

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  
1220 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

Risk  
bedrock  
defined  
extent  
of 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

Operator: Meridian Oil, Inc. Telephone: \_\_\_\_\_

Address: 30-039-05442

Facility Or: Tonkin Federal #4, Meter 74692  
Well Name \_\_\_\_\_

Location: Unit or Qtr/Qtr Sec I Sec 18 T 24 R 3 County Rio Arriba

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

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

Pit Location: Pit dimensions: length 18', width 17', depth 4'  
(Attach diagram)

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

Footage from reference: 72'

Direction from reference: 125 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>20</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): 20

Date Remediation Started: 10/04/94 Date completed: 10/04/94

Remediation Method: Excavation \_\_\_\_\_ Approx. cubic yards \_\_\_\_\_

(Check all appropriate sections.)

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

Other Backfill pit without excavation

Remediation Location: Onsite N/A Offsite N/A  
(i.e. landfarmed onsite,  
name and location of  
offsite facility)

General Description of Remedial Action: 10' sandstone. 20 yds. Fill.

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 10'

Sample Date 10/04/94 Sample time 16:10

Sample Results

Benzene(ppm) Not reported

Total BTEX(ppm) Not reported

Field headspace(ppm) 264

TPH 2740

Ground Water Sample: Yes \_\_\_\_\_ No X (If yes, attach sample results)

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

Date 1/8/03

Signature

Printed Name

and Title

Scott T. Pope

Senior ENV. Scientist



## PIT CLOSURE REQUEST

**Tonkin Federal #4**  
**Meter/Line ID 74692**

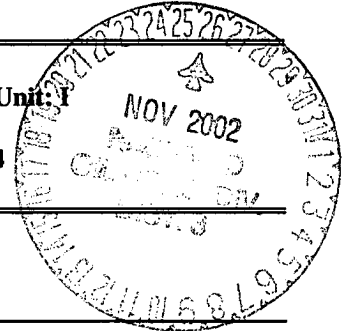
### SITE DETAILS

**Legals - Twn: 24N**  
**NMOCD Hazard Ranking: 20**  
**Operator: Meridian Oil Inc.**

**Rng: 3W**

**Sec: 18**  
**Land Type: Fee**  
**Pit Closure Date: 10/04/94**

**Unit: I**



### **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 10 feet (ft) below ground surface (bgs) where sandstone was encountered and a soil sample was collected for field headspace analysis and laboratory analysis for TPH. Groundwater was not encountered in the test pit. Headspace analysis indicated an organic vapor content of 264 ppm; laboratory analysis indicated a TPH concentration of 2,740 mg/kg. The field headspace analysis and TPH measurement exceeded recommended remediation levels for the Hazard Ranking Score of 20.

No soil was disposed of offsite. The pit was backfilled with site soil, topped with clean soil from the surrounding berms as well as 20 cubic yards of imported clean fill, and graded in a manner to direct surface runoff away from the pit area.

A Phase II boring was completed to refusal at 19.5 ft bgs. No groundwater was encountered in the soil boring. One laboratory sample was collected at 19-19.5 ft bgs. Headspace analysis indicated an organic vapor content of 0 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 13.8 mg/kg. The benzene, TPH and BTEX concentrations were 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 production pit location for the following reasons:

- The primary source, discharge to the pit, has been removed for over eight years.
- The test pit was backfilled and the former pit area graded to direct surface runoff away from the former pit.
- The clean soil from the berms in combination with the imported clean fill placed on top of the excavation would limit the potential for direct contact with hazardous constituents by livestock or the public; i.e., current direct contact exposure pathways are unlikely to be completed.
- Groundwater was not encountered in the soil boring to 19 ft bgs.
- There are no water supply wells or other sources of fresh water extraction within 1,000 feet of the site.
- Benzene and total BTEX concentrations were non-detect at the base of the Phase II boring.



## **PIT CLOSURE REQUEST**

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- TPH concentrations in the soil at 19 ft bgs were less than 1% of the concentration at 12 ft bgs, and were below the recommended remediation levels for this site. This strong attenuation with depth indicates that residual hydrocarbons will 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: 74962 Location: Tonkin Federal #4  
 Operator #: \_\_\_\_\_ Operator Name: \_\_\_\_\_ P/L District: \_\_\_\_\_  
 Coordinates: Letter: I Section 18 Township: 24 Range: 3  
 Or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Pit Type: Dehydrator \_\_\_\_\_ Location Drip: \_\_\_\_\_ Line Drip: \_\_\_\_\_ Other: \_\_\_\_\_  
 Site Assessment Date: 4/14/98 Area: \_\_\_\_\_ Run: \_\_\_\_\_

SITE ASSESSMENT

**NMOCD Zone:**

(From NMOCD

Maps)

Inside

Outside

**Land Type:**

☐ (1)

☒ (2)

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 \_\_\_\_\_

(Surface Water Body: Perennial Rivers, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)

Distance to Nearest Ephemeral Stream

☐ (1) < 100' (Navajo Pits Only)

☐ (2) > 100'

TOTAL HAZARD RANKING SCORE: 20 POINTS

REMARKS

Remarks : Site has been re-assessed, due to initial assessment including washes as a Surface Water Body. Site is < 50' vertical from center of Media Canyon

# FIELD PIT SITE ASSESSMENT FORM

GENERAL

Meter: 74962 Location: Tonkin Federal No. 4  
 Operator #: 2999 Operator Name: MDI P/L District: OJITD  
 Coordinates: Letter: I Section 18 Township: 24 Range: 3  
 Or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Pit Type: Dehydrator \_\_\_\_\_ Location Drip: ☒ Line Drip: \_\_\_\_\_ Other: \_\_\_\_\_  
 Site Assessment Date: 8/3/94 Area: 08 Run: 83

SITE ASSESSMENT

## NMOCD Zone:

(From NMOCD  
Maps)

Inside

Outside

## Land Type:

BLM

State

Fee

Indian

☐

(1)

☐

(2)

☒

(3)

## Depth to Groundwater

Less Than 50 Feet (20 points)

50 Ft to 99 Ft (10 points)

Greater Than 100 Ft (0 points)

☒

(1)

☐

(2)

☐

(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)

200 Ft to 1000 Ft (10 points)

Greater Than 1000 Ft (0 points)

☐

(1)

☒

(2)

☐

(3)

Name of Surface Water Body Medio Canyon

(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 Book - Inside

Vulnerable Zone Type - Outside

1 pit - Will close Liquid in pit

PUSH-IN



FIELD SERVICES LABORATORY  
ANALYTICAL REPORT

PIT CLOSURE PROJECT - Soil Samples Outside the GWV Zone

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	VW 374	946328
MTR CODE   SITE NAME:	74962	N/A
SAMPLE DATE   TIME (Hrs):	10-4-94	1610
SAMPLED BY:	N/A	
DATE OF TPH EXT.   ANAL.:	10-6-94	
DATE OF BTEX EXT.   ANAL.:	N/A	N/A
TYPE   DESCRIPTION:	V6	Brown sand & clay

REMARKS:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
TPH (418.1)	2740	MG/KG			2.04	28
HEADSPACE PID	264	PPM				
PERCENT SOLIDS	95.0	%				

-- TPH is by EPA Method 418.1 --

Narrative:

DF = Dilution Factor Used

Approved By: 

Date: 10-13-94

# FIELD PIT REMEDIATION/CLOSURE FORM

**GENERAL**

Meter: 74962 Location: Tonkin Federal #4  
 Coordinates: Letter: I Section 18 Township: 24 Range: 3  
 Or Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Date Started : 10-4-94 Run: 08 83

**FIELD OBSERVATIONS**

Sample Number(s): VW374  
 Sample Depth: 10' Feet  
 Final PID Reading 264 PID Reading Depth 10' Feet  
 Yes No  
 Groundwater Encountered ☐ ☒ Approximate Depth \_\_\_\_\_ Feet

**CLOSURE**

Remediation Method :  
 Excavation ☐ Approx. Cubic Yards \_\_\_\_\_  
 Onsite Bioremediation ☐  
 Backfill Pit Without Excavation ☒  
 Soil Disposition:  
 Envirotech ☐ Tierra ☐  
 Other Facility ☐ Name: \_\_\_\_\_  
 Pit Closure Date: 10-4-94 Pit Closed By: BEI

**REMARKS**

Remarks : 10' sandstone 20' of fill  
 \_\_\_\_\_  
 \_\_\_\_\_

Signature of Specialist: Vak Uhler





CHAIN OF CUSTODY RECORD

Page \_\_\_\_\_ of \_\_\_\_\_

PROJECT NUMBER		PROJECT NAME		REQUESTED ANALYSIS		CONTRACT LABORATORY P. O. NUMBER	
SAMPLERS: (Signature)		DATE		BTEX EPA 8020			
LAB ID	DATE	TIME	MATRIX	SAMPLE TYPE	TPH EPA 418.1	REMARKS	
94	10-4-94	1215	Soil	1 Vg	X	332	
94	10-4-94	1315	Soil	1 Vg	X	333	
94	10-4-94	1445	Soil	1 Vg	X	334	
94	10-4-94	1610	Soil	1 Vg	X	335	
[Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature] [Signature]							
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)	
DATE/TIME 10-4-94 1900		DATE/TIME 10-4-94 1125		DATE/TIME 10-4-94 1125		DATE/TIME 10-4-94 1125	
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)	
DATE/TIME		DATE/TIME		DATE/TIME		DATE/TIME	
[Signature]		[Signature]		[Signature]		[Signature]	
REQUESTED TURNAROUND TIME: <input type="checkbox"/> ROUTINE <input type="checkbox"/> RUSH				RESULTS & INVOICES TO:			
CARRIER CO.				FIELD SERVICES LABORATORY EL PASO NATURAL GAS COMPANY P.O. BOX 4990 FARMINGTON, NEW MEXICO 87499			
BILL NO.:				FAX: 505-599-2261			





FIELD SERVICES LABORATORY  
ANALYTICAL REPORT  
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC408	980559
MTR CODE   SITE NAME:	74962	Tonkin Fed #4
SAMPLE DATE   TIME (Hrs):	8/6/98	1150
PROJECT:	Phase II Drilling	
DATE OF TPH EXT.   ANAL.:	8/13/98	8/14/98
DATE OF BTEX EXT.   ANAL.:	8/10/98	8/11/98
TYPE   DESCRIPTION:	VG	SOIL

Field Remarks: 19-19.5

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	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)	13.8	MG/KG				
HEADSPACE PID	0	PPM				
PERCENT SOLIDS	93.5	%				

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

The Surrogate Recovery was at 86.9 % for this sample All QA/QC was acceptable.  
Narrative:

DF = Dilution Factor Used

Approved By:

*John Lueder*

Date:

8/25/98

# RECORD OF SUBSURFACE EXPLORATION

PHILIP SERVICES CORP.

4000 Monroe 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 Tan Kin Fed #4 74962

Elevation \_\_\_\_\_  
 Borehole Location LTR: I S: 18 T: 24 R: 3  
 GWL Depth NA  
 Drilled By K. PADILLA C. LOVATO  
 Well Logged By C. CHANCE  
 Date Started 8/6/98  
 Date Completed 8/6/98

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

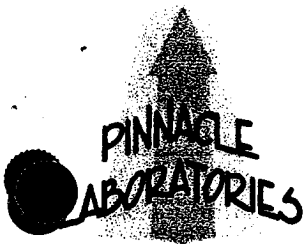
Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM			Drilling Conditions & Blow Counts
							BZ	BH	S/HS	
0										BZ=Breathing Zone BH=Borehole S/HS=Sample/Headspace
5										
10				Excavation sample collected @ 10'						
15	1	15-16	12	med Br Sandy CLAY, mod F sand stiff, med plastic, dry ly br silty SAND, vt sand, dense dry AA			0	0	0	-1124 hr -Refused @ 19'
20	2	11-19.5	1	TDB 19.5			0	0	0	-108 hr -1150 hr and spoon
25										
30										
35										
40										

Comments:

Tank on pit. Will drill on assumed downgradient edge of pit. Will drill  
 to at least 20' BGS to ensure accurate sample is obtained. SMC 408 (19-19.5)  
 sent to lab for BTEX, TPH. Refusal @ 19' w argers

Geologist Signature

Cory Chance



### GAS CHROMATOGRAPHY RESULTS

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

PINNACLE I.D.: 808033

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	980539	NON-AQ	8/3/98	8/13/98	8/14/98	1
02	980540	NON-AQ	8/3/98	8/13/98	8/14/98	1
03	980559	NON-AQ	8/6/98	8/13/98	8/14/98	1

PARAMETER	DET. LIMIT	UNITS	01	02	03
FUEL HYDROCARBONS, C6-C10	10	MG/KG	< 10	< 10	< 10
FUEL HYDROCARBONS, C10-C22	5.0	MG/KG	22	< 5.0	5.4
FUEL HYDROCARBONS, C22-C36	5.0	MG/KG	15	< 5.0	8.4
CUMULATED SUM:			37		13.8

SURROGATE:

O-TERPHENYL (%)

SURROGATE LIMITS

( 66 - 151 )

107

95

104

CHEMIST NOTES:

N/A



GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8015 MODIFIED (DIRECT INJECT)  
CLIENT : EL PASO FIELD SERVICES PINNACLE I.D.: 808033  
PROJECT # : (none)  
PROJECT NAME : PHASE II DRILLING

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	980560	NON-AQ	8/6/98	8/13/98	8/14/98	1
05	980561	NON-AQ	8/7/98	8/13/98	8/14/98	1

PARAMETER	DET. LIMIT	UNITS	04	05
FUEL HYDROCARBONS, C6-C10	10	MG/KG	< 10	< 10
FUEL HYDROCARBONS, C10-C22	5.0	MG/KG	< 5.0	< 5.0
FUEL HYDROCARBONS, C22-C36	5.0	MG/KG	< 5.0	< 5.0

CALCULATED SUM:

SURROGATE:  
O-TERPHENYL (%) 91 91  
SURROGATE LIMITS ( 66 - 151 )

CHEMIST NOTES:  
N/A



# BTEX SOIL SAMPLE WORKSHEET

File	:	980559	Date Printed	:	8/12/98
Soil Mass (g)	:	5.12	Multiplier (L/g)	:	0.00098
Extraction vol. (mL)	:	10	CAL FACTOR (Analytical):		200
Shot Volume (uL)	:	50	CAL FACTOR (Report):		0.19531

	DILUTION FACTOR:	1	Det. Limit
Benzene (ug/L) : <0.5	Benzene (mg/Kg):	#VALUE!	0.488
Toluene (ug/L) : <0.5	Toluene (mg/Kg):	#VALUE!	0.488
Ethylbenzene (ug/L) : <0.5	Ethylbenzene (mg/Kg):	#VALUE!	0.488
p & m-xylene (ug/L) : <1.0	p & m-xylene (mg/Kg):	#VALUE!	0.977
o-xylene (ug/L) : <0.5	o-xylene (mg/Kg):	#VALUE!	0.488
	Total xylenes (mg/Kg):	#VALUE!	1.465
	Total BTEX (mg/Kg):	#VALUE!	