

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

Blow - risk - OK  
Tank d... 87655 OK  
Sep - risk - OK  
unknown - OK  
SUBMIT 1 COPY TO  
NATURAL RESOURCE DEPT  
AND OIL & GAS ADMINISTRATION

**PIT REMEDIATION AND CLOSURE REPORT**

**RECEIVED**  
AUG 20 1999  
OIL CON. DIV.  
DIST. 3

**Operator:** AMOCO PRODUCTION COMPANY **Telephone:** (505) 916 3200

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

**Facility or Well Name:** JICARILLA APACHE TRIBAL #151-7

**Location:** Unit or Qtr/Qtr Sec M Sec 4 T26N R5W County RIO ARriba

**Pit Type:** Separator  Dehydrator  Other Blow

**Land Type:** RANGE

**Pit Location:** (Attach diagram) Pit dimensions: length 23', width 27', depth 24'

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

Footage from reference: 100'

Direction from reference: 82 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)	<u>0</u>
	Greater than 100 feet	(0 points)	
<b>Distance to an Ephemeral Stream</b> (Downgradient dry wash greater than ten feet in width)	Less than 100 feet	(10 points)	<u>0</u>
	Greater than 100 feet	(0 points)	
<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)	<u>0</u>
	Greater than 100 feet	(0 points)	
<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)	<u>0</u>
	No	(0 points)	
<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)	<u>0</u>
	Greater than 1000 feet	(0 points)	
<b>RANKING SCORE (TOTAL POINTS):</b>			<u>0</u>

Date Remediation Started: \_\_\_\_\_ Date Completed: 10/21/98

Remediation Method: Excavation  Approx. cubic yards 350  
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 . BSK ASSESSED .

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

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)  
Sample location see Attached Documents  
Sample depth 18' (NORTH SIDEWALL)  
Sample date 10/16/98 Sample time 1000

Sample Results

Soil: Benzene	(ppm)	<u>2,530</u>	Water: Benzene	(ppb)	_____
Total BTEX	(ppm)	<u>65,780</u>	Toluene	(ppb)	_____
Field Headspace	(ppm)	<u>227</u>	Ethylbenzene	(ppb)	_____
TPH	(ppm)	<u>2,300</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 KNOWLEGE AND BELIEF

DATE 10/21/98 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) R.A. Attached

SIGNED: [Signature] DATE: 11-18-98

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>BJ665</u> C.O.C. NO: <u>6303</u>
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**FIELD REPORT: CLOSURE VERIFICATION**

PAGE No: 1 of 1

LOCATION: NAME: <u>JICA AP. TRIBAL IS1</u> WELL #: <u>7</u> PIT: <u>Blow</u>	DATE STARTED: <u>10/16/98</u> DATE FINISHED: _____
QUAD/UNIT: <u>M</u> SEC: <u>4</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>790' FSL / 790' FWL</u> CONTRACTOR: <u>PDS</u>	

EXCAVATION APPROX. 23 FT. x 27 FT. x 24 FT. DEEP. CUBIC YARDAGE: 350

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARM

LAND USE: RANGE LEASE: JICA151 FORMATION: DK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 100 FT. S82E FROM WELLHEAD.

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

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

SOIL AND EXCAVATION DESCRIPTION:

CHECK ONE:

PIT ABANDONED

STEEL TANK INSTALLED

FIBERGLASS TANK INSTALLED

SIDEWALLS - MOD. TO DK. YELL. ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, STAINING EVIDENT ON NORTH SIDEWALL, NO APPARENT HC ODOR DETECTED WITH EXCAVATION, STRONG HC ODOR IN NORTH SIDEWALL OUM SAMPLE, SLIGHT HC ODOR IN EAST & WEST SIDEWALL OUM SAMPLES.

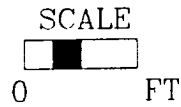
BOTTOM - BEDROCK (SANDSTONE), DK. YELL. ORANGE, VERY HARD, HC ODOR DETECTED WITH OUM SAMPLE.

**BEDROCK BOTTOM**

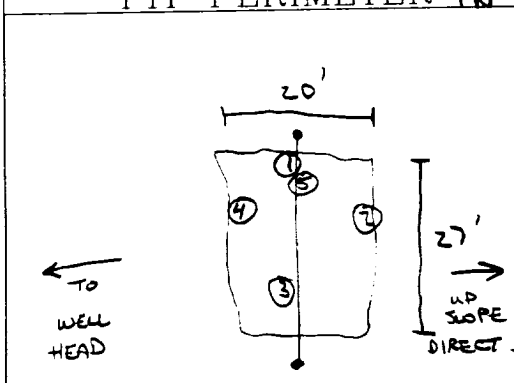
**RISK ASSESSED**

FIELD 418.1 CALCULATIONS

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



PIT PERIMETER



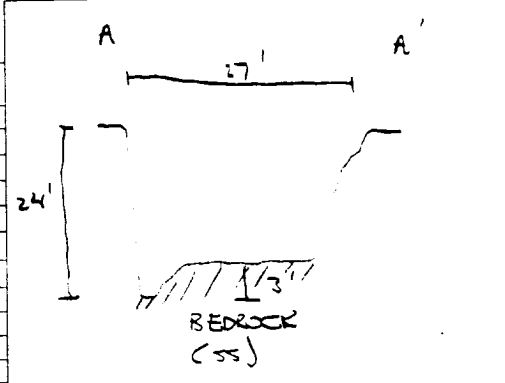
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 18'	227
2 @ 18'	113.9
3 @ 16'	2.5
4 @ 17'	63.8
5 @ 25'	206.8

AB SAMPLES

SAMPLE ID	ANALYSIS	TIME
1 @ 18'	TPH, BTEX	1000
TPH - PASSED TST. BTEX - FAILED		

PIT PROFILE



TRAVEL NOTES: CALLOUT: \_\_\_\_\_ ONSITE: 10/16/98 - MORN.

<b>Well Name:</b>	<b>Jicarilla Apache Tribal 151 #7</b>
<b>Well Site location:</b>	<b>Unit M, Sec. 4, T26N, R5W</b>
<b>Pit Type:</b>	<b>Blow Pit</b>
<b>Producing Formation:</b>	<b>Basin Dakota</b>
<b>Pit Category:</b>	<b>Non Vulnerable</b>
<b>Horizontal Distance to Surface Water:</b>	<b>&gt; 1000 ft.</b>
<b>Vicinity Groundwater Depth:</b>	<b>&gt; 100 ft.</b>

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

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 24 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 sandstone bedrock located 24 feet below grade. Groundwater levels located on or close to the well pad are estimated to be at a much greater depth below sandstone 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 0.90 miles south southeast of the nearest vulnerable area boundary (Cereza Canyon wash).

**(Refer to Vigas Canyon Quadrangle, New Mexico - Rio Arriba County, 7.5 Minute Series (Topographic), photorevised 1982, (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 subsurface lateral impact from the earthen pit is very limited and that the sandstone 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.

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

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

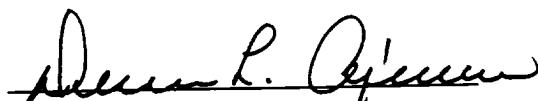
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	1 @ 18'	Date Reported:	10-21-98
Laboratory Number:	E086	Date Sampled:	10-16-98
Chain of Custody No:	6303	Date Received:	10-21-98
Sample Matrix:	Soil	Date Extracted:	10-21-98
Preservative:	Cool	Date Analyzed:	10-21-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1,510	0.2
Diesel Range (C10 - C28)	852	0.1
Total Petroleum Hydrocarbons	2,360	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 Apache Tribal #151 - 7 Blow Pit.

  
Analyst

  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Amoco	Project #:	04034-10
Sample ID:	1 @ 18'	Date Reported:	10-21-98
Laboratory Number:	E086	Date Sampled:	10-16-98
Chain of Custody:	6303	Date Received:	10-21-98
Sample Matrix:	Soil	Date Analyzed:	10-21-98
Preservative:	Cool	Date Extracted:	10-21-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	2,530	8.8
Toluene	4,800	8.4
Ethylbenzene	12,940	7.6
p,m-Xylene	29,600	10.8
o-Xylene	15,910	5.2
<b>Total BTEX</b>	<b>65,780</b>	


ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	96 %
	Bromofluorobenzene	96 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Jicarilla Apache Tribal #151 - 7 Blow Pit.

  
Analyst

  
Review



8J655

**JICARILLA APACHE TRIBE  
ENVIRONMENTAL PROTECTION OFFICE  
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 APACHE TRIBAL #151-7

**Location:** Unit or Qtr/Qtr Sec M Sec 4 T26N R5W County Rio ARIZONA

**Pit Type:** Separator  Dehydrator  Other PRODUCTION TANK

**Land Type:** RANGE

**Pit Location:** Pit dimensions: length 32', width 37', depth 30'  
(Attach diagram)

Reference: wellhead  other \_\_\_\_\_

Footage from reference: 190

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)	<u>0</u>
	Greater than 100 feet	(0 points)	
<b>Distance to an Ephemeral Stream</b> (Downgradient dry wash greater than ten feet in width)	Less than 100 feet	(10 points)	<u>0</u>
	Greater than 100 feet	(0 points)	
<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)	<u>0</u>
	Greater than 100 feet	(0 points)	
<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)	<u>0</u>
	No	(0 points)	
<b>Distance To Surface Water:</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)	<u>0</u>
	Greater than 1000 feet	(0 points)	
<b>RANKING SCORE (TOTAL POINTS):</b>			<u>0</u>



Date Remediation Started: \_\_\_\_\_ Date Completed: 10/16/98

Remediation Method: Excavation  Approx. cubic yards 900

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 24' (WEST SIDEWALL)

Sample date 10/16/98 Sample time 1045

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>ND</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 10/16/98 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) \_\_\_\_\_

SIGNED: K. C. M... DATE: 11-18-98



**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	Project #:	
Sample ID:	4 @ 24'	Date Analyzed:	10-16-98
Project Location:	Jicarilla Apache Tribal # 151 - 7	Date Reported:	10-16-98
Laboratory Number:	TPH-2056	Sample Matrix:	Soil

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

ND = Not Detectable at stated detection limits.

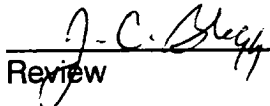
QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	236	220	7.02

\*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 - BJ665

  
Analyst

  
Review

**BLAGG ENGINEERING, INC.**

P.O. Box 87, Bloomfield, New Mexico 87413  
Phone: (505)632-1199 Fax: (505)632-3903

Field TPH-Worksheet

\*\*\*\*\*

Max Characters:

Client:

Sample ID:

Project Location:

Laboratory Number:

Amoco

4 @ 24'

Jicarilla Apache Tribal # 151 - 7

TPH-2056

Project #:

Date Analyzed:

Date Reported:

Sample Matrix:

10-16-98

10-16-98

Soil

Sample Weight: 5.00 grams  
Volume Freon: 20.00 mL  
Dilution Factor: 1 (unitless)  
TPH Reading: 5 mg/kg

TPH Result: 20.0 mg/kg  
Reported TPH Result: 20 mg/kg  
Actual Detection Limit: 20.0 mg/kg  
Reported Detection Limit: 20 mg/kg

QA/QC:

Original  
TPH mg/kg

-----

236

Duplicate  
TPH mg/kg

-----

220

%  
Diff.

-----

7.02

Comments: \*\*\*\*\*Max Characters\*\*\*\*\*

Comments: Production Tank Pit - BJ665

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

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

Client: Blagg / AMOCO  
Sample ID: 5 @ 19'  
Laboratory Number: E066  
Chain of Custody No: 6296  
Sample Matrix: Soil  
Preservative: Cool  
Condition: Cool and Intact

Project #: 04034-10  
Date Reported: 10-14-98  
Date Sampled: 10-13-98  
Date Received: 10-14-98  
Date Extracted: 10-14-98  
Date Analyzed: 10-14-98  
Analysis Requested: 8015 TPH

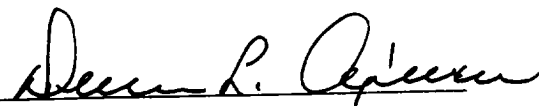
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	2,310	0.2
Diesel Range (C10 - C28)	558	0.1
Total Petroleum Hydrocarbons	2,860	0.2


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 Apache Tribal #151 - 7 **Blow Pit:**  
915

PRODUCTION TANK PIT.

  
Analyst

  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	5 @ 19'	Date Reported:	10-14-98
Laboratory Number:	E066	Date Sampled:	10-13-98
Chain of Custody:	6296	Date Received:	10-14-98
Sample Matrix:	Soil	Date Analyzed:	10-14-98
Preservative:	Cool	Date Extracted:	10-14-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	1,250	8.8
Toluene	16,230	8.4
Ethylbenzene	6,590	7.6
p,m-Xylene	31,260	10.8
o-Xylene	14,470	5.2
<b>Total BTEX</b>	<b>69,800</b>	

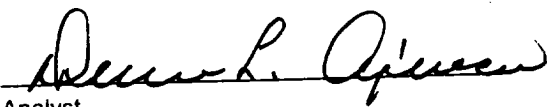
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	100 %
	Bromofluorobenzene	100 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Jicarilla Apache Tribal #151 - 7 *PRODUCTION TANK PIT.*  
*Blew Pit.*  
*AV*

  
Analyst

  
Review







Date Remediation Started: \_\_\_\_\_ Date Completed: 10/16/98

Remediation Method: Excavation  Approx. cubic yards 150

Check all appropriate actions) 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 MOSTLY BEDROCK, THEREFORE NO TPH ANALYSIS WAS CONDUCTED. RISK ASSESSED.

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

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

Sample location see Attached Documents

Sample depth 3' (SOUTH SIDEWALL)

Sample date 10/16/98 Sample time 1230

Sample Results

Soil: Benzene	(ppm)	_____	Water: Benzene	(ppb)	_____
Total BTEX	(ppm)	_____	Toluene	(ppb)	_____
Field Headspace	(ppm)	<u>300</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 10/16/98 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) R.A. Attached

SIGNED: K. C. Mandle DATE: 11-18-98

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>8J665</u> C.O.C. NO: _____
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FIELD REPORT: CLOSURE VERIFICATION PAGE No: 1 of 1

LOCATION: NAME: <u>JICA. AP. TRIBAL 151</u> WELL #: <u>7</u> PIT: <u>SEP.</u>	DATE STARTED: <u>10/16/98</u> DATE FINISHED: _____
QUAD/UNIT: <u>M SEC: 4</u> TWP: <u>Z6N</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>790' FSL/790' FWL</u> CONTRACTOR: <u>P &amp; S</u>	

EXCAVATION APPROX. 37 FT. x 29 FT. x 6 FT. DEEP. CUBIC YARDAGE: 150

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARM

LAND USE: RANGE LEASE: JICA 151 FORMATION: OR

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 180 FT. N57E FROM WELLHEAD.

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

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

SOIL AND EXCAVATION DESCRIPTION:

CHECK ONE:

PIT ABANDONED

STEEL TANK INSTALLED

FIBERGLASS TANK INSTALLED

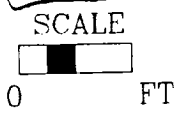
EXCAVATION CONSISTED OF MOSTLY LT. TO DK. GRAY SHALE, SOFT TO VERY HARD, FRIABLE, UNABLE TO DISCERN IF STAINED, NO APPARENT HC ODOOR DETECTED W/IN EXCAVATION, STRONG HC ODOOR DETECTED IN SOUTH SIDEWALL OVM SAMPLE ONLY, HC ODOOR DETECTED W/ EAST & WEST SIDEWALL OVM SAMPLES, ALL SAMPLES COLLECTED FROM BEDROCK, THEREFORE NO TPH ANALYSIS WAS CONDUCTED.

EXCAVATION MOSTLY BEDROCK

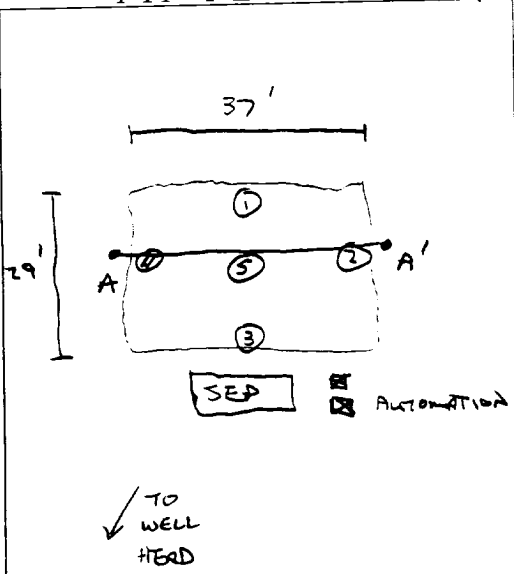
RISK ASSESSED

FIELD 418.1 CALCULATIONS

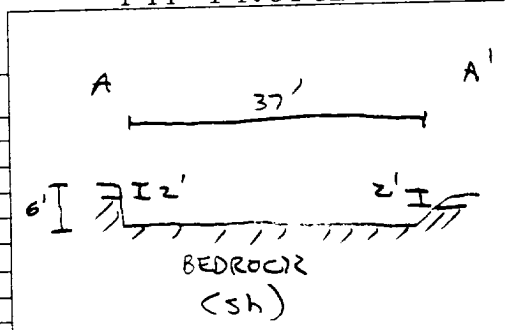
TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1230							



PIT PERIMETER



PIT PROFILE



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 4'	0.0
2 @ 4'	127.7
3 @ 3'	300
4 @ 3'	145.6
5 @ 6'	49.1

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

TRAVEL NOTES: CALLOUT: 10/15/98 - MORN. ONSITE: 10/16/98 - MORN.

<b>Well Name:</b>	<b>Jicarilla Apache Tribal 151 #7</b>
Well Site location:	Unit M, Sec. 4, T26N, R5W
Pit Type:	Separator Pit
Producing Formation:	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 shale bedrock at 6 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 6 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 0.90 miles south southeast of the nearest vulnerable area boundary (Cereza Canyon wash).

**(Refer to Vigas Canyon Quadrangle, New Mexico - Rio Arriba County, 7.5 Minute Series (Topographic), photorevised 1982, (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 subsurface lateral impact from the earthen pit is very limited and that the 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.



Date Remediation Started: \_\_\_\_\_ Date Completed: 10/16/98

Remediation Method: Excavation  Approx. cubic yards 100  
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.

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

Final Pit: Closure Sampling: Sample location see Attached Documents  
(if multiple samples, attach sample results and diagram of sample locations and depths) Sample depth 18' (PIT BOTTOM)  
Sample date 10/16/98 Sample time 1330

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>ND</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 KNOWLEGE AND BELIEF

DATE 10/16/98 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) \_\_\_\_\_

SIGNED: Ker C M... DATE: 11-18-98

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>BT665</u> C.O.C. NO: _____
----------------------	--	---

FIELD REPORT: CLOSURE VERIFICATION PAGE No: 1 of 1

LOCATION: NAME: <u>TIC 151</u> WELL #: <u>7</u> PIT: <u>UNKNOWN</u>	DATE STARTED: <u>10/16/98</u> DATE FINISHED: _____
QUAD/UNIT: <u>M SEC: 4 TWP: 26N RNG: 5W PM: NM CNTY: RA ST: NM</u>	ENVIRONMENTAL SPECIALIST: <u>NV</u>
QTR/FOOTAGE: <u>790' FSL / 790' FUL</u> CONTRACTOR: <u>P+S</u>	

EXCAVATION APPROX. 18 FT. x 17 FT. x 17 FT. DEEP. CUBIC YARDAGE: 100

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFILL

LAND USE: RANGE LEASE: TIC 151 FORMATION: OK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 240 FT. N20E FROM WELLHEAD.

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

NMDCD RANKING SCORE: 0 NMDCD TPH CLOSURE STD 5000 PPM

SOIL AND EXCAVATION DESCRIPTION:

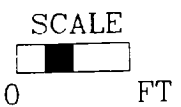
- CHECK ONE:
- PIT ABANDONED
  - STEEL TANK INSTALLED
  - FIBERGLASS TANK INSTALLED

NO. TO DK. YELL. ORANGE SAND, NO. COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT STAINING OBSERVED, NO APPARENT HC ODOR DETECTED w/in EXCAVATION OR IN ANY OF THE OVM SAMPLES.

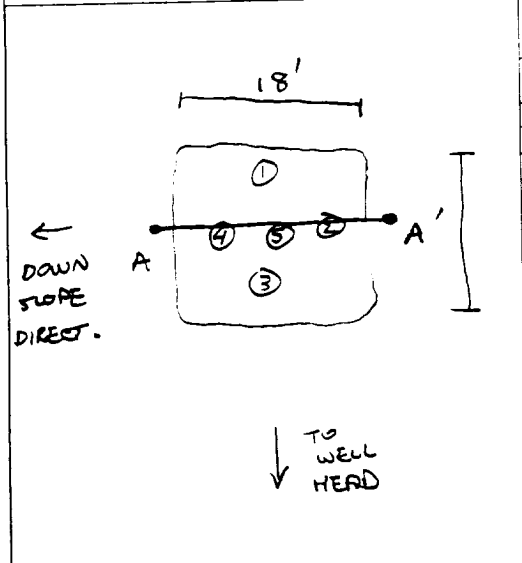
CLOSED

FIELD 418.1 CALCULATIONS

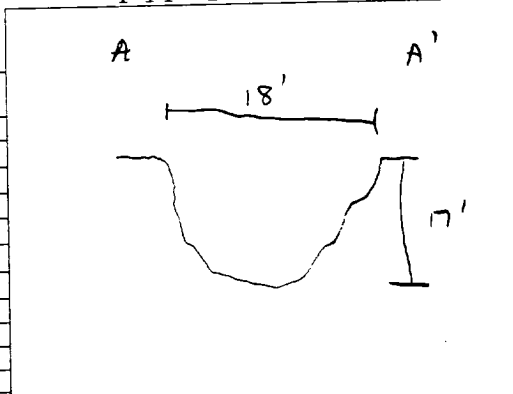
TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1330	⑤ @ 18'	TPH-2057	5	20	1:1	4	ND



PIT PERIMETER



PIT PROFILE



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 13'	0.0
2 @ 12'	0.0
3 @ 13'	0.0
4 @ 12'	0.0
5 @ 18'	0.0

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

TRAVEL NOTES: CALLOUT: 10/15/98 - moln. ONSITE: 10/16/98 - moln.

**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	Project #:	
Sample ID:	5 @ 18'	Date Analyzed:	10-16-98
Project Location:	Jicarilla Apache Tribal # 151 - 7	Date Reported:	10-16-98
Laboratory Number:	TPH-2057	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	<b>ND</b>	<b>20</b>

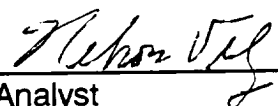
ND = Not Detectable at stated detection limits.

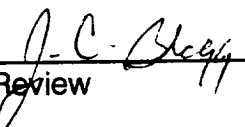
QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	236	220	7.02

\*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: Unknown Pit - BJ665

  
\_\_\_\_\_  
Analyst

  
\_\_\_\_\_  
Review

**BLAGG ENGINEERING, INC.**

P.O. Box 87, Bloomfield, New Mexico 87413  
Phone: (505)632-1199 Fax: (505)632-3903

Field TPH-Worksheet

\*\*\*\*\*

Max Characters:

Client:	Amoco	Project #:	
Sample ID:	5 @ 18'	Date Analyzed:	10-16-98
Project Location:	Jicarilla Apache Tribal # 151 - 7	Date Reported:	10-16-98
Laboratory Number:	TPH-2057	Sample Matrix:	Soil

Sample Weight:	5.00 grams
Volume Freon:	20.00 mL
Dilution Factor:	1 (unitless)
TPH Reading:	4 mg/kg

TPH Result:	16.0 mg/kg
Reported TPH Result:	16 mg/kg
Actual Detection Limit:	20.0 mg/kg
Reported Detection Limit:	20 mg/kg

QA/QC:	Original TPH mg/kg	Duplicate TPH mg/kg	% Diff.
	----- 236	----- 220	----- 7.02

Comments: \*\*\*\*\*Max Characters\*\*\*\*\*

Comments: Unknown Pit - BJ665



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

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 APACHE TRIBAL 151-7  
 Location: Unit or Qtr/Qtr Sec M Sec 4 T 26N R 5W County BIO ARIZONA  
 Land Type: RANGE

Date Remediation Started: 10.16.98 Date Completed: 5/24/99  
 Remediation Method: Landfarmed  Approx. cubic yards 1500  
 Composted   
 Other

Depth To Groundwater: (pts.) <u>0</u>	<b>Final Closure Sampling:</b> Sampling Date: <u>5.21.99</u> Time: <u>1050</u> Sample Results: Field Headspace (ppm) <u>59.7</u> TPH (ppm) <u>6.5</u> Method <u>TPH (8015)</u> Other _____
Distance to an Ephemeral Stream (pts.) <u>0</u>	
Distance to Nearest Lake, Playa, or Watering Pond (pts.) <u>0</u>	
Wellhead Protection Area: (pts.) <u>0</u>	
Distance To Surface Water: (pts.) <u>0</u>	
<b>RANKING SCORE (TOTAL POINTS):</b> <u>0</u>	

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

DATE 5/24/99 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  NO  (REASON) \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>BS655</u> C.D.C. NO: <u>6935</u>
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FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: <u>SICAZILLA APACHE TRIBAL 151</u> WELL #: <u>7</u> PITS: <u>SEP, BLOW, PROP, UNKNOWN</u>	DATE STARTED: <u>5-21-99</u> DATE FINISHED: _____
QUAD/UNIT: <u>M SEC: 4 TWP: 20N RNG: 5W PM: NM CNTY: RA ST: NM</u>	ENVIRONMENTAL SPECIALIST: <u>REP</u>
GTP/FOOTAGE: <u>SW/4 SW/4</u> CONTRACTOR: <u>P+S</u>	

SOIL REMEDIATION:

REMEDIATION SYSTEM: <u>LANDFARM</u>	APPROX. CUBIC YARDAGE: <u>1500</u>
LAND USE: <u>RANGE</u>	LIFT DEPTH (ft): <u>2</u>

FIELD NOTES & REMARKS:

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

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

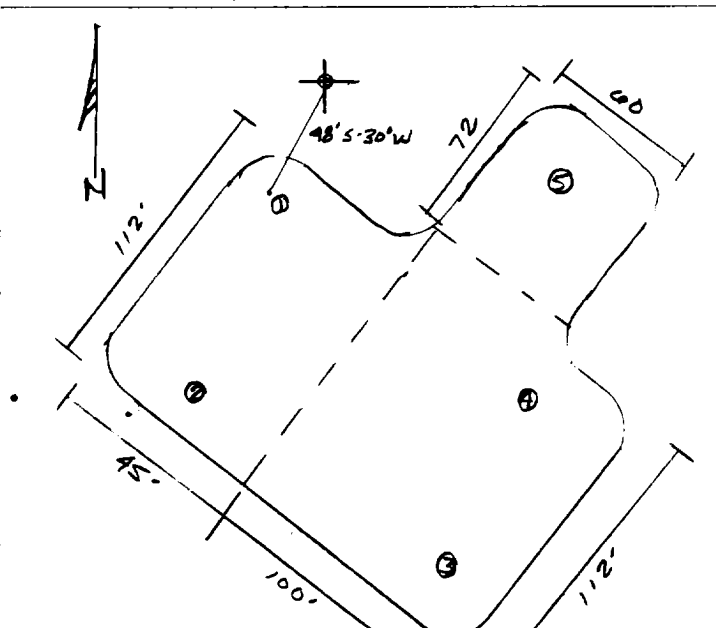
DK. YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST FIRM  
 NO APPARENT STAINING. H.C. ODOR DETECTED IN SAMPLING PT. ③  
 SAMPLING DEPTHS RANGE FROM 6"-12" COLLECTED ASPT COMPOSITE  
 SAMPLE FOR LAB ANALYSIS.

CLOSED

FIELD 418.1 CALCULATIONS

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

SKETCH/SAMPLE LOCATIONS



OVM RESULTS

LAB SAMPLES

SAMPLE ID	FIELD HEADSPACE RID (ppm)	SAMPLE ID	ANALYSIS	TIME	RESULTS
LF-1	59.7	LF-1	TPH (8015)	1050	6.5

SCALE



TRAVEL NOTES:

CALLOUT: NA

ONSITE: 5-21-99

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

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

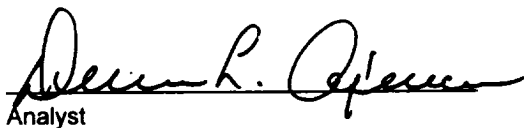
Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	LF - 1	Date Reported:	05-24-99
Laboratory Number:	F375	Date Sampled:	05-21-99
Chain of Custody No:	6935	Date Received:	05-24-99
Sample Matrix:	Soil	Date Extracted:	05-24-99
Preservative:	Cool	Date Analyzed:	05-24-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	4.4	0.2
Diesel Range (C10 - C28)	2.1	0.1
Total Petroleum Hydrocarbons	6.5	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 Apache Tribal 151 - 7 Landfarm. 5 Pt. Composite.

  
Analyst

  
Review

