

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

OK  
Refined  
plume  
Submit 1 copy to  
appropriate  
District Office  
and 1 copy to  
the Santa Fe Office  
(Revised 3/9/94)

PIT REMEDIATION AND CLOSURE REPORT

30-045-25436

Operator: Amoco by EPFS

Telephone: \_\_\_\_\_

Address: \_\_\_\_\_

Facility Or: State M#1, Meter 94626  
Well Name \_\_\_\_\_

Location: Unit or Qtr/Qtr Sec C Sec 16 T 29 R 8 County San Juan

Pit Type: Separator \_\_\_\_\_ Dehydrator \_\_\_\_\_ Other Drip

Land Type: BLM \_\_\_\_\_, State X, Fee \_\_\_\_\_ Other \_\_\_\_\_

Pit Location: Pit dimensions: length 23 feet, width 23 feet, depth 4 feet  
(Attach diagram)

Reference: wellhead X, other \_\_\_\_\_

Footage from reference: 126 feet

Direction from reference: 76 Degrees X East North \_\_\_\_\_  
of  
\_\_\_\_\_ West South \_\_\_\_\_

Depth To Ground Water	Less than 50 feet	(20 points)
(Vertical distance from	50 feet to 99 feet	(10 points)
contaminants to seasonal	Greater than 100 feet	( 0 points) <u>0</u>
high water elevation of		
ground water.)		

Wellhead Protection Area:	Yes (20 points)
(Less than 200 feet from a private	No ( 0 points) <u>0</u>
domestic water source, or; less than	
1000 feet from all other water sources.)	

Distance To Surface Water:	Less than 200 feet	(20 points)
(Horizontal distance to perennial	200 feet to 1000 feet	(10 points)
lakes, ponds, rivers, streams, creeks,	Greater than 1000 feet	( 0 points) <u>0</u>
irrigation canals and ditches.)		

RANKING SCORE (TOTAL POINTS): 0

Date Remediation Started: 05/20/94

Date completed: 05/20/94

Remediation Method: Excavation X

Approx. cubic yards 20

(Check all appropriate sections.)

Landfarmed \_\_\_\_\_

Insitu Bioremediation \_\_\_\_\_

Other \_\_\_\_\_

Remediation Location: Onsite \_\_\_\_\_ Offsite Tierra

(i.e. landfarmed onsite, name and location of offsite facility)

General Description of Remedial Action: Excavated pit to 6'. Hit sandstone layer. Took PID reading. Closed Pit.

Ground Water Encountered: No X Yes \_\_\_\_\_ Depth \_\_\_\_\_

Final Pit:  
Closure Sampling:  
(if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location Four walls and center of pit composite

Sample depth 6'

Sample Date 05/20/94 Sample time 0940

Sample Results

Benzene(ppm) <0.12

Total BTEX(ppm) 36

Field headspace(ppm) 497

TPH 508

Yes \_\_\_\_\_ No X (If yes, attach sample results)

Ground Water Sample:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Date 11/8/03

Signature

Scott T. Pope

Printed Name  
and Title

SCOTT T. POPE  
Senior ENV. Scientist



## PIT CLOSURE REQUEST

State M #1  
Meter/Line ID 94626

### SITE DETAILS

Legals - Twn: 29N	Rng: 8W	Sec: 16	Unit: C
NMOCD Hazard Ranking: 0		Land Type: State	
Operator: Conoco Mesa Operating L		Pit Closure Date: 5/20/94	

### RATIONALE FOR RISK-BASED CLOSURE

The pit noted above was assessed and ranked according to the criteria in the New Mexico Oil Conservation Division's (NMOCD) Unlined Surface Impoundment Closure Guidelines.

A test pit was excavated to 6 feet (ft) below ground surface (bgs) where sandstone was encountered, and a soil sample was collected for field headspace and laboratory analysis for TPH. Groundwater was not encountered in the test pit. Headspace analysis indicated an organic vapor content of 497 ppm; laboratory analysis indicated a benzene concentration of <0.12 mg/kg, a total BTEX concentration of 36 mg/kg, and a TPH concentration of 508 mg/kg. The benzene, total BTEX, and TPH measurement were below recommended remediation levels for the Hazard Ranking Score of 0.

Approximately 20 cubic yards of soil were excavated and hauled to Tierra, a commercial landfarm, for treatment and disposal. The pit was backfilled with clean soil and graded in a manner to direct surface runoff away from the pit area.

A Phase II boring was completed to 26 ft bgs. No groundwater was encountered in the soil boring. One laboratory sample was collected at 25-26 ft bgs. Headspace analysis indicated an organic vapor content of 1 ppm, laboratory analysis indicated a benzene concentration of <0.5 mg/kg, a total BTEX concentration of <3 mg/kg, and a TPH concentration of <20 mg/kg. The benzene, total BTEX, and TPH concentrations are below recommended remediation levels for the Hazard Ranking Score.

No Phase III activities were conducted.

El Paso Field Services requests closure of the above mentioned pit location for the following reasons:

- The primary source, discharge to the pit, has been removed for over eight years.
- Impacted soils were excavated to the practical extent of the equipment and subsurface conditions. All excavated soils were disposed of at an off-site location.
- The benzene, total BTEX, and TPH concentrations at the base of the test pit and Phase II soil boring were below recommended remediation levels for the Hazard Ranking Score.
- Bedrock was encountered at 6 ft bgs making additional excavation impractical and further vertical migration unlikely.
- The test pit was backfilled and the former pit area graded to direct surface runoff away from the former pit.
- Backfilling the pit with clean soil eliminated the potential for direct contact with hazardous constituents by livestock or the public; i.e., direct contact exposure pathways are incomplete.



## **PIT CLOSURE REQUEST**

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- There are no water supply wells or other sources of fresh water extraction within 1,000 feet of the site.
- Groundwater was not encountered in the soil boring at 26 ft bgs; local geologic features indicate the depth to groundwater is greater than 100 ft bgs.
- Benzene, total BTEX, and TPH concentrations in the soil sample collected at the base of the Phase II soil boring at 25 ft bgs were non-detect, indicating that no significant downward constituent migration is occurring.
- Residual hydrocarbons, if any, in the soil will likely degrade by natural attenuation with minimal risk to the environment.
- 

## **ATTACHMENTS**

Field Pit Assessment Form  
Revised Field Pit Assessment Form  
Field Pit Remediation/Closure Form  
Phase II Soil Boring Log  
Laboratory Analytical Results

# REVISED FIELD PIT SITE ASSESSMENT FORM

GENERAL

Meter: 94627 Location: STATE M #1  
 Operator #: 0203 Operator Name: AMICO P/L District: Bloomfield  
 Coordinates: Letter C Section 16 Township: 29 Range: 8  
 or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Pit Type: Dehydrator \_\_\_\_\_ Location Drip: x Line Drip: \_\_\_\_\_ Other: \_\_\_\_\_  
 Site Assessment Date: 5/13/94 Area: 10 Run: 92  
 Revised Date: 12/10/02

SITE ASSESSMENT

**NMOCD Zone:**  
 (from NMCOD Maps)

**Land Type:**

	BLM	<input type="checkbox"/> (1)
	State	<input checked="" type="checkbox"/> (2)
	Fee	<input type="checkbox"/> (3)
	Indian	_____

Inside ☒ (1)  
 Outside ☐ (2)

**Depth to Groundwater**

Less than 50 Feet (20 points) ☐ (1)  
 50 Feet to 99 Feet (10 Points) ☐ (2)  
 Greater than 100 Feet (0 Points) ☒ (3)

**Well Protection Area**

Is it less than 1000 feet from well, spring or other source of fresh water extraction?  
 or; Is it less than 200 feet from a private domestic water source?

☐ YES (20 Points) ☒ NO (0 Points)

**Horizontal Distance to Surface Water Body**

Less than 200 Feet (20 points) ☐ (1)  
 200 Feet to 1000 Feet (10 Points) ☐ (2)  
 Greater than 1000 Feet (0 Points) ☒ (3)

Name of Surface Water Body SAN JUAN RIVER  
 (Surface Water Body: Perennial River, Stream, Creek, Irrigation Canal, Ditch, Lake, Pond)

Distance to Nearest Ephemeral Stream ☐ (1) < 100 feet (Navajo Pits Only)  
☐ (2) > 100 feet

**TOTAL HAZARD RANKING SCORE** 0 **POINTS**

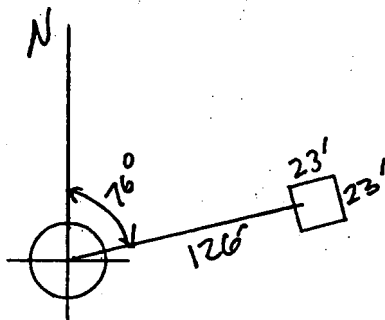
REMARKS

Remarks: REVISION BASED ON RE-ASSESSMENT OF  
DISTANCE TO NEAREST SOURCE OF FRESH WATER  
EXTRACTION.

ORIGINAL PIT LOCATION

## ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 76° Footage from Well head 126'  
b) Length : 23' Width : 23' Depth : 4'



REMARKS

Remarks :

PHOTOGRAPHS AH-<sup>4</sup> (10-13)

Completed By:

Signature

5-13-94

Date

# FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL

Meter: 94626 Location: Stak m#1  
 Coordinates: Letter: C Section 16 Township: 29 Range: 8  
 Or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Date Started : 5-20-94 Area: 10 Run: 92

OBSERVATIONS

Sample Number(s): KD 76  
 Sample Depth: 6' Feet  
 Final PID Reading 497 ppm PID Reading Depth 6' Feet  
 Yes No  
 Groundwater Encountered ☐ (1) ☒ (2) Approximate Depth \_\_\_\_\_ Feet

CLOSURE

Remediation Method :

Excavation ☒ (1) Approx. Cubic Yards 20<sup>yds</sup>  
 Onsite Bioremediation ☐ (2)  
 Backfill Pit Without Excavation ☐ (3)

Soil Disposition:

Envirotech ☐ (1) ☒ (3) Tierra  
 Other Facility ☐ (2) Name: \_\_\_\_\_

Pit Closure Date: 5-20-94 Pit Closed By: BEI

REMARKS

Remarks : Excavated pit to 6', Hit a sandstone layer, took P.I.D. Reading, closed pit.

*Handwritten signature/initials*



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT  
PIT CLOSURE PROJECT - Soil

SAMPLE IDENTIFICATION

SAMPLE NUMBER:

Field ID

Lab ID

MTR CODE | SITE NAME:

SAMPLE DATE | TIME (Hrs):

SAMPLED BY:

DATE OF TPH EXT. | ANAL.:

DATE OF BTEX EXT. | ANAL.:

TYPE | DESCRIPTION:

KD76

945253

94626

N/A

5-20-94

0940

N/A

5/24/94

5/24/94

5/27/94

6/2/94

VC

Brown fine Sand

REMARKS:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	<0.12	MG/KG	5			
TOLUENE	4.3	MG/KG	5			
ETHYL BENZENE	1.6	MG/KG	5			
TOTAL XYLENES	30	MG/KG	5			
TOTAL BTEX	36	MG/KG				
TPH (418.1)	508	MG/KG			2.23	28
HEADSPACE PID	497	PPM				
PERCENT SOLIDS	74.3	%				

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

Surrogate Recovery was at 4.3 % for this sample All QA/QC was acceptable.

ATI results attached. Surrogate recovery was outside  
ATI QC limits due to matrix interference.

DF = Dilution Factor Used

Approved By:

Date:

7/14/94

# GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)  
 CLIENT : EL PASO NATURAL GAS CO. ATI I.D.: 405406  
 PROJECT # : 24324  
 PROJECT NAME : PIT CLOSURE

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
07	945251	NON-AQ	05/20/94	05/27/94	06/01/94	1
08	945252	NON-AQ	05/20/94	05/27/94	06/01/94	5
09	945253	NON-AQ	05/20/94	05/27/94	06/02/94	5
PARAMETER			UNITS	07	08	09
BENZENE			MG/KG	<0.025	<0.12	<0.12
TOLUENE			MG/KG	0.060	3.7	4.3
ETHYLBENZENE			MG/KG	<0.025	3.6	1.6
TOTAL XYLENES			MG/KG	0.11	56	30
SURROGATE:						
BROMOFLUOROBENZENE (%)				84	74	43*

\*OUTSIDE ATI QUALITY CONTROL LIMITS DUE TO MATRIX INTERFERENCE

# RECORD OF SUBSURFACE EXPLORATION

HILL SERVICES CORP.

3000 Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

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

Project Number 19643 Phase 1001.77  
 Project Name EPFS PITS >10  
 Project Location STATE M #1 94626

Elevation \_\_\_\_\_  
 Borehole Location LTR: C S: 16 T: 29 R: 8  
 SWL Depth NA  
 Drilled By K. PADILLA  
 Well Logged By H. BRADBURY  
 Date Started 11/25/98  
 Date Completed 11/25/98

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

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			Drilling Conditions & Blow Counts
							BZ	BH	S/HS	
0				EXCAVATION SAMPLE COLLECTED AT 6'						BZ=Breathing Zone BH=Borehole S/HS=Sample/Headspace
10	1	10-11	8	LT BR SANDSTONE, low CEMENTATION, dry			0	0	$\frac{38}{12}$	840 hrs
15	2	15-16	8	LT BR SANDSTONE, high CEMENTATION, dry, FINE SAND			0	0	$\frac{116}{337}$	852 hrs HARD Drilling
20	3	20-21	8	LT BR SANDSTONE, high CEMENTATION, FINE SAND, dry			0	2	$\frac{51}{41}$	908 hrs
25	4	25-26	12	LT BR SILTSTONE, mod CEMENTATION, dry			0	0	$\frac{9}{1}$	921 hrs
30				TOB 26'						
35										
40										

Comments: HAB78(25-26) SENT to lab for TPH, BTEX GW NOT ENCOUNTERED  
BH grouted to SURFACE

Geologist Signature

Holly Bradbury



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT  
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	HAB78	980829
MTR CODE   SITE NAME:	94626	State M #1
SAMPLE DATE   TIME (Hrs):	11/25/98	0921
PROJECT:	Phase II Drilling	
DATE OF TPH EXT.   ANAL.:	12/2/98	12/2/98
DATE OF BTEX EXT.   ANAL.:	11/30/98	12/2/98
TYPE   DESCRIPTION:	VG	SOIL

Field Remarks: 25-26'

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	ML	V(ml)
BENZENE	<0.5	MG/KG				
TOLUENE	<0.5	MG/KG				
ETHYL BENZENE	<0.5	MG/KG				
TOTAL XYLENES	<1.5	MG/KG				
TOTAL BTEX	<3	MG/KG				
TPH (MOD.8015)	<20	MG/KG				
HEADSPACE PID	1	PPM				
PERCENT SOLIDS	91.7	%				

-- TPH is by EPA Method 8015 and BTEX is by EPA Method 8020 --

Surrogate Recovery was at 97.1 % for this sample All QA/QC was acceptable.  
ative:

DF = Dilution Factor Used

Approved By:

*John J. J. J.*

Date:

12/2/98



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

# GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8015 MODIFIED (DIRECT INJECT)  
CLIENT : EL PASO FIELD SERVICES  
PROJECT # : (none)  
PROJECT NAME : PHASE II DRILLING

PINNACLE I.D.: 812003

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	980826	NON-AQ	11/20/98	12/2/98	12/2/98	1
02	980827	NON-AQ	11/20/98	12/2/98	12/2/98	1
03	980828	NON-AQ	11/20/98	12/2/98	12/2/98	1
PARAMETER		DET. LIMIT	UNITS	01	02	03
FUEL HYDROCARBONS, C6-C10		10	MG/KG	34	< 10	< 10
FUEL HYDROCARBONS, C10-C22		5.0	MG/KG	< 5.0	< 5.0	< 5.0
FUEL HYDROCARBONS, C22-C36		5.0	MG/KG	< 5.0	< 5.0	< 5.0
CALCULATED SUM:				34.0		

SURROGATE:  
O-TERPHENYL (%)  
SURROGATE LIMITS

( 66 - 151 )

88 87 85

CHEMIST NOTES:  
N/A



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-7777  
Fax (505) 344-4477

# GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8015 MODIFIED (DIRECT INJECT)  
CLIENT : EL PASO FIELD SERVICES  
PROJECT # : (none)  
PROJECT NAME : PHASE II DRILLING

PINNACLE I.D.: 81200

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DATE FACTOR
04	980829	NON-AQ	11/25/98	12/2/98	12/2/98	
05	980830	NON-AQ	11/25/98	12/2/98	12/3/98	
06	980831	NON-AQ	11/25/98	12/2/98	12/2/98	
PARAMETER	DET. LIMIT	UNITS	04	05	06	
FUEL HYDROCARBONS, C6-C10	10	MG/KG	< 10	2300	< 10	
FUEL HYDROCARBONS, C10-C22	5.0	MG/KG	< 5.0	1500	< 5.0	
FUEL HYDROCARBONS, C22-C36	5.0	MG/KG	< 5.0	< 50	< 5.0	
CALCULATED SUM:				3800		
SURROGATE:						
O-TERPHENYL (%)			87	84	90	
SURROGATE LIMITS	( 66 - 151 )					

CHEMIST NOTES:  
N/A

PINNACLE  
LABORATORIES

2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-7777  
Fax (505) 344-4400

GAS CHROMATOGRAPHY QUALITY CONTROL  
MSMSD

TEST : EPA 8015 MODIFIED (DIRECT INJECT)  
MSMSD # : 812001-02  
CLIENT : EL PASO FIELD SERVICES  
PROJECT # : (none)  
PROJECT NAME : PHASE II DRILLING

PINNACLE I.D. : 812003  
DATE EXTRACTED : 12/7/98  
DATE ANALYZED : 12/7/98  
SAMPLE MATRIX : NGL-AQ  
UNITS : MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
FUEL HYDROCARBONS	<5.0	100	93	93	87	87	7	(5 - 148)	20

FORMIST NOTES:

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

## BTEX SOIL SAMPLE WORKSHEET

File	:	980829	Date Printed	:	12/3/98
Soil Mass (g)	:	5.05	Multiplier (L/g)	:	0.00099
Extraction vol. (mL)	:	10	CAL FACTOR (Analytical):	:	200
Shot Volume (uL)	:	50	CAL FACTOR (Report):	:	0.19802

	DILUTION FACTOR:	1	Det. Limit
Benzene (ug/L) : <0.5	Benzene (mg/Kg):	#VALUE!	0.495
Toluene (ug/L) : <0.5	Toluene (mg/Kg):	#VALUE!	0.495
Ethylbenzene (ug/L) : <0.5	Ethylbenzene (mg/Kg):	#VALUE!	0.495
p & m-xylene (ug/L) : <1.0	p & m-xylene (mg/Kg):	#VALUE!	0.990
o-xylene (ug/L) : <0.5	o-xylene (mg/Kg):	#VALUE!	0.495
	Total xylenes (mg/Kg):	#VALUE!	1.485
	Total BTEX (mg/Kg):	#VALUE!	