EPFS GROUNDWATER PITS
1998 CLOSURE REPORT

NICKLES #1
Meter/Line ID - 73034

SITE DETAILS

Legals - Twn: 31N **Rng:** 13W **Sec:** 11 **Unit:** K
NMOCD Hazard Ranking: 30 **Land Type:** Fee
Operator: Fuller Petroleum

PREVIOUS ACTIVITIES

Site Assessment: January- 95 **Excavation:** February- 95 (40 cy) **Soil Boring:** September- 95
Re-excavation: November-95 (942 cy) **Monitoring Well:** March-97

The pit was excavated to the practical extent of the trackhoe, which was approximately 12 feet beneath ground surface (bgs). A composite soil sample was collected from the excavation bottom and four walls. Approximately 40 cubic yards of impacted soil were removed during the excavation. The headspace soil reading from the excavation bottom was 206 ppm. Soil analytical was as follows: benzene – 52.5 mg/kg, total BTEX – 1500 mg/kg, and TPH (418.1) 7,310 mg/kg.

One soil boring was drilled in the center of the former pit. Groundwater was encountered at approximately 19 feet bgs. One soil sample was collected from 15-17 feet bgs. Soil analytical was as follows: benzene – 6.9 mg/kg, total BTEX – 113 mg/kg, and TPH (418.1) 438 mg/kg.

The pit was re-excavated to approximately 20 feet bgs and approximately 942 cubic yards of additional impacted soil were removed. The headspace soil reading from the excavation bottom was 197 ppm. A composite soil sample was collected from the four walls and the excavation bottom. Soil analytical was as follows: benzene – 3.7 mg/kg, total BTEX – 156 mg/kg and TPH (418.2) – 101 mg/kg.

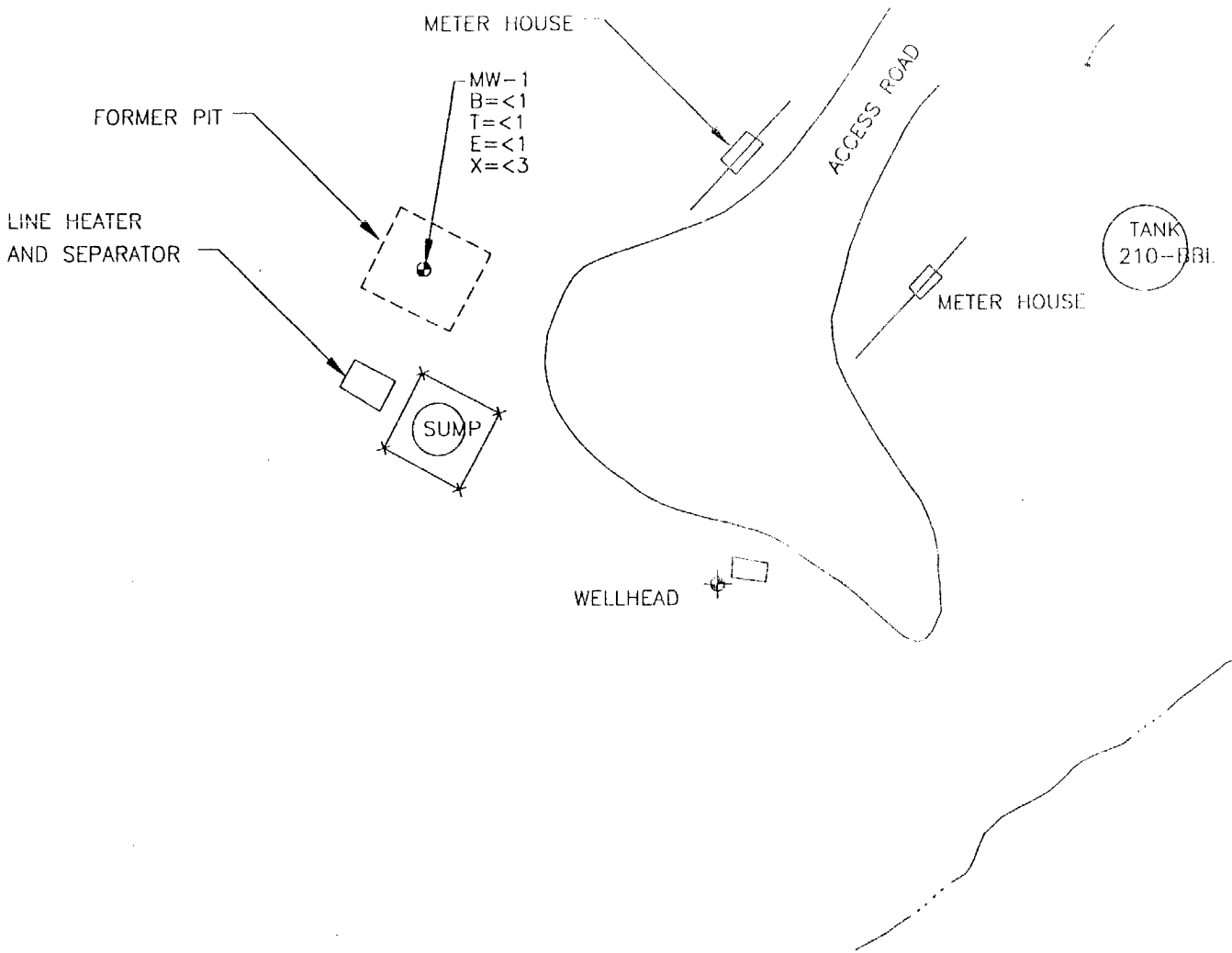
After re-excavation a soil boring was drilled and a monitoring well was installed. Quarterly groundwater monitoring was initiated on 7/17/97 and continued through 4/27/98. Groundwater analytical data are presented on Table 1. Groundwater analytical data prior to 1998 has been previously submitted in the 1997 Annual Report, along with well diagrams and boring logs.

CONCLUSIONS

Groundwater analytical data has been below standards for 4 consecutive quarters since quarterly sampling was initiated, indicating minimal impact to groundwater.

RECOMMENDATIONS

- EPFS request closure at this site.
- Following OCD approval for closure, MW-1 will be abandoned following OCD approved abandonment procedures.



LEGEND

MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
B	BENZENE (ug\L)
T	TOLUENE (ug\L)
E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
ug\L	MICROGRAMS PER LITER

NOT TO SCALE

N

PHILIP SERVICES CORP

TITLE:
NICKFIS No. 1 DK
METER 73034

DWN:	DES.:	PROJECT NO.: 17520
TMM	CC	EPFS GW PITS
CHKD:	APPD:	
CC		
DATE:	REV.:	FIGURE 1
11/4/97	0	

CDL 17520V-001

FIELD PIT SITE ASSESSMENT FORM

GENERAL

Meter: 73034 Location: NICKLES #1
Operator #: _____ Operator Name: Fuller Potco. P/L District: Kutz
Coordinates: Letter: K Section 11 Township: 31 Range: 13
Or Latitude _____ Longitude _____
Pit Type: Dehydrator X Location Drip: ___ Line Drip: ___ Other: _____
Site Assessment Date: 1.4.95 Area: 02 Run: 21

SITE ASSESSMENT

NMOCD Zone: (From NMOCD Maps)
Inside ☒ (1)
Outside ☐ (2)

Land Type:
BLM ☐ (1)
State ☐ (2)
Fee ☒ (3)
Indian _____

Depth to Groundwater
Less Than 50 Feet (20 points) ☒ (1)
50 Ft to 99 Ft (10 points) ☐ (2)
Greater Than 100 Ft (0 points) ☐ (3)

Wellhead Protection Area :
Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? ☐ (1) YES (20 points) ☒ (2) NO (0 points)

Horizontal Distance to Surface Water Body
Less Than 200 Ft (20 points) ☐ (1)
200 Ft to 1000 Ft (10 points) ☒ (2)
Greater Than 1000 Ft (0 points) ☐ (3)
Name of Surface Water Body LA PLATA RIVER
(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)
Distance to Nearest Ephemeral Stream ☐ (1) < 100' (Navajo Pits Only)
☐ (2) > 100'

TOTAL HAZARD RANKING SCORE: 30 **POINTS**

REMARKS

Remarks : REDLINE & TOPO SHOW LOCATION INSIDE V.Z. 2 PITS ON LOCATION, 1 IS LINED. THE UNLINED DEHY PIT BELONGS TO EPNG. WILL CLOSE PIT.

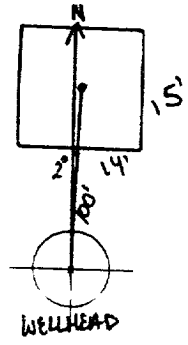
DIG & HAUL.

ORIGINAL PIT LOCATION

ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 2° Footage from Wellhead 100'

b) Length : 15' Width : 14' Depth : 4'



REMARKS

Remarks :

PHOTOS - 1348

Completed By:

Signature

1.4.95

Date

FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL

Meter: 73034 Location: Nickles #1

Coordinates: Letter: K Section 11 Township: 31 Range: 13

Or Latitude _____ Longitude _____

Date Started : 2-6-95 Run: 02 ~~31~~ 21 2/7/95 BR

FIELD OBSERVATIONS

Sample Number(s): MK352 _____ _____ _____

Sample Depth: 12 Feet

Final PID Reading 206 PID Reading Depth 12 Feet

	Yes	No
Groundwater Encountered	☐	☒

Approximate Depth _____ Feet

CLOSURE

Remediation Method :

- Excavation ☒ Approx. Cubic Yards 40
- Onsite Bioremediation ☐
- Backfill Pit Without Excavation ☐

Soil Disposition:

- Envirotech ☐
- ☒ Tierra
- Other Facility ☐ Name: _____

Pit Closure Date: 2-6-95 Pit Closed By: BE

REMARKS

Remarks : Arrived Took Fence down pit looK like It has had Fiberglass pit at one time soil was black and HAS strong Hydrocarbon odor all the way down

Signature of Specialist: Morgan Killion

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	MK 352	9461-30
MTR CODE | SITE NAME:	73034	N/A
SAMPLE DATE | TIME (Hrs):	2-6-95	0950
SAMPLED BY:	N/A	
DATE OF TPH EXT. | ANAL.:	2-9-95	2-9-95
DATE OF BTEX EXT. | ANAL.:	2/7/95	2/8/95
TYPE | DESCRIPTION:	VC	Dark Brown fine sand and clay

REMARKS: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	52.5	MG/KG	1.7241Y		2.32	20
TOLUENE	591	MG/KG				
ETHYL BENZENE	75.7	MG/KG				
TOTAL XYLENES	781	MG/KG				
TOTAL BTEX	1,500	MG/KG				
TPH (418.1)	7310	MG/KG			0.41	28
HEADSPACE PID	206	PPM				
PERCENT SOLIDS	94.6	%				

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 83.2 % for this sample All QA/QC was acceptable.

ative:

DF = Dilution Factor Used

Approved By: _____ Date: 2-22-95

BTEX SOIL SAMPLE WORKSHEET

File	:	946630A	**Date Printed**	:	2/8/95
Soil Mass (g)	:	2.32	**Multiplier (L/g)**	:	0.00216
Extraction vol. (mL)	:	20	**DF (Analytical)**	:	800
Shot Volume (uL)	:	25	**DF (Report)**	:	1.72414

						Det. Limit
Benzene	**(ug/L)**	:	30.47	**Benzene**	**(mg/Kg):**	**52.534**	8.621
Toluene	**(ug/L)**	:	342.72	**Toluene**	**(mg/Kg):**	**590.897**	8.621
Ethylbenzene	**(ug/L)**	:	43.91	**Ethylbenzene**	**(mg/Kg):**	**75.707**	8.621
p & m-xylene	**(ug/L)**	:	374.82	p & m-xylene	(mg/Kg):	646.241	17.241
o-xylene	**(ug/L)**	:	78.16	o-xylene	(mg/Kg):	134.759	8.621
				Total xylenes	**(mg/Kg):**	**781.000**	25.862
				Total BTEX	**(mg/Kg):**	**#######**	

1,500

El Paso Natural Gas Company

CHAIN OF CUSTODY RECORD

Page _____ of _____

PROJECT NUMBER	PROJECT NAME
# 24324	Pit Closure Project

SAMPLERS: (*Signature*) Morgan Killion — DATE: 2-6-95

LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	REQUESTED ANALYSIS: TPH EPA 418.1	BTEX EPA 8020	LAB PID			SEQUENCE #	REMARKS
	2-6-95	9:50	soil	MK352	1	VG	X	X				317	Black soil strong Hydrocarbon odor
	2-6-95	11:50	soil	MK353	1	VG	X	X				318	Brown soil no Hydrocarbon odor
	2-6-95	12:30	soil	MK354	1	VG	X					319	Grayish brown soil strong Hydrocarbon odor
	2-6-95	17:00	soil	MK355	1	VG	X	X				320	Brown soil slight Hydrocarbon odor
	2-6-95	17:00	soil	MK356	1	D	X	X					
	2-6-95	17:05	soil	MK357	1	D	X	X					

RELINQUISHED BY: (*Signature*)	DATE/TIME	RECEIVED BY: (*Signature*)	RELINQUISHED BY: (*Signature*)	DATE/TIME	RECEIVED BY: (*Signature*)
Morgan Killion 2-6-95	1315	Brenda Price	Brenda Price	2/7/95 0935	
RELINQUISHED BY: (*Signature*)	DATE/TIME	RECEIVED BY: (*Signature*)	RELINQUISHED BY: (*Signature*)	DATE/TIME	RECEIVED OF LABORATORY BY: (*Signature*)

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH _____

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499

505-599-2144 FAX: 505-599-2261

White - *Testing Laboratory* Canary - *EPNG Lab* Pink - *Field Sampler*

FM-08-0565 A (Rev 05-94)

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-1
Well #
Page 1 of 1

PHILIP ENVIRONMENTAL
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPNG Pits
Project Number 14509 Phase 6000.77
Project Location Nickels #1 73034

Elevation
Borehole Location T31, R13, S11, K
GWL Depth
Logged By Jeff W. Kindley
Drilled By S. Snaiden
Date/Time Started 09/21/95 0829
Date/Time Completed 09/21/95 0900

Well Logged By Jeff W. Kindley
Personnel On-Site S. Snaiden, D. Roberts, T. Johnson
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4 ID HSA
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S	Drilling Conditions & Blow Counts
0				Backfill material to 12'						
5										
10										
15	1	15-17	18/24	CL, BL CLAY, moist, STIFF, high plasticity, hydrocarbon odor					80/127	0837 96 blows per Foot
20	2	20-22	19/24	CL, BL CLAY, wet, very STIFF, high plasticity, hydrocarbon odor. Borehole terminated at 22 feet.						• 19 hit groundwater 0845 28 blows per Foot
25										
30										
35										
40										

Comments: Groundwater encountered at 19 feet. Sample collected From 15 to 17 feet (TWK 77). sample submitted for analysis of BTEX and TPH. BH grouted to the surface

Geologist Signature Jeffrey Kindley

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	JWK77	947516
MTR CODE | SITE NAME:	73034	Nickels #1 DK
SAMPLE DATE | TIME (Hrs):	09/21/95	0837
PROJECT:	Phase II Drilling	
DATE OF TPH EXT. | ANAL.:	09/22/95	09/25/95
DATE OF BTEX EXT. | ANAL.:	09/22/95	09/25/95
TYPE | DESCRIPTION:	VG	Light gray sand & clay

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	6.9	MG/KG				
TOLUENE	30.9	MG/KG				
ETHYL BENZENE	6.1	MG/KG				
TOTAL XYLENES	68.8	MG/KG				
TOTAL BTEX	113	MG/KG				
TPH (418.1)	438	MG/KG			2.09	28
HEADSPACE PID	127	PPM				
PERCENT SOLIDS	81.6	%				

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 101 % for this sample All QA/QC was acceptable.

ıtive:

DF = Dilution Factor Used

Approved By: John Hawley Date: 7/18/96

EL PASO Natural Gas Company

Mitchell Unit

CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
14509	Pit Closure Project # 24324

SAMPLERS: (Signature) Kelly Kradley

DATE: September 21, 1995

LAB ID	DATE	TIME	MATRIX	SAMPLE NUMBER	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020			PID HS # (ppm)	SPL #	REMARKS
	09/21/95	0837	Soil	JWK 77	1	VG	✓	✓			127	69	Nickols #1 73039 15 to 17 feet
	09/21/95	0935	Soil	JWK 78	1	VG	✓	✓			0	70	Hancock #1A 10036 20-22 feet
	09/21/95	1030	Soil	JWK 79	1	VG	✓	✓			72	71	Lat H 37 DRIP Y-3 F013113 30-32 feet
	09/21/95	1710	Soil	JWK 80	1	VG	✓	✓			7	72	Nickols #1-M 33907, 33908 35-37 feet

CONTRACT LABORATORY P. O. NUMBER

REQUESTED ANALYSIS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Kelly Kradley	09/21/95 1825				
	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED OF LABORATORY BY: (Signature)

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499
505-599-2144 FAX: 505-599-2261

White - *Testing Laboratory* Canary - *EPNG Lab* Pink - *Field Sampler*

BTEX SOIL SAMPLE WORKSHEET

File	: 947516		**Date Printed**	: 9/26/95	
Soil Mass (g)	: 4.98		**Multiplier (L/g)**	: 0.00100	
Extraction vol. (mL)	: 10		**DF (Analytical)**	: 200	
Shot Volume (uL)	: 50		**DF (Report)**	: 0.20080	

				Det. Limit
Benzene (ug/L)	: 34.50	**Benzene (mg/Kg):**	**6.928**	0.502
Toluene (ug/L)	: 154.00	**Toluene (mg/Kg):**	**30.924**	0.502
Ethylbenzene (ug/L)	: 30.20	**Ethylbenzene (mg/Kg):**	**6.064**	0.502
p & m-xylene (ug/L)	: 285.00	p & m-xylene (mg/Kg):	57.229	1.004
o-xylene (ug/L)	: 57.80	o-xylene (mg/Kg):	11.606	0.502
		Total xylenes (mg/Kg):	**68.835**	1.506
		Total BTEX (mg/Kg):	**112.751**	

Analytical**Technologies,**Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **510301**

October 9, 1995

El Paso Natural Gas
P.O. Box 4990
Farmington, NM 87499

Project Name/Number: PIT CLOSURE/PHASE II 24324

Attention: John Lambdin

On **10/03/95**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

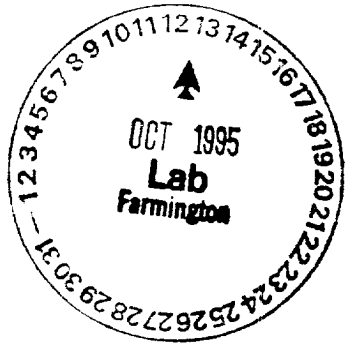
If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure



Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

Analytical**Technologies,** Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8015 MODIFIED

CLIENT : EL PASO NATURAL GAS ATI I.D.: 510301

PROJECT # : 24324

PROJECT NAME : PIT CLOSURE/PHASE II

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	947512	NON-AQ	09/20/95	10/03/95	10/04/95	10
02	947516	NON-AQ	09/21/95	10/03/95	10/04/95	1
03	947524	NON-AQ	09/22/95	10/03/95	10/04/95	10

PARAMETER	UNITS	01	02	03
FUEL HYDROCARBONS	MG/KG	3100	57	2000
HYDROCARBON RANGE		C6-C14	C6-C14	C6-C14
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
FUEL HYDROCARBONS	MG/KG	1100	120	250
HYDROCARBON RANGE		C14-C36	C14-C36	C16-C32
HYDROCARBONS QUANTITATED USING		DIESEL	DIESEL	DIESEL
SURROGATE:				
O-TERPHENYL (%)		120	101	110

FIELD PIT REMEDIATION/CLOSURE FORM/PHASE II

Meter: 73034 Location: Nickles # 1

Coordinates: Letter: K Section 11 Township: 31 Range: 13

Or Latitude _____ Longitude _____

Date Started : 11-27-95 Area: 02 Run: 21

Sample Number(s): 4P89 _____ _____ _____

Sample Depth: 20' Feet

Final PID Reading 197 PID Reading Depth 20' Feet

Yes No

Groundwater Encountered ☐ (1) ☒ (2) Approximate Depth _____ Feet

Final Dimensions: Length 46 Width 35 Depth 20

Remediation Method :

Excavation ☒ (1) Approx. Cubic Yards 942 LT 11/30/95

Onsite Bioremediation ☐ (2)

Backfill Pit Without Excavation ☐ (3)

Overburden Cubic Yards 31 LT 11/30/95

Soil Disposition:

Envirotech ☐ (1) ☒ (3) Tierra

Other Facility ☐ (2) Name: _____

Pit Closure Date: 11/28/95 Pit Closed By: PhilipEnv.

Phase III Used 50 Lbs Fertilizer

Remarks : Dug to 19Ft encountered groundwater, but it was only a trickle Not enough to pull samples. Took PID N wall 0.3 ppm T wall 0.1 ppm E wall 0.1 ppm W wall 294 ppm Bot 274 ppm Comp. Samp 197. Stopped digging W wall due to Fiberglass pit & Seperator

Signature of Specialist: James F Tevis

(SP31995) 05/01/95

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	JP89	947807
MTR CODE | SITE NAME:	73034	Nickels #1 DK
SAMPLE DATE | TIME (Hrs):	11/27/95	1430
PROJECT:	Phase III Excavation	
DATE OF TPH EXT. | ANAL.:	11/30/95	11/30/95
DATE OF BTEX EXT. | ANAL.:	11/28/95	11/29/95
TYPE | DESCRIPTION:	VG	Brown clay

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	3.7	MG/KG				
TOLUENE	52.6	MG/KG	2	D		
ETHYL BENZENE	6.9	MG/KG				
TOTAL XYLENES	93.1	MG/KG	2	D, D1		
TOTAL BTEX	156	MG/KG				
TPH (418.1)	101	MG/KG			2.05	28
HEADSPACE PID	197	PPM				
PERCENT SOLIDS	79.4	%				

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 96/102 % for this sample All QA/QC was acceptable.

tive:

results for m/p-xylenes exceeded calibration range (slightly).

DF = Dilution Factor Used

Approved By: _____ Date: 7/18/96

El Paso Natural Gas Company

CHAIN OF CUSTODY RECORD

Page _____ of _____

PROJECT NUMBER	PROJECT NAME
# 24324	Pit Closure Project

SAMPLERS: (Signature) Samuel Tavarez DATE: 11-27-95

LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	REQUESTED ANALYSIS: TPH EPA 418.1	BTEX EPA 8020	LAB PID			SEQUENCE #	REMARKS
	11-27-95	1450	Soil	4P89			X	X	197 =206			1	Nickles #1 73034

CONTRACT LABORATORY P. O. NUMBER

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Samuel Tavarez	11-27-95 1340	Kelly Stvall	Kelly Stvall	11/28/95 0:15	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED OF LABORATORY BY: (Signature)
	1600				

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH _____

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499

505-599-2144 FAX: 505-599-2261

White - Testing Laboratory Canary - EPNG Lab Pink - Field Sampler

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL SERVICES INC.
200 Monroe Road
ington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # BH- 2
Well # 1
Page 1 of 1

Project Name EPFS GW PITS
Project Number 17520 Phase 6001.77
Project Location NICKLES #1 — 73034

Elevation
Borehole Location T31-R13-S11-Ltr K
GWL Depth 19' BGS
Logged By D CESARK
Drilled By M DONOHUE
Date/Time Started 3/11/97 — 1330
Date/Time Completed " — 1400

Well Logged By D CESARK
Personnel On-Site ~~D CHARLEY~~ S ARCHULETA
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4" ID HSA
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S	Drilling Conditions & Blow Counts
0				BACKFILL						
5				TO						
10				19'						
15										
20				GWC 19' BGS (GRAVEL / COBBLES START C 19' BGS)						
25				TD = 27'						
30										
35										
40										

Comments: GW ENCOUNTERED C 19' BGS IN BEGINNING OF GRAVEL / COBBLE ZONE. DRILLED TO AUGER REFUSAL C 27' BGS. COMPLETED GWMW. NO SAMPLES COLLECTED. PLEASE REFER TO WELL COMP. DIAGRAM.

Geologist Signature

MONITORING WELL INSTALLATION RECORD

Borehole # 2
Well # 1
Page 1 of 1

Philip Environmental Services, Inc.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPFS GW PITS
Project Number 17520 Phase 6002.77
Site Location NICKLES #1 — 73034

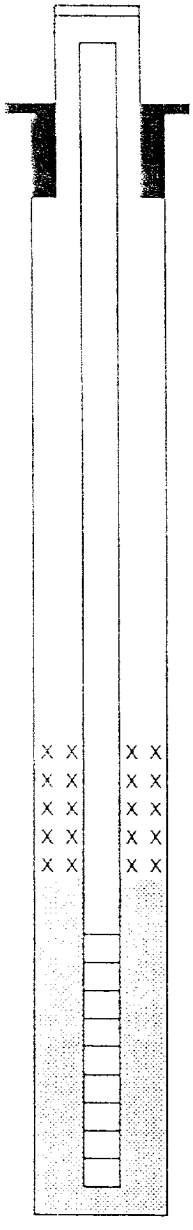
Elevation
Well Location T31N-R13W-S11-L K
GWL Depth 19' BGS
Installed By M DONOHUE

On-Site Geologist D CESARK
Personnel On-Site D CHARLEY
Contractors On-Site
Client Personnel On-Site

Date/Time Started 3/11/97 — 1400
Date/Time Completed 11 — 1600

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	SCH 40 PVC	+3'
Bottom of Well Riser	"	-12'
Top of Well Screen	.010 SLOT	-12'
Bottom of Well Screen	"	-27'
Top of Peltonite Seal	ENVIROPLUG	-7'
Bottom of Peltonite Seal	"	-9'
Top of Gravel Pack	10-20 S. SND.	-9'
Bottom of Gravel Pack	"	-27'
Top of Natural Cave-In		-27'
Bottom of Natural Cave-In		-27'
Top of Groundwater		-19'
Total Depth of Borehole		-27'



Top of Protective Casing
Top of Riser +3'
Ground Surface -0'
Top of Seal -7'
Top of Gravel Pack -9'
Top of Screen -12'
Bottom of Screen -27'
Bottom of Borehole -27'

Comments:

Geologist Signature

MWINSTAL.wk1

PHILIP ENVIRONMENTAL — Well Development and Purging Data

☐ Development ☐ Purging Well Number 1

Serial No. WDPD-

Page 1 of 2

Project Name GW PITS Project Manager C CHANCE Project No. 17520

Client Company EPFS Phase.Task No. 6003.77

Site Name NICKLES #1 Site Address

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal
- ☒ Stabilization of Indicator Parameters
- ☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 27' BGS

Initial Depth to Water (feet) 16' BGS

Height of Water Column in Well (feet) 11'

Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing			21.5
Gravel Pack			
Drilling Fluids			
Total			21.5

Instruments

	Serial No. (If applicable)
☒ pH Meter	
☐ DO Monitor	
☒ Conductivity Meter	
☒ Temperature Meter	
☐ Other	

Water Disposal

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Comments
3/28	1110		✓	.75			2.5	2.5			13.9	7.28	225		
"	1120		✓	.25			2.5	5.0			14.1	7.31	204		
"	1135		✓	.33			5.0	10.0			13.7	7.06	205		→ well stabilized
"	1150		✓	.33			5.0	15.0			13.8	7.02	208		
"	1220		✓				6.5	21.5			13.9	7.16	218		→ lost bailer, had to retrieve, no readings notes comment

Circle the date and time that the development criteria are met.

Comments

Developer's Signature(s) [signature] Date 3/28/97 Reviewer Date

Form A0101 Rev. 03/21/94

PHILIP ENVIRONMENTAL Water Sampling Data

Location No. MW-1

Serial No. WSD-

Group List Number

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other Date 3/28/97

Project Name EPFS GW PITS Project No. 17520

Project Manager C CHANCE Phase.Task No. 6003.77

Site Name NICKLES #1 – 73034

Sampling Specifications

Requested Sampling Depth Interval (feet)

Requested Wait Following Development/Purging (hours)

Initial Measurements

Time Elapsed From Final Development/Purging (hours)

Initial Water Depth (feet) 16' BGS

Nonaqueous Liquids Present (Describe)

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings: Temp. (°C)	pH	DO (mg/L)	Cond. (µmhos/cm)	Water Collection Data: Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Bail	Final Water Depth (feet)	Notes (Explain in Comments Below)
3/28	1110	DC	13.9	7.28		225	2.5	.125		✓		
	1120	"	14.1	7.31		204	2.5	.125		✓		
	1135	"	13.7	7.06		205	5.0	.33		✓		
	1150	"	13.8	7.02		208	5.0	.33		✓		
	1220	"	13.9	7.16		218	6.5			✓		

Sample Containers

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)

Preservatives: H = HCl; N = HNO_3; S = H_2SO_4; A = NaOH; O = Other (Specify); — = None

Analytical Parameter List	Container: Number	Type	Volume (mL)	Field Filtered: Yes	No	Preserved	Cooled During Collection: Yes	No	Comments
BTEX	DRC17	VV	40		✓	Y			GRAB
"	DRC18	"	"		✓	Y			DUP.
"	DRC19	"	"		✓	Y			BLK.

Filter Type

Chain-of-Custody Form Number A2235

Comments

Signature Date 3/28/97 Reviewer Date

Form A0202 Rev. 02/24/94

El Paso Natural Gas Company

A

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Type and No. of Sample Containers	Preservation Technique	Requested Analysis				Remarks
Samplers: (Signature)	Date:							

	Date	Time	Comp.	GRAB	Sample Number

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
Carrier Co: Air Bill No.:		Carrier Phone No.		Date Results Reported / by: (Signature)	

EL PASO FIELD SERVICES

5-22-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC17	970231
MTR CODE | SITE NAME:	73034	Nickels #1
SAMPLE DATE | TIME (Hrs):	3/28/97	1315
PROJECT:	Phase II Drilling - Initial	
DATE OF BTEX EXT. | ANAL.:	4/3/97	4/3/97
TYPE | DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	30.8	PPB				
TOTAL XYLENES	122	PPB				
TOTAL BTEX	153	PPB				

The Surrogate Recovery was at 106 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: John Tallo Date: 4/8/97

EL PASO FIELD SERVICES LABORATORY
EPA METHOD 8020 - BTEX

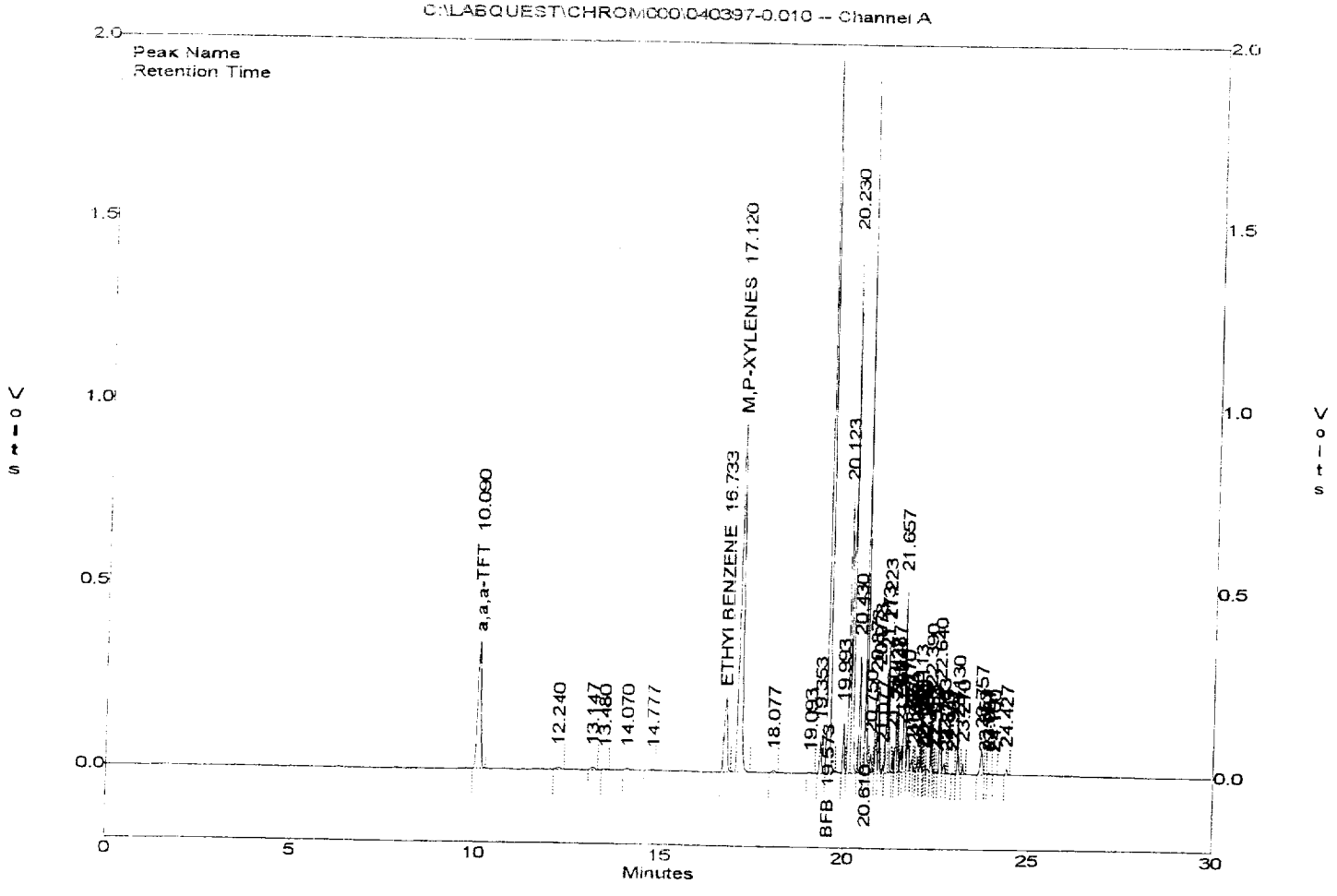
File : C:\LABQUEST\CHROM000\040397-0.010
hod : C:\LABQUEST\METHODS\0-013197.MET
ample ID : 970231 X1
Acquired : Apr 03, 1997 22:20:04
Printed : Apr 03, 1997 22:50:33
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	7.820	0	0.0000
a,a,a-TFT	10.090	2181602	99.7682
TOLUENE	12.470	0	0.0000
ETHYLBENZENE	16.733	1175382	30.8425
M,P-XYLENES	17.120	5607226	122.0674
O-XYLENE	18.250	0	0.0000
BFB	19.573	3657530	105.5879

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		5607226	122.0674



EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	DRC18	970232
MTR CODE | SITE NAME:	73034	Nickels #1
SAMPLE DATE | TIME (Hrs):	3/28/97	1320
PROJECT:	Phase II Drilling - Initial	
DATE OF BTEX EXT. | ANAL.:	4/3/97	4/3/97
TYPE | DESCRIPTION:	Duplicate	Water

Field Remarks: Field Duplicate

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	30.5	PPB				
TOTAL XYLENES	121	PPB				
TOTAL BTEX	152	PPB				

The Surrogate Recovery was at 102 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: John Jacobs Date: 4/8/97

EL PASO FIELD SERVICES LABORATORY
EPA METHOD 8020 - BTEX

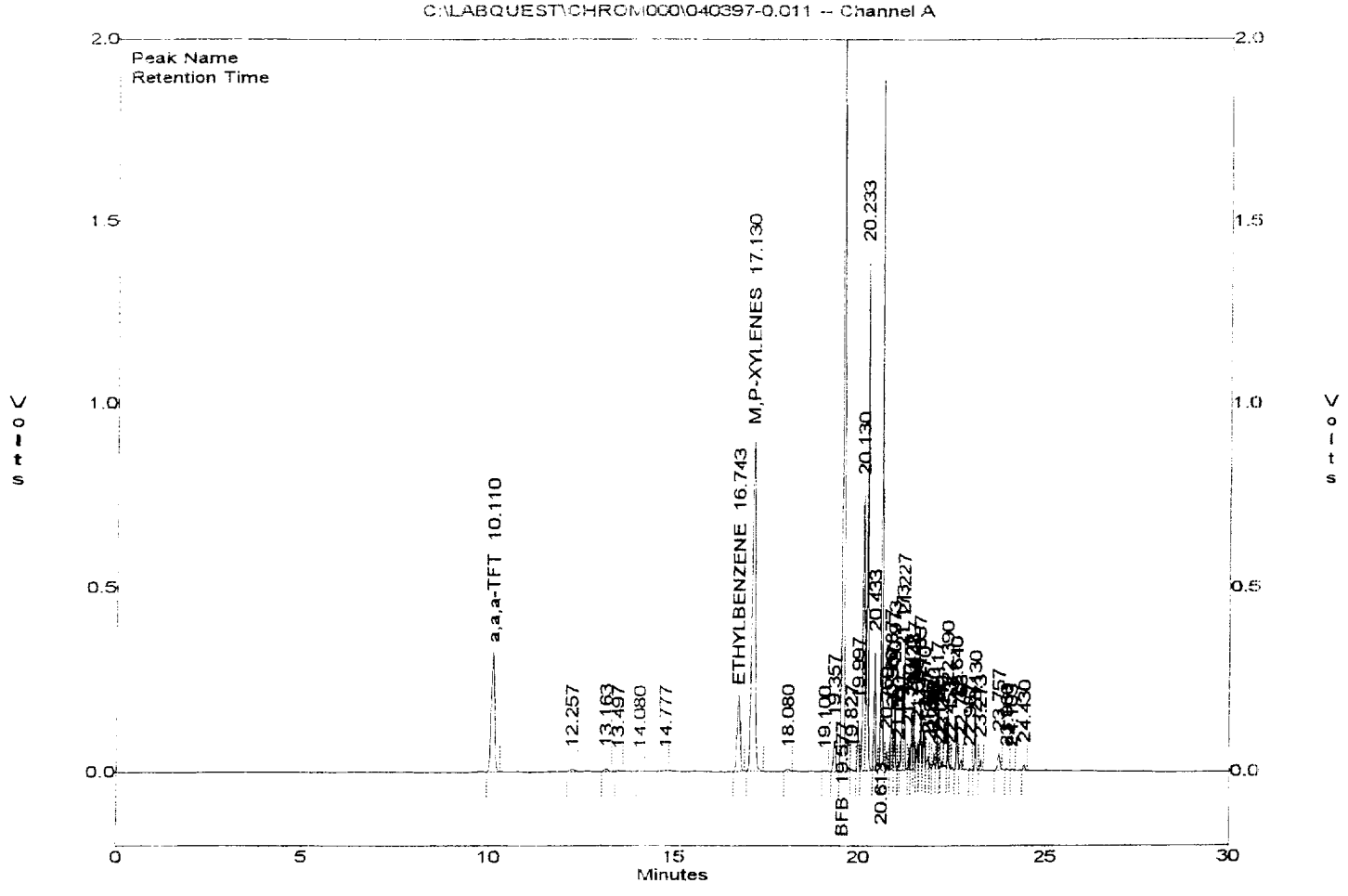
File : C:\LABQUEST\CHROM000\040397-0.011
thod : C:\LABQUEST\METHODS\0-013197.MET
.mple ID : 970232 X1
Acquired : Apr 03, 1997 23:00:40
Printed : Apr 03, 1997 23:31:08
User : MARLON

Channel A Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
BENZENE	7.820	0	0.0000
a,a,a-TFT	10.110	2091853	95.6639
TOLUENE	12.470	0	0.0000
ETHYLBENZENE	16.743	1161652	30.5135
M,P-XYLENES	17.130	5578504	121.4269
O-XYLENE	18.250	0	0.0000
BFB	19.577	8389120	102.3143

Channel A Group Results

COMPONENT	RET TIME	AREA	CONC (ug/L)
TOTAL XYLENES		5578504	121.4269



Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	S1	Benzene (PPB)	S2	Toluene (PPB)	S3	Ethyl Benzene (PPB)	S4	Total Xylenes (PPB)	S7	Total BTEX
970231	73034	Nickels #1	3/28/97	1	Phase II Drilling - Initial	<	1	<	1	=	30.8	=	122	=	155
970684	73034	Nickels #1	7/17/97	1	Sample 4 - 1st Qtr	<	1	<	1	<	1	<	3	<	6
971150	73034	Nickels #1	10/24/97	1	Sample 4 - 2nd Qtr	<	1	<	1	<	1	<	3	<	6
980012	73034	Nickels #1	1/7/98	1	Sample 4 - 3rd Qtr	<	1	<	1	<	1	<	3	<	6
980319	73034	Nickels #1	4/27/98	1	Sample 4 - 4th Qtr	<	1	<	1	<	1	<	3	<	6

EL P O
FIE SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name NICKLES #1

Meter Code 73034

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removel
☐ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump		Bailer	
☐	Centrifugal	☒	Bottom Valve
☐	Submersible	☐	Double Check Valve
☐	Peristaltic	☐	Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 27.95
Initial Depth to Water (feet) 20.08
Height of Water Column in Well (feet) 9.87
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		6.5	19.6
Gravel Pack			
Drilling Fluids			
Total			

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CHEMETS KIT

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulative	Increment	Cumulative					
1-7-98	1140										11.2	6.27	4430		
1-7-98	1153						5.0	5.0			12.0	6.54	4360		
1-7-98	1205						5.0	10.0			12.2	6.54	4340		
1-7-98	1220						2.0	12.0			11.6	6.74	4200	4.5	

Comments THE WELL BAILED DRY @ 12.0 GALLONS.

Developer's Signature Dennis Bird Date 1-7-98 Reviewer John Lorde Date 1/21/98

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980012
MTR CODE | SITE NAME:	73034	Nickles #1
SAMPLE DATE | TIME (Hrs):	1/7/98	1245
PROJECT:	Sample 4 3rd Quarter	
DATE OF BTEX EXT. | ANAL.:	1/12/98	1/12/98
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 103.1 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

_____

_____

Approved By: _____ Date: 1/21/98

SAMPLE 4 3RD QTR

El Paso Natural Gas Company

A 2178

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Samplers: (Signature)	Date
	MC#73034	Dennis Bird	1-7-98

MATRIX	Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers	Preservation Technique	Requested Analysis: BTXE				Remarks
WATER	1-7-98	1345		X	980012	G-1	4°C	X				NICKLES #1 MW-1
WATER	1-7-98	—		X	—	G-1	4°C	X				TRIP BLANK

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	1-7-98 1538				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Madan Kapoor	1/12/98 0745		

Carrier Co:	Carrier Phone No.	Date Results Reported / by: (Signature)
Air Bill No.:		

ELTRON FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name NICKELS #1

Meter Code 73034

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removel
☐ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump		Bailer	
☐	Centrifugal	☒	Bottom Valve
☐	Submersible	☐	Double Check Valve
☐	Peristaltic	☐	Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 29.95
Initial Depth to Water (feet) 19.24
Height of Water Column in Well (feet) 10.71
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.1	21.2
Gravel Pack			
Drilling Fluids			
Total			

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CHEMETS KIT

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulative	Increment	Cumulative					
4-27-98	0950										11.4	6.20	4380		
4-27-98	0957						5.0	5.0			11.8	6.33	4370		
4-27-98	1009						5.0	10.0			12.0	6.49	4310		
4-27-98	1033						5.0	15.0			12.1	6.79	4060	4.5	

Comments THE WELL BAILED DRY @ 15.0 GALLONS.

Developer's Signature Dennis Bird Date 4-27-98 Reviewer John Hartch Date 5/1/98

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980319
MTR CODE | SITE NAME:	73034	Nickels #1
SAMPLE DATE | TIME (Hrs):	4/27/98	1048
PROJECT:	Sample 4 4th Quarter	
DATE OF BTEX EXT. | ANAL.:	4/29/98	4/29/98
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.5 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: John Fowler Date: 5/1/98

980319STEXMW,4/30/98

SAMPLE 4 4TH QTR

El Paso Natural Gas Company

A 2654

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Type and No. of Sample Containers	Preservation Technique	Requested Analysis			Remarks
	MC# 73034			BTXE			
Samplers: (Signature) Dennis Bird	Date: 4-27-98						

MATRIX	Date	Time	Comp.	GRAB	Sample Number							
WATER	4-27-98	1345		X	9803190	5-1	4°C	X				NICKLES #1 MW-1
WATER	4-27-98	—		X	—	5-1	4°C	X				TRIP BLANK

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	4-27-98 1530				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Marlan Hopper	4/28/98 0730		

Carrier Co:	Carrier Phone No.	Date Results Reported / by: (Signature)
Air Bill No.:		