

*Denny E. Faust* <sup>EN</sup>  
DEPUTY OIL & GAS INSPECTOR

AUG 13 1999

**JICARILLA APACHE TRIBE  
ENVIRONMENTAL PROTECTION OFFICE  
P.O. BOX 507  
DULCE, NEW MEXICO 87528**

OK LOTS  
BT 458  
CE one risk of SUBMIT 1 COPY TO  
one NATURAL RESOURCE DEPT  
AND OIL & GAS ADMINISTRATION

## PIT REMEDIATION AND CLOSURE REPORT

Approved \_\_\_\_\_

Operator: AMOCO PRODUCTION COMPANY Telephone: (505) 326-9200

**Address:** 200 Amoco Court, Farmington, NM 87401

Facility or Well Name: JICARILLA B #2E

Location: Unit or Qtr/Qtr Sec J Sec 16 T 26N R 5W County RIO ARriba

Pit Type: Separator \_\_\_\_\_ Dehydrator \_\_\_\_\_ Other PRODUCTION TANK

Land Type: RANGE

**Pit Location:** Pit dimensions: length 15', width 12', depth 6'  
(Attach diagram)

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

Footage from reference: 145'

Direction from reference: 63 Degrees X East of North X  
West South

### Depth To Groundwater:

(Vertical distance from  
contaminants to seasonal  
high water elevation of  
groundwater)

Less than 50 feet	(20 points)	
50 feet to 99 feet	(10 points)	
Greater than 100 feet	( 0 points)	<u>0</u>

### Distance to an Ephemeral Stream

(Downgradient dry wash greater than ten feet in width)

Less than 100 feet (10 points) \_\_\_\_\_  
Greater than 100 feet (0 points) 0

### Distance to Nearest Lake, Playa, or Watering Pond

(Downgradient lakes, playas and livestock or wildlife watering ponds)

Less than 100 feet (10 points) 0  
Greater than 100 feet (0 points)         

**Wellhead Protection Area:**

(Less than 200 feet from a private domestic water source, or: less than 1000 feet from all other water sources)

Yes (20 points) \_\_\_\_\_  
No (0 points) 0

**Distance To SurfaceWater:**

(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)

Less than 100 feet (20 points)  
100 feet to 1000 feet (10 points) 0  
Greater than 1000 feet (0 points) 0

**RANKING SCORE (TOTAL POINTS):** 0

BT 458 / PROD. TANK PTT

Date Remediation Started: \_\_\_\_\_ Date Completed: 10/16/96

Remediation Method: Excavation ☒ Approx. cubic yards 20  
 (check all appropriate sections) Landfarmed ☒ Insitu Bioremediation \_\_\_\_\_  
 Other \_\_\_\_\_

Remediation Location: Onsite ☒ Offsite \_\_\_\_\_  
 (i.e. landfarmed onsite, name and location of offsite facility) \_\_\_\_\_

General Description of Remedial Action: Excavation. BEDROCK BOTTOM.Groundwater Encountered: No ☒ Yes \_\_\_\_\_ Depth \_\_\_\_\_

Final Pit: Sample location see Attached Documents  
 Closure Sampling: \_\_\_\_\_  
 (if multiple samples, attach sample results and diagram of sample locations and depths) Sample depth 2'

Sample date 10/16/96 Sample time 1015

## Sample Results

Soil: Benzene	(ppm)	_____	Water: Benzene	(ppb)	_____
Total BTEX	(ppm)	_____	Toluene	(ppb)	_____
Field Headspace	(ppm)	<u>0.0</u>	Ethylbenzene	(ppb)	_____
TPH	(ppm)	<u>40</u>	Total Xylenes	(ppb)	_____

Groundwater Sample: Yes \_\_\_\_\_ No ☒ (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 10/16/96 PRINTED NAME Buddy D. ShawSIGNATURE Buddy D. Shaw AND TITLE Environmental Coordinator

AFTER REVIEW OF THE PIT CLOSURE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.

APPROVED: YES ☒ NO \_\_\_\_\_ (REASON) \_\_\_\_\_SIGNED: Gabriel John DATE: 10/22/96

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>BJ458</u> C.D.C. NO: _____
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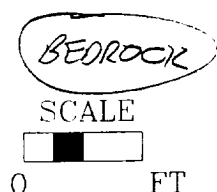
FIELD REPORT: CLOSURE VERIFICATION	PAGE No: <u>1</u> of <u>1</u>
LOCATION: NAME: <u>IKARILLA</u> WELL #: <u>ZE</u> PIT: <u>PROD.</u>	DATE STARTED: <u>10/16/96</u> DATE FINISHED: _____
QUAD/UNIT: <u>J</u> SEC: <u>16</u> TWP: <u>26N</u> RNG: <u>5W</u> PM: <u>NM</u> CNTY: <u>RA</u> ST: <u>NM</u>	ENVIRONMENTAL SPECIALIST: <u>NV</u>
QTR/FOOTAGE: <u>1640' FILL</u> / <u>1590' FILL (NWSE)</u> CONTRACTOR: <u>P+S</u>	

EXCAVATION APPROX. <u>15</u> FT. x <u>12</u> FT. x <u>6</u> FT. DEEP. CUBIC YARDAGE: <u>20</u>
DISPOSAL FACILITY: <u>ON-SITE</u> REMEDIATION METHOD: <u>LANDFARMED</u>
LAND USE: <u>RANGE</u> LEASE: _____ FORMATION: <u>OK/OCK</u>

FIELD NOTES & REMARKS:	PIT LOCATED APPROXIMATELY <u>145</u> FT. <u>N63E</u> FROM WELLHEAD.
DEPTH TO GROUNDWATER: <u>&gt;100'</u> NEAREST WATER SOURCE: <u>&gt;1000'</u> NEAREST SURFACE WATER: <u>&gt;1000'</u>	
NMOC RANKING SCORE: <u>0</u> NMOC TPH CLOSURE STD: <u>5000</u> PPM	
COIL AND EXCAVATION DESCRIPTION:	<input checked="" type="checkbox"/> CHECK ONE: <input checked="" type="checkbox"/> PIT ABANDONED <input type="checkbox"/> STEEL TANK INSTALLED <input type="checkbox"/> FIBERGLASS TANK INSTALLED

SOIL ABOVE BEDROCK (SHALE) APPARENTLY FILL MATERIAL, OK. YELL. BROWN SAND, NON-COHESIVE SLIGHTLY MOIST FIRM, NO APPARENT HC ODOR IN ANY OF THE OVM SAMPLES, NO HC STAINING OR ODOR OBSERVED w/in excavation.

BOTTOM - BEDROCK, SHALE, VELY DUSKY RED IN COLOR, SOFT TO HRRD.



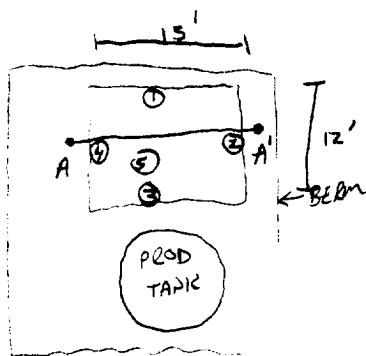
FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1015	③ @ 2'	TPH-1847	5	20	1:1	10	40

PIT PERIMETER

OVM RESULTS

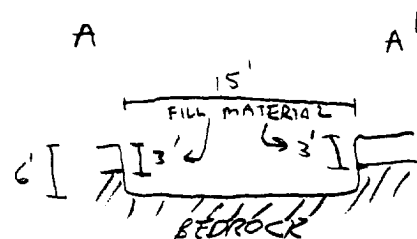
PIT PROFILE



SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 3'	0.0
2 @ 2'	0.0
3 @ 2'	0.0
4 @ 3'	0.0
5 @ 6'	0.0

LAB SAMPLES		
SAMPLE ID	ANALYSIS	TIME



TRAVEL NOTES: CALLOUT: <u>10/15/96 MORN.</u> ONSITE: <u>10/16/96 MORN.</u>
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**BLAGG ENGINEERING, INC.**

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

**FIELD MODIFIED EPA METHOD 418.1  
TOTAL PETROLEUM HYDROCARBONS**

Client: AMOCO  
Sample ID: 3 @ 2'  
Project Location: Jicarilla B # 2E  
Laboratory Number: TPH-1847

Project #:   
Date Analyzed: 10-16-96  
Date Reported: 10-16-96  
Sample Matrix: Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
-----	-----	-----
Total Recoverable Petroleum Hydrocarbons	40	20

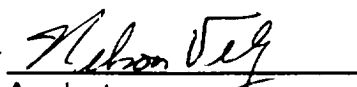
ND = Not Detectable at stated detection limits.

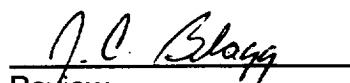
QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	-----	-----	-----
	4640	4400	5.31

\*Administrative Acceptance limits set at 30%.

Method: Modified Method 418.1, Petroleum Hydrocarbons, Total  
Recoverable, Chemical Analysis of Water and Waste,  
USEPA Storet No.4551, 1978

Comments: Production Tank Pit - BJ458

  
Analyst

  
Review

BT 458

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P.O. BOX 507  
DULCE, NEW MEXICO 87528**

SUBMIT 1 COPY TO  
NATURAL RESOURCE DEPT  
AND OIL & GAS ADMINISTRATION

**PIT REMEDIATION AND CLOSURE REPORT**

**Operator:** AMOCO PRODUCTION COMPANY **Telephone:** (505) 326-9200  
**Address:** 200 Amoco Court, Farmington, NM 87401  
**Facility or Well Name:** JICARILLA 8 #2E  
**Location:** Unit or Qtr/Qtr Sec J Sec 16 T26N R5W County RIO ARriba  
**Pit Type:** Separator ☒ Dehydrator ☐ Other ☐  
**Land Type:** RANGE

**Pit Location:** Pit dimensions: length 34', width 33', depth 13'  
(Attach diagram) Reference: wellhead ☒, other ☐  
Footage from reference: 87'  
Direction from reference: 43 Degrees ☒ East of North ☐  
West of South ☒

<b>Depth To Groundwater:</b> (Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 points)	<u>0</u>
<b>Distance to an Ephemeral Stream</b> (Downgradient dry wash greater than ten feet in width)	Less than 100 feet (10 points) Greater than 100 feet (0 points)	<u>0</u>
<b>Distance to Nearest Lake, Playa, or Watering Pond</b> (Downgradient lakes, playas and livestock or wildlife watering ponds)	Less than 100 feet (10 points) Greater than 100 feet (0 points)	<u>0</u>
<b>Wellhead Protection Area:</b> (Less than 200 feet from a private domestic water source, or: less than 1000 feet from all other water sources)	Yes (20 points) No (0 points)	<u>0</u>
<b>Distance To SurfaceWater:</b> (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 100 feet (20 points) 100 feet to 1000 feet (10 points) Greater than 1000 feet (0 points)	<u>0</u>

**RANKING SCORE (TOTAL POINTS):** 0

BJ458/SEP PIT

Date Remediation Started: \_\_\_\_\_ Date Completed: 10/16/96

Remediation Method: Excavation ☒ Approx. cubic yards 450  
Check all appropriate sections) Landfarmed ☒ Insitu Bioremediation \_\_\_\_\_  
Other \_\_\_\_\_

Remediation Location: Onsite ☒ Offsite \_\_\_\_\_  
(i.e. landfarmed onsite, name and location of offsite facility)

General Description of Remedial Action: Excavation. EXCAVATION CONSIST MOSTLY OF BEDROCK THEREFORE NO TPH ANALYSIS WAS CONDUCTED. RISK ASSESSED.

Groundwater Encountered: No ☒ Yes \_\_\_\_\_ Depth \_\_\_\_\_

Final Pit: Sample location see Attached Documents

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

Sample depth 9'

Sample date 10/16/96 Sample time 0915

Sample Results

Soil: Benzene	(ppm)	_____	Water: Benzene	(ppb)	_____
Total BTEX	(ppm)	_____	Toluene	(ppb)	_____
Field Headspace	(ppm)	<u>363</u>	Ethylbenzene	(ppb)	_____
TPH	(ppm)	<u>NA</u>	Total Xylenes	(ppb)	_____

Groundwater Sample: Yes \_\_\_\_\_ No ☒ (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 10/16/96 PRINTED NAME Buddy D. Shaw

SIGNATURE Buddy D. Shaw AND TITLE Environmental Coordinator

AFTER REVIEW OF THE PIT CLOSURE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.

APPROVED: YES ☒ NO \_\_\_\_\_ (REASON) Spray

SIGNED: Debiel Julian DATE: 10/22/96



<b>Well Name:</b>	<b>Jicarilla B #2E</b>
Well Site location:	Unit J, Sec. 16, T26N, R5W
Pit Type:	Separator Pit
Producing Formation:	Otero Chacra/Basin Dakota
Pit Category:	Non Vulnerable
Horizontal Distance to Surface Water:	> 1000 ft.
Vicinity Groundwater Depth:	> 100 ft.

## **RISK ASSESSMENT (non-vulnerable area)**

Pit remediation activities were terminated when trackhoe encountered very hard shale bedrock at 13 feet below grade.

No past or future threat to surface water or groundwater is likely based on the following considerations:

1. Past production fluids were contained locally by a relatively shallow shale bedrock located 13 feet below grade. Groundwater levels located on or close to the well pad are estimated to be at a much greater depth below shale bedrock.
2. Topographic information does not indicate off site lateral fluid migration near the earthen pit.
3. Daily discharge into the earthen pit has been terminated (pit abandoned). Prior discharge into the pit is believed to be under 5 barrels per day.
4. Well site located within the **non-vulnerable area** and is approximately 0.75 miles north northwest of the nearest vulnerable area boundary (Tapacito Creek).

**(Refer to Lapis Point Quadrangle, New Mexico - Rio Arriba County, 7.5 Minute Series (Topographic), 1963, (vulnerable area boundary developed by Mr. William C. Olson, Hydrogeologist, Environmental Bureau, New Mexico Oil Conservation Division).**

Based upon the information given, we conclude that the lateral impact of the excavation is limited and that the very hard shale bottom creates enough of an impermeable barrier as to subdue impact to groundwater below it (please refer to AMOCO's report "Post Excavation Pit Closure Investigation Summary, July, 1995", with cover letter dated November 30, 1995). AMOCO requests pit closure approval on this location.



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ENVIRONMENTAL PROTECTION OFFICE  
P.O. BOX 507  
DULCE, NEW MEXICO 87528

BJ 458

SUBMIT 1 COPY TO  
NATURAL RESOURCE DEPT.  
AND OIL & GAS ADMINISTRATION

ON-SITE SOIL REMEDIATION REPORT

Operator: AMOCO PRODUCTION COMPANY Telephone: (505) 326-9200

Address: 200 Amoco Court, Farmington, NM 87401

Facility or Well Name: JICARILLA B # 2E

Location: Unit or Qtr/Qtr Sec J Sec 16 T 26N R 5W County RIO ARIZONA

Land Type: RANGE

Date Remediation Started: 10/16/96 Date Completed: \_\_\_\_\_

Remediation Method: Landfarmed \_\_\_\_\_ Approx. cubic yards 470

Composted \_\_\_\_\_

Other STOCKPILED (2)

Depth To Groundwater: (pts.) 0

Distance to an Ephemeral Stream (pts.) 0

Distance to Nearest Lake, Playa,  
or Watering Pond (pts.) 0

Wellhead Protection Area: (pts.) 0

Distance To Surface Water: (pts.) 0

**Final Closure Sampling:**

Sampling Date: 4/21/98 Time: 1120

**Sample Results:**

Field Headspace (ppm) 0.0

TPH (ppm) 4.8 Method 8015

Other \_\_\_\_\_

RANKING SCORE (TOTAL POINTS): 0

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 4/28/98 PRINTED NAME Buddy D. Shaw

SIGNATURE Buddy D. Shaw AND TITLE Environmental Coordinator

AFTER REVIEW OF THE SOIL REMEDIATION INFORMATION, ON-SITE REMEDIATION IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.

APPROVED: YES X NO \_\_\_\_\_ (REASON) Use as Backfill

SIGNED: Kee C. Mamm DATE: 4-29-98

CLIENT: <u>AMOCO</u>	<b>BLAGG ENGINEERING, INC.</b> P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>8J458</u>  C.O.C. NO: <u>5746</u>
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## FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: <u>TICARILLA B</u> WELL #: <u>2E</u> PITS: <u>1200, SEP.</u> QUAD/UNIT: <u>J</u> SEC: <u>16</u> TWP: <u>26N</u> RNG: <u>5W</u> PM: <u>NM</u> CNTY: <u>RA</u> ST: <u>NM</u> QTR/FOOTAGE: <u>NW/4 SE/4</u> CONTRACTOR: <u>P&amp;S</u>	DATE STARTED: <u>4/21/98</u> DATE FINISHED: _____ ENVIRONMENTAL SPECIALIST: <u>NV</u>
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### SOIL REMEDIATION:

 REMEDIATION SYSTEM: STOCKPILED

 APPROX. CUBIC YARDAGE: 470

 LAND USE: RANGE

 LIFT DEPTH (ft): NA

### FIELD NOTES & REMARKS:

 DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'

 NMOCB RANKING SCORE: 0 NMOCB TPH CLOSURE STD: 5000 PPM

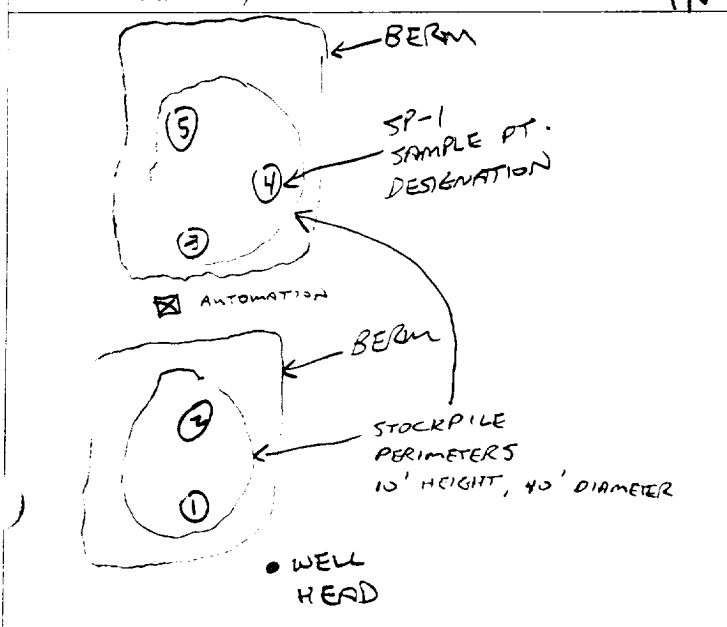
SOIL MOSTLY MED. TO DK. GRAY SILTY SAND TO SILTY CLAY COHESIVE, SLIGHTLY MOIST, FIRMA TO STIFF NO APPARENT HC OBSERVED IN ANY OF THE SAMPLE PTS. OR 6um SAMPLE, COLLECTED 5 FT. COMPOSITE FOR LAB ANALYSIS.

**CLOSED**

### FIELD 418.1 CALCULATIONS

SAMP. TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

### SKETCH/SAMPLE LOCATIONS ↑ N



### OVM RESULTS

### LAB SAMPLES

SAMPLE ID	FIELD HEADSPACE PID (ppm)	SAMPLE ID	ANALYSIS	TIME	RESULTS
SP-1	0.0	SP-1	TPH (8015)	1120	4.8

### SCALE

0  FT

### TRAVEL NOTES:

 CALLOUT: NA

 ONSITE: 4/21/98 - Mon.

**ENVIROTECH INC.**  
5796 U.S. Highway 64-3014  
Farmingington, New Mexico 87401

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

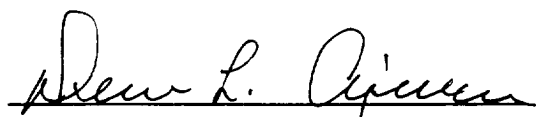
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	SP - 1	Date Reported:	04-24-98
Laboratory Number:	D132	Date Sampled:	04-21-98
Chain of Custody No:	5746	Date Received:	04-22-98
Sample Matrix:	Soil	Date Extracted:	04-22-98
Preservative:	Cool	Date Analyzed:	04-23-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

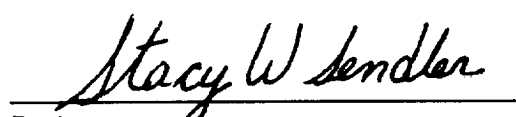
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.3	0.2
Diesel Range (C10 - C28)	3.5	0.1
Total Petroleum Hydrocarbons	4.8	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Jicarilla B #2 E Stockpile.

  
Analyst

  
Review