0.5	0.8	0.5	mg/L
Reactivity-CN	< 0.02	< 0.02	< 0.02	< 0.02	mg/L

METHODS: HWC - EPA SW 846-7.3, 7.2, 1010

Mitch Irvin

2/16/96
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240
PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

TCLP ANALYSIS REPORT

Company: Texaco E & P
Address: PO Box 1929
City, State: Eunice, New Mexico 88231
Project Name: Texaco S. Plant
Location: Eunice NM
Sampled by: RB
Sample Type: water

Sample ID# 1: #4 Waste water Pit
Sample ID# 2: Able Fresh Water Well

Date: 02/15/96
Lab #: H2405 1-2

Date: 02/12/96
Sample Condition: intact
Units: ppm

TCLP SEMI VOLATILE ORGANICS

PARAMETER	SAMPLE 1	SAMPLE 2	&IA	QC	True Value
Pyridine	<0.010	<0.010	89	0.089	0.100
1,4-Dichlorobenzene	<0.010	<0.010	83	0.083	0.100
o-Cresol	0.034	<0.010	89	0.089	0.100
m,p-Cresol	0.059	<0.020	88	0.175	0.200
Hexachloroethane	<0.010	<0.010	86	0.086	0.100
Nitrobenzene	<0.010	<0.010	88	0.088	0.100
Hexachloro-1,3-butadiene	<0.010	<0.010	81	0.081	0.100
2,4,6-Trichlorophenol	<0.010	<0.010	82	0.082	0.100
2,4,5-Trichlorophenol	<0.010	<0.010	85	0.085	0.100
2,4-Dinitrotoluene	<0.010	<0.010	85	0.085	0.100
Hexachlorobenzene	<0.010	<0.010	87	0.087	0.100
Pentachlorophenol	<0.010	<0.010	82	0.082	0.100

	% Recovery		Relative % Difference
Fluorophenol	27	27	4
Phenol-d5	29	29	4
Nitrobenzene-d5	71	71	1
2-Fluorobiphenyl	77	77	1
2,4,6-Tribromophenol	74	74	2
Terphenyl-d14	85	85	12

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240
PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

TCLP VOLATILES

Parameter	Sample 1	Sample 2	&IA	QC	True Value
Vinyl chloride	<0.001	<0.001	107	0.107	0.100
1,1-Dichloroethylene	<0.001	<0.001	89	0.089	0.100
Methyl ethyl ketone	<0.001	<0.001	116	0.116	0.100
Chloroform	<0.001	<0.001	115	0.115	0.100
1,2-Dichloroethane	<0.001	<0.001	118	0.118	0.100
Benzene	4.450	<0.001	119	0.119	0.100
Carbon tetrachloride	<0.001	<0.001	118	0.118	0.100
Trichloroethylene	<0.001	<0.001	113	0.113	0.100
Tetrachloroethylene	<0.001	<0.001	117	0.117	0.100
Chlorobenzene	<0.001	<0.001	112	0.112	0.100
1,4-Dichlorobenzene	<0.001	<0.001	105	0.105	0.100

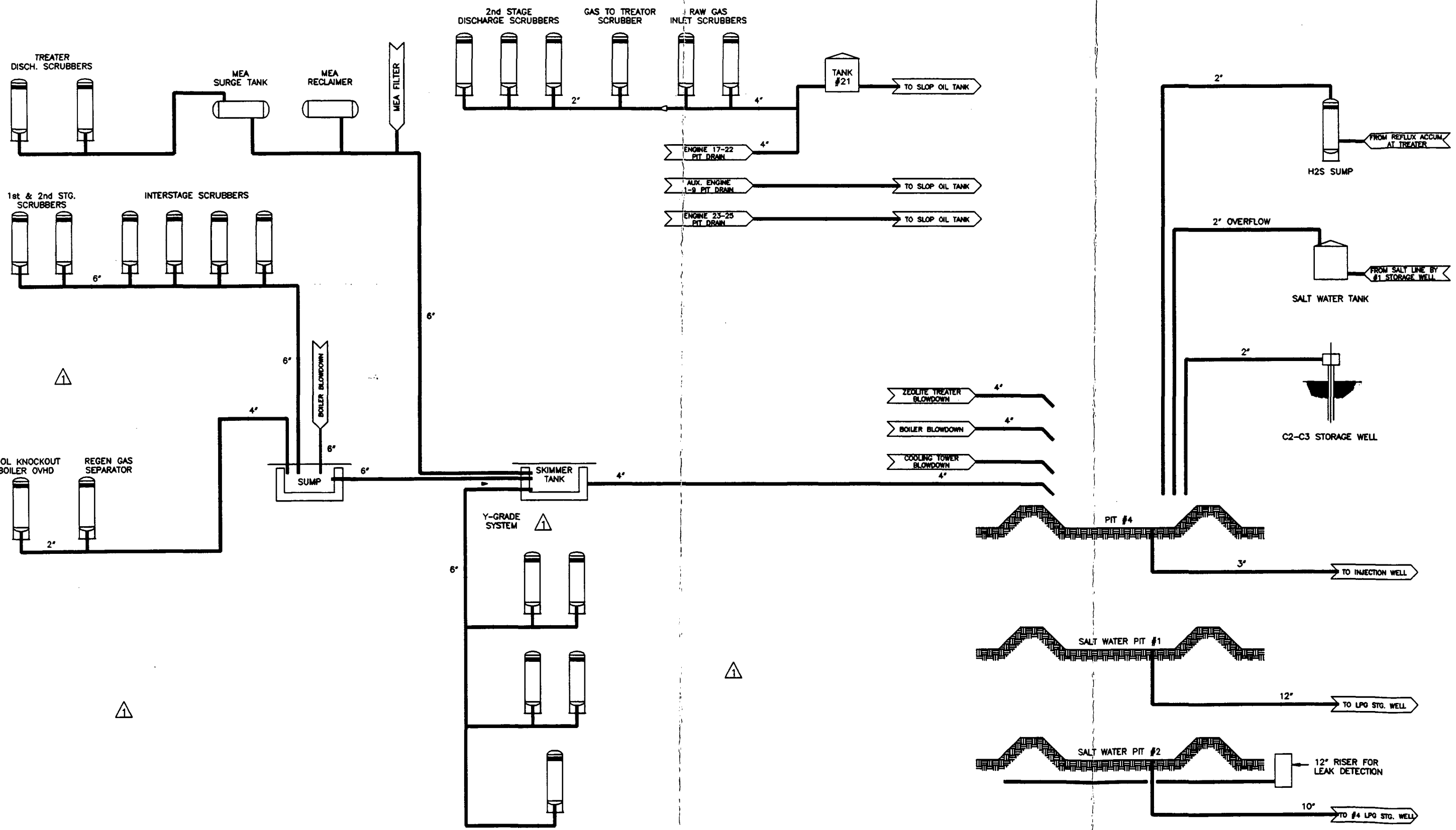
	% Recovery		Relative % Difference
Dibromofluromethane	104	111	9
Toluene - d8	94	103	1
Bromofluorobenzene	93	99	1

METHODS: EPA SW -846-8260, 1311

Mitch Irvin

2/16/96
Date

APPENDIX 3



GENERAL NOTES:

REVISIONS				
MK.	DESCRIPTION		BY	CHK
P	ISSUE FOR N.M. OCD PERMIT		JH	
1	GENERAL REVISIONS	2/98	MCB	

REFERENCE DRAWINGS			
DRAWING NO.	TITLE	DRAWING NO.	TITLE

TEXACO | NATURAL GAS PLANTS AND LIQUIDS DIVISION

APPROVED:	DATE	TITLE: WASTE WATER SYSTEM BLOCK FLOW DIAGRAM EUNICE #1 GAS PLANT
CHECKED:		LEA COUNTY NEW MEXICO
DESIGNED:		
DRAWN: HARBOUR	1-91	EST. NO: OCD SCALE: NONE DWG. NO: D-0010-20-6006 REV: 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RATTLESNAKE CANYON QUADRANGLE
NEW MEXICO—LEA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

5348 IV (OIL CENTER) 1:62 500

5348 I NE (EUNICE NE)

5348 II NE (CUSTER MOUNTAIN)

5348 II NW (JAL NW)

5348 II SW (JAL SW)

5348 I NW (EUNICE)

5348 I SW (EUNICE SW)

5348 I SE (EUNICE SE)

103° 15′ — 103° 07′ 30″ — 32° 22′ 30″ — 32° 15′ — 17′ 30″ — 20′ — 10′

R. 36 E. — 12° 30″ R. 37 E.

T. 22 S. — T. 23 S. — T. 24 S.

EUNICE 4.3 MI. — LOVINGTON 45 MI. — HOBBS 23 MI. — JAL 10 MI. — KERMIT, TEX. 29 MI.

870 000 FEET — 840 000 FEET — 460 000 FEET — 500 000 FEET

EUNICE #1

TEAGUE SWITCH COMPRESSOR STATION

MONUMENT JAL OIL FIELD

TEXAS — NEW MEXICO PIPELINE

Oil Wells — Gravel Pit — Gas Plant — Gas Well — Water Tank — Chemical Plant — Substa — Radio Towers — Johnson — Maypens — Simpson — Teague — Draw — Monument Draw — Rattlesnake Canyon

BM 3335 — BM 3336 — BM 3308 — BM 3301

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1968. Field checked 1969

Polyconic projection. 1927 North American datum
10,000-foot grid based on New Mexico coordinate system, east zone
1000-meter Universal Transverse Mercator grid ticks, zone 13, shown in blue

Fine red dashed lines indicate selected fence lines

Revisions shown in purple compiled from aerial photographs taken 1977 and other source data. This information not field checked. Map edited 1979

UTM GRID AND 1979 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

GN — MN — 0°58′ 17 MILS — 10° 178 MILS

To place on the predicted North American Datum 1983 move the projection lines 9 meters south and 44 meters east as shown by dashed corner ticks

SCALE 1:24 000

1 MILE — 1000 0 1000 2000 3000 4000 5000 6000 7000 FEET — 1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Primary highway, all weather, hard surface	Light-duty road, all weather, improved surface
Secondary highway, all weather, hard surface	Unimproved road, fair or dry weather
State Route	

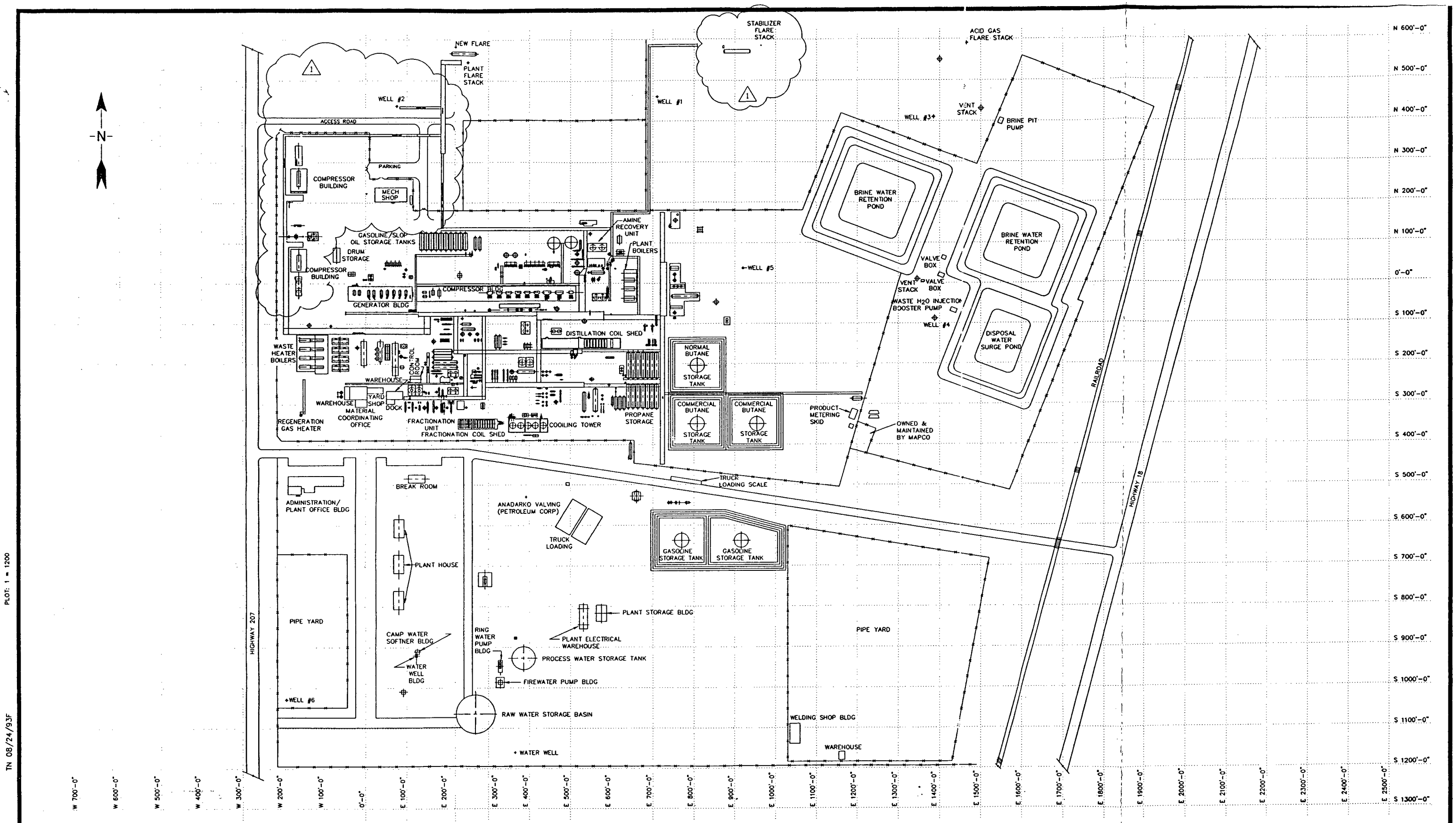
NEW MEXICO
QUADRANGLE LOCATION

RATTLESNAKE CANYON, N. MEX.
N3215—W10307.5/7.5

1969
PHOTOREVISED 1979
DMA 5348 I SW—SERIES V881

EUNICE G.P.
PLT. # 0010 & 0020

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1980



PLOT: 1 = 1200

TN 08/24/93F

GAS/92210/SOUTH 72-5006

GENERAL NOTES:

REVISIONS

MK.	DESCRIPTION	DATE	CK	APPR
0	ISSUE FOR PSM REVIEW	08/31/93	HP	
1	GENERAL REVISION	02/18/94	RJR	
2	M.O.C.#42 ADD 0010-39-37	1/96	MCB	
	REMOVE #4 BOILER \ MOC#84			

REFERENCE DRAWINGS

DRAWING NO.	TITLE	DRAWING NO.	TITLE
D-0010-73-5000	EQUIPMENT NUMBER/DESCRIPTION LEGEND		
D-0010-73-5001	EQUIPMENT NUMBER/DESCRIPTION LEGEND		
D-0010-73-5002	EQUIPMENT NUMBER/DESCRIPTION LEGEND		
D-0010-73-5003	EQUIPMENT LOCATION DRAWING INDEX		
D-0010-73-5004	EQUIPMENT LOCATION PLAN		
THRU			
D-0010-73-5019	EQUIPMENT LOCATION PLAN		

NOTICE

TEXACO | NATURAL GAS PLANTS AND LIQUIDS DIVISION

APPROVED: J.HARBOUR	DATE 09/03/93	TITLE: PLOT PLAN
CHECKED: E.TOAL	08/31/93	EUNICE SOUTH GAS PLANT
DESIGNED:		LEA COUNTY NEW MEXICO
DRAWN: TN	04/15/93	EST. NO: 925601

SCALE 1"=100' | DWG. NO. D-0010-72-5006 | REV. 2

APPENDIX 6

THE REPRODUCTION OF

THE

FOLLOWING

DOCUMENT (S)

CANNOT BE IMPROVED

DUE TO

THE CONDITION OF

THE ORIGINAL

POLY-FLEX

APPENDIX A

Chemical Resistance Information

Poly-Flex and Dura-Flex polyethylenes are primarily inert and stable, and contain no plasticizers. Since chemical resistance data for Dura-Flex is limited, the following chart (compiled by Nalgene), which documents such data for Low Density Polyethylene (LDPE) and High Density Polyethylene (HDPE), is included. The chemical resistance qualities for LDPE can be used only as a guideline for Dura-Flex material. It is important to note that chemical mixtures do not necessarily affect plastics in the same way that the component chemicals of the same mixture will individually. Chemical attack is influenced by temperature, length of contact with material, chemical concentration, and chemical composition. It is therefore recommended that immersion tests be conducted during the design stage of a project, to confirm the stability of the selected membrane type.

- **E** — 30 days of constant exposure cause no damage. Plastic may even tolerate for years.
- **G** — Little or no damage after 30 days of constant exposure to the reagent.
- **F** — Some effect after 7 days of constant exposure to the reagent. Depending on the plastic, the effect may be crazing, cracking, loss of strength, or discoloration. Solvents may cause softening, swelling and permeation losses with LDPE and HDPE. The solvent effects on these resins are normally reversible; the part will ususally return to its normal condition after evaporation.
- **N** — Not recommended for continuous use. Immediate damage may occur. Depending on the plastic, the effect will be a more severe crazing, cracking, loss of strength, discoloration, deformation, dissolution or permeation loss.

The first letter of each pair applies to conditions at 20° C (68° F); the second to those at 50° C (122° F).

CHEMICAL	LDPE	HDPE	CHEMICAL	LDPE	HDPE
Acetaldehyde	GN	GF	Benzaldehyde	EG	EE
Acetamide, Sat.	EE	EE	Benzene	FN	GG
Acetic Acid, 5%	EE	EE	Benzoic Acid, Sat.	EE	EE
Acetic Acid, 50%	EE	EE	Benzyl Acetal	EG	EE
Acetic Anhydride	NN	FF	Benzyl Alcohol	NN	FN
Acetone	EE	EE	Bromine	NN	FN
Acetonitrile	EE	EE	Bromobenzene	NN	FN
Acrylonitrile	EE	EE	Bromoform	NN	NN
Adipic Acid	EG	EE	Butadiene	NN	FN
Alanine	EE	EE	Butyl Chloride	NN	NN
Allyl Alcohol	EE	EE	n-Butyl Acetate	GF	EG
Aluminum Hydroxide	EG	EE	n-Butyl Alcohol	EE	EE
Aluminum Salts	EE	EE	sec-Butyl Alcohol	EG	EE
Amino Acids	EE	EE	tert-Butyl Alcohol	EG	EE
Ammonia	EE	EE	Butyric Acid	NN	FN
Ammonium Acetate, Sat.	EE	EE	Calcium Hydroxide, Conc.	EE	EE
Ammonium Glycolate	EG	EE	Calcium Hypochlorite, Sat.	EE	EE
Ammonium Hydroxide, 5%	EE	EE	Carbazole	EE	EE
Ammonium Hydroxide, 30%	EG	EE	Carbon Disulfide	NN	NN
Ammonium Oxalate	EG	EE	Carbon Tetrachloride	FN	GF
Ammonium Salts	EE	EE	Cedarwood Oil	NN	FN
n-Amyl Acetate	GF	EG	Cellosolve Acetate	EG	EE
Amyl Chloride	NN	FN	Chlorobenzene	NN	FN
Aniline	EG	EG	Chlorine, 10% in Air	GN	EF
Aqua Regia	NN	NN	Chlorine, 10% (Moist)	GN	GF

APPENDIX A

Chemical Resistance Information (Cont'd.)

CHEMICAL	LDPE	HDPE
Chloroacetic Acid	EE	EE
p-Chloroacetophenone	EE	EE
Chloroform	FN	GF
Chromic Acid, 10%	EE	EE
Chromic Acid, 50%	EE	EE
Cinnamon Oil	NN	FN
Citric Acid, 10%	EE	EE
Cresol	NN	FN
Cyclohexane	FN	FN
Cyclohexanone	NN	FN
Cyclopentane	NN	FN
DeCalin	GF	EG
n-Decane	FN	FN
Diacetone Alcohol	FN	EE
o-Dichlorobenzene	FN	FF
p-Dichlorobenzene	FN	GF
1,2-Dichloroethane	NN	NN
2,4-Dichlorophenol	NN	NN
Diethyl Benzene	NN	FN
Diethyl Ether	NN	FN
Diethyl Ketone	GF	GG
Diethyl Malonate	EE	EE
Diethylamine	NN	FN
Diethylene Glycol	EE	EE
Diethylene Glycol Ethyl Ether	EE	EE
Dimethyl Acetamide	FN	EE
Dimethyl Formamide	EE	EE
Dimethylsulfoxide	EE	EE
1,4-Dioxane	GF	GG
Dipropylene Glycol	EE	EE
Ether	NN	FN
Ethyl Acetate	EE	EE
Ethyl Alcohol (Absolute)	EG	EE
Ethyl Alcohol, 40%	EG	EE
Ethyl Benzene	FN	GF
Ethyl Benzoate	FF	GG
Ethyl Butyrate	GN	GF
Ethyl Chloride, Liquid	FN	FF
Ethyl Cyanoacetate	EE	EE
Ethyl Lactate	EE	EE
Ethylene Chloride	GN	GF
Ethylene Glycol	EE	EE
Ethylene Glycol Methyl Ether	EE	EE
Ethylene Oxide	FF	GF
Fatty Acids	EG	EE
Fluorides	EE	EE
Fluorine	FN	GN
Formaldehyde, 10%	EE	EE
Formaldehyde, 40%	EG	EE
Formic Acid, 3%	EG	EE
Formic Acid, 50%	EG	EE
Formic Acid, 98-100%	EG	EE
Freon TF	EG	EG
Fuel Oil	FN	GF
Gasoline	FN	GG
Glacial Acetic Acid	EG	EE
Glutaraldehyde (Disinfectant)	EG	EE
Glycerine	EE	EE
n-Heptane	FN	GF
Hexane	NN	GF
Hydrazine	NN	NN
Hydrochloric Acid, 1-5%	EE	EE
Hydrochloric Acid, 20%	EE	EE
Hydrochloric Acid, 37%	EE	EE
Hydrofluoric Acid, 4%	EG	EE
Hydrofluoric Acid, 48%	EE	EE
Hydrogen Peroxide, 3%	EE	EE
Hydrogen Peroxide, 30%	EG	EE
Hydrogen Peroxide, 90%	EG	EE
Iodine Crystals	NN	NN
Isobutyl Alcohol	EE	EE
Isopropyl Acetate	GF	EG
Isopropyl Alcohol	EE	EE
Isopropyl Benzene	FN	GF
Isopropyl Ether	NN	NN
Jet Fuel	FN	FN
Kerosene	FN	GG
Lacquer Thinner	NN	FN

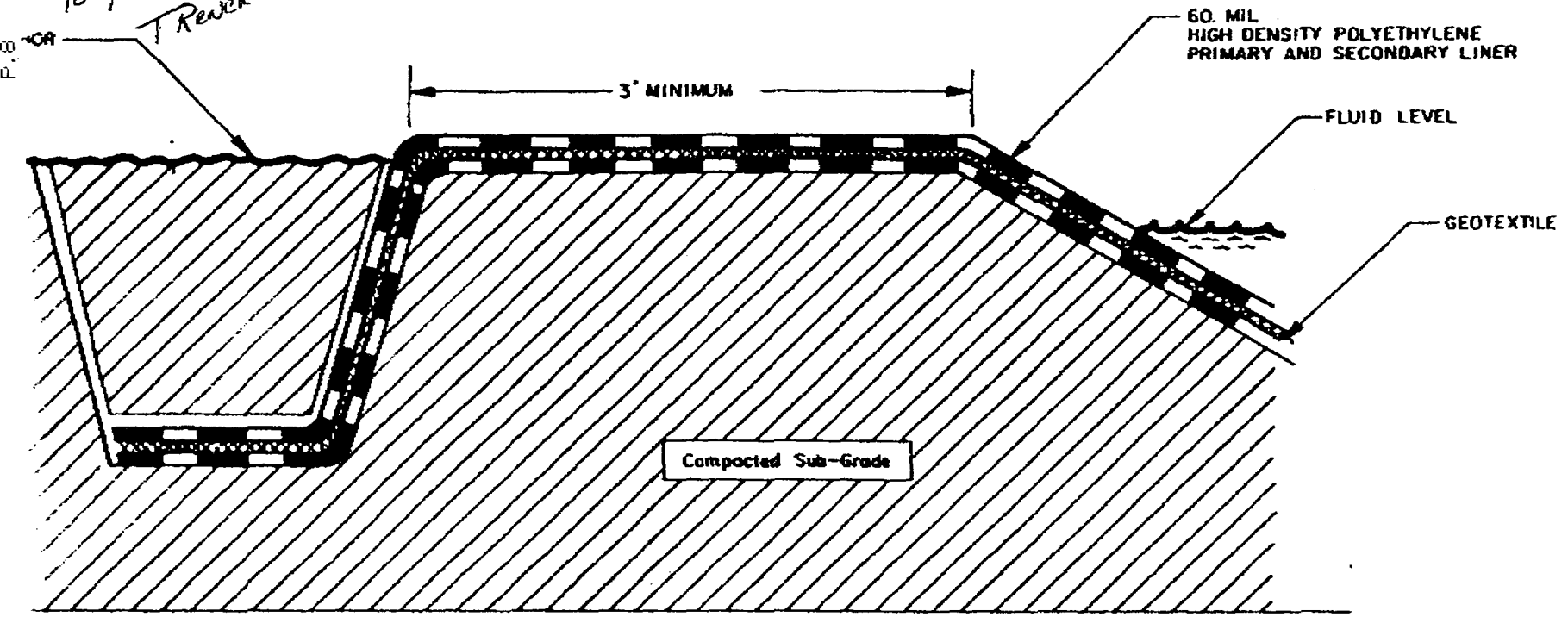
POLYFLEX
POLYETHYLENE GEOMEMBRANES

Chemical Resistance Information (Cont'd.)

CHEMICAL	LDPE	HDPE
Lactic Acid, 3%	EG	EE
Lactic Acid, 85%	EE	EE
Mercury	EE	EE
2-Methoxyethanol	EG	EE
Methoxyethyl Oleate	EG	EE
Methyl Acetate	FN	FF
Methyl Alcohol	EE	EE
Methyl Ethyl Ketone	EG	EE
Methyl Isobutyl Ketone	GF	EG
Methyl Propyl Ketone	GF	EG
Methyl-t-butyl Ether	NN	FN
Methylene Chloride	FN	GF
Mineral Oil	GN	EE
Mineral Spirits	FN	FN
Nitric Acid, 1-10%	EE	EE
Nitric Acid, 50%	GG	GN
Nitric Acid, 70%	FN	GN
Nitrobenzene	NN	FN
Nitromethane	NN	FN
n-Octane	EE	EE
Orange Oil	FN	GF
Ozone	EG	EE
Perchloric Acid	GN	GN
Perchloroethylene	NN	NN
Phenol, Crystals	GN	GF
Phenol, Liquid	NN	NN
Phosphoric Acid, 1-5%	EE	EE
Phosphoric Acid, 85%	EE	EE
Picric Acid	NN	NN
Pine Oil	GN	EG
Potassium Hydroxide, 1%	EE	EE
Potassium Hydroxide, Conc.	EE	EE
Propane Gas	NN	FN
Propionic Acid	FN	EF
Propylene Glycol	EE	EE
Propylene Oxide	EG	EE
Resorcinol, Sat.	EE	EE
Resorcinol, 5%	EE	EE
Salicylaldehyde	EG	EE
Salicylic Acid, Powder	EE	EE
Salicylic Acid, Sat.	EE	EE
Salt Solutions, Metallic	EE	EE
Silicone Oil	EG	EE
Silver Acetate	EE	EE
Silver Nitrate	EG	EE
Skydrol LD4	GF	EG
Sodium Acetate, Sat.	EE	EE
Sodium Hydroxide, 1%	EE	EE
Sodium Hydroxide, 50% to Sat.	GG	EE
Sodium Hypochlorite, 13%	EE	EE
Stearic Acid, Crystals	EE	EE
Sulfuric Acid, 1-6%	EE	EE
Sulfuric Acid, 20%	EE	EE
Sulfuric Acid, 60%	EG	EE
Sulfuric Acid, 98%	GG	GG
Sulfur Dioxide, Liq., 46 psig	NN	FN
Sulfur Dioxide, Wet or Dry	EE	EE
Sulfur Salts	FN	GF
Tartaric Acid	EE	EE
Tetrahydrofuran	FN	GF
Thionyl Chloride	NN	NN
Toluene	FN	GG
Tributyl Citrate	GF	EG
Trichloroacetic Acid	FN	FF
1,2,4-Trichlorobenzene	NN	NN
Trichloroethane	NN	FN
Trichloroethylene	NN	FN
Triethylene Glycol	EE	EE
2,2,4-Trimethylpentane	FN	FN
Tripropylene Glycol	EE	EE
Tris Buffer, Solution	EG	EG
Turpentine	FN	GG
Undecyl Alcohol	EF	EG
Urea	EE	EE
Vinylidene Chloride	NN	FN
Xylene	GN	GF
Zinc Stearate	EE	EE

APPENDIX 7

12" x 18" Anchor Trench

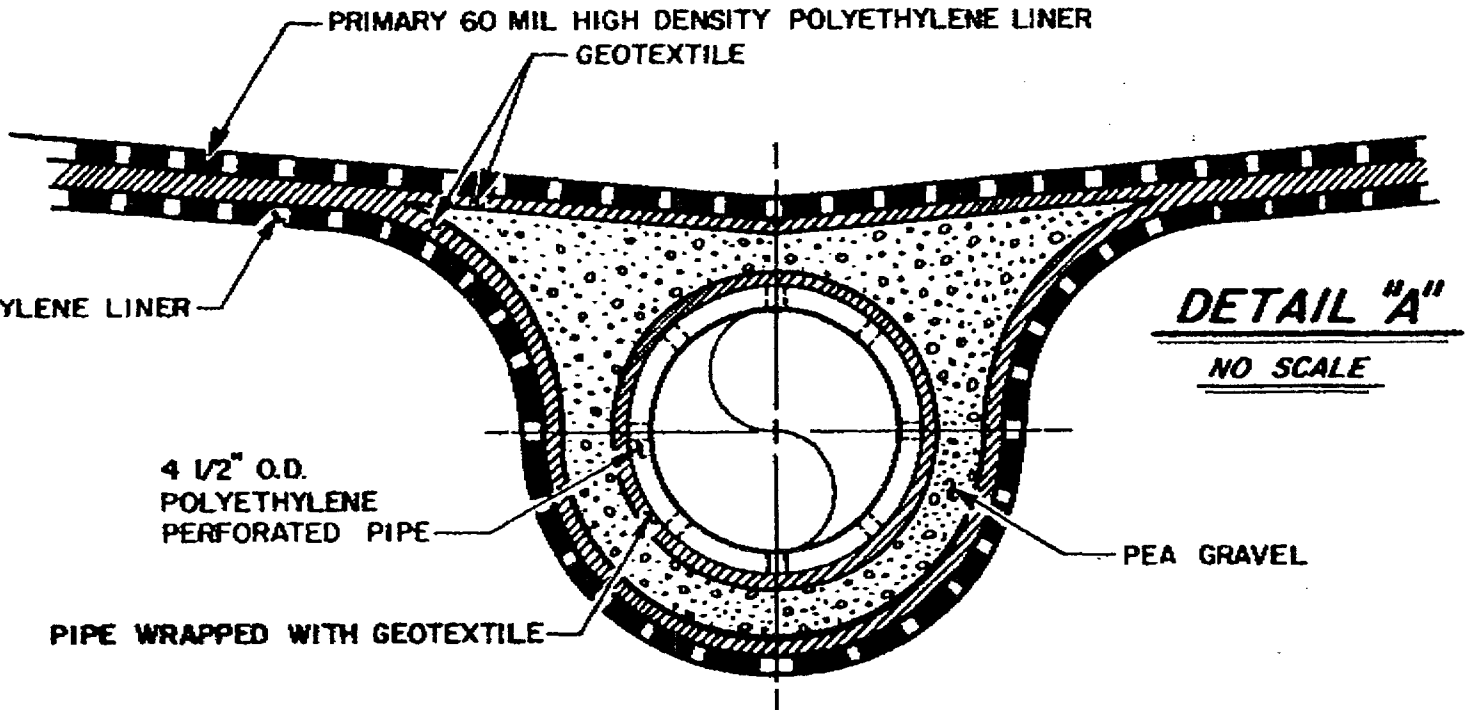


#4 Pit

REVISIONS			NUMBER	REFERENCE DRAWINGS	NOTICE				
FOR APPROVAL						DWN	RAC	5/89	ANCHOR TRENCH DETAIL
FOR BIDS					TEXACO USA	CHKD			
						PIPE			
						INSTR			
						ELECT			
						STR			TEXACO USA
						APP			NATURAL GAS PLANTS DIVISION
						COOR			

SECTION "A-A"

NO SCALE



DETAIL "A"

NO SCALE

S:

be installed atop, and evenly rolled, 1-1/2" to 2" thick layer of acted to a 95% Proctor Density. No sharp-edged exposed stones te will be allowed.

shall be made w/stone aggregate and shall develop a compressive 3000 PSI in 28 days.

nstruction shall be in accordance w/ACI-318, latest edition.

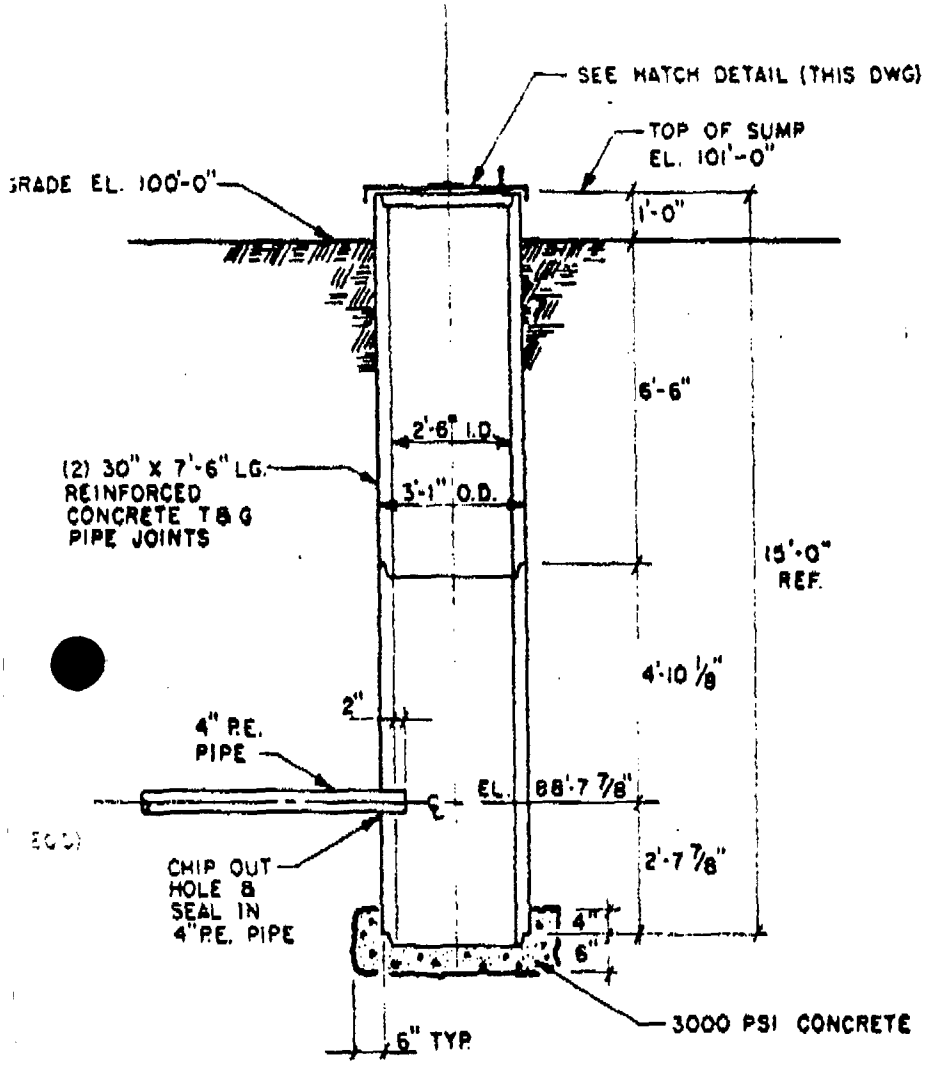
g bar shall be ASTM A-615 Gr. 60, and is dimensioned out to out.

shall rest on undisturbed soil or compacted sand returned to a 95% ity.

l overlap 12" or 24 bar diameters, whichever is greater.

REVISIONS

MK	DESCRIPTION	DATE	BY	CHK
A	Issue for approval	3-89	RAC	
B	Issue for bids	3-89	RAC	
	#4 Pit			



#4 pit

SUMP DETAIL

SCALE: 1" = 4'