

DENVER  
BJ 480

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NATURAL RESOURCE DEPT  
AND OIL & GAS ADMINISTRATION

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

**PIT REMEDIATION AND CLOSURE REPORT**

**RECEIVED**  
AUG 27 1999  
**OIL CON. DIV.**  
DIST. 8

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

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

**Facility or Well Name:** JICARILLA CONTRACT # 155-12E

**Location:** Unit or Qtr/Qtr Sec J Sec 32 T 26N R 5W County RIO ARRIERA

**Pit Type:** Separator ☐ Dehydrator ☐ Other BLOW

**Land Type:** RANGE

**Pit Location:** Pit dimensions: length 80', width 60', depth 18'  
(Attach diagram)

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

Footage from reference: 180'

Direction from reference: 72 Degrees \_\_\_\_\_ East of North \_\_\_\_\_  
X West of South X

<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 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)	
	Greater than 1000 feet	(0 points)	<u>0</u>

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

BJ4801 BLOW PIT

Date Remediation Started: \_\_\_\_\_ Date Completed: 12/19/96Remediation Method: Excavation ☒ Approx. cubic yards 2,000

(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 . SPRAYEDW/ FERTILIZER .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 12' (EAST SIDEWALK)Sample date 12/19/96 Sample time 1300

## Sample Results

Soil: Benzene (ppm) \_\_\_\_\_ Water: Benzene (ppb) \_\_\_\_\_

Total BTEX (ppm) \_\_\_\_\_ Toluene (ppb) \_\_\_\_\_

Field Headspace (ppm) 62.6 Ethylbenzene (ppb) \_\_\_\_\_TPH (ppm) 80 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 12/19/96 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: Ken C. Mammill DATE: 1-23-97

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>BT480</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 CONTRACT</u> WELL #: <u>155-12E</u> PIT: <u>BLWD</u>		DATE STARTED: <u>12/19/96</u>
QUAD/UNIT: <u>J</u> SEC: <u>32</u> TWP: <u>26N</u> RNG: <u>5W</u> PM: <u>NM</u> CNTY: <u>RA</u> ST: <u>NM</u>		DATE FINISHED: _____
QTR/FOOTAGE: <u>uu/4</u> <u>SE/4</u> CONTRACTOR: <u>P+S</u>		ENVIRONMENTAL SPECIALIST: <u>NV</u>

EXCAVATION APPROX. <u>80</u> FT. x <u>60</u> FT. x <u>18</u> FT. DEEP.	CUBIC YARDAGE: <u>2,000</u>
DISPOSAL FACILITY: <u>ON-SITE</u>	REMEDIATION METHOD: <u>LANDFARMED</u>
LAND USE: <u>RANGE</u>	LEASE: <u>JICA CONTR. #155</u> FORMATION: <u>OK</u>

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY <u>180</u> FT. <u>572W</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
SOIL AND EXCAVATION DESCRIPTION:	

<input checked="" type="checkbox"/> CHECK ONE:
<input type="checkbox"/> PIT ABANDONED
<input type="checkbox"/> STEEL TANK INSTALLED
<input type="checkbox"/> FIBERGLASS TANK INSTALLED

SIDEWALLS - DR. YELL. ORANGE TO BROWN SAND TO SILTY SAND NOW - COHESIVE SLIGHTLY MOIST, FIRM TO DENSE (DUE TO COLD TEMP.), SLIGHT. HC ODOR 'N EAST SIDEWALL DUM SAMPLE ONLY, VERY SMALL PATCHES OF ISOLATED STAINING OBSERVED ON NW CORNER OF EXCAVATION.

BOTTOM - BEDROCK, SANDSTONE HARD, DR. GRAY IN COLOR, STRONG HC ODOR 'N DUM SAMPLE, WILL SPRAY W/ FERTILIZER.

RISK ASSESSED

FIELD 418.1 CALCULATIONS

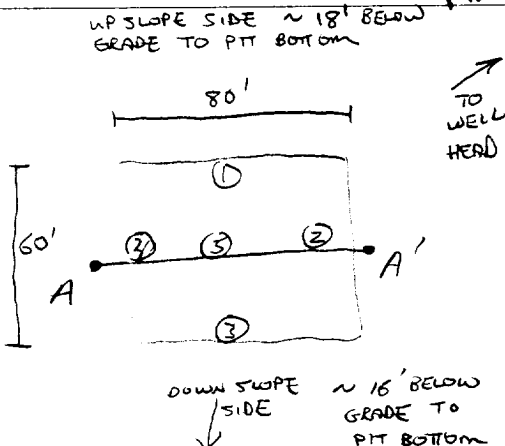
TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	ML. FREON	DILUTION	READING	CALC. ppm
1300	② @ 12'	TPH-1866	5	20	1:1	20	80

SCALE



0 FT

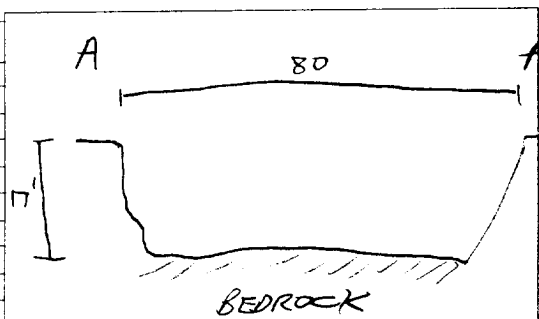
PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 14'	0.0
2 @ 12'	62.6
3 @ 13'	0.0
4 @ 14'	0.0
5 @ 18'	354

PIT PROFILE



LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

TRAVEL NOTES:	CALLOUT: <u>12/18/96</u> MORN.	ONSITE: <u>12/19/96</u> MORN.
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<b>Well Name:</b>	<b>Jicarilla Contract 155 #12E</b>
Well Site location:	Unit J, Sec. 32, T26N, R5W
Pit Type:	Blow Pit
Producing Formation:	Basin Dakota/Mesa Verde
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 sandstone bedrock at 18 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 18 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 0.16 miles east of the nearest vulnerable area boundary (tributary to Tapacito Creek).

**(Refer to Gonzales Mesa 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 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.

**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:	2 @ 12'	Date Analyzed:	12-19-96
Project Location:	Jicarilla Contract 155 - 12 E	Date Reported:	12-19-96
Laboratory Number:	TPH-1865	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
-----	-----	-----
Total Recoverable Petroleum Hydrocarbons	80	20

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	-----	-----	-----
	80	84	4.88

\*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: Blow Pit - BJ480

  
\_\_\_\_\_  
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

2 @ 12'

Jicarilla Contract 155 - 12 E

TPH-1865

Project #:

Date Analyzed:

Date Reported:

Sample Matrix:

12-19-96

12-19-96

Soil

Sample Weight: 5.00 grams  
Volume Freon: 20.00 mL  
Dilution Factor: 1 (unitless)  
TPH Reading: 20 mg/kg

TPH Result: 80.0 mg/kg  
Reported TPH Result: 80 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.

-----  
80

-----  
84

-----  
4.88

Comments:

\*\*\*\*\*Max Characters\*\*\*\*\*

Comments:

Blow Pit - BJ480

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

BJ480

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AND OIL & GAS ADMINISTRATION

**ON-SITE SOIL REMEDIATION REPORT**

<b>Operator:</b> <u>AMOCO PRODUCTION COMPANY</u>		<b>Telephone:</b> <u>(505) 326-9200</u>
<b>Address:</b> <u>200 Amoco Court, Farmington, NM 87401</u>		
<b>Facility or Well Name:</b> <u>JICARILLA CONTRACT #155-12E</u>		
<b>Location:</b> Unit or Qtr/Qtr Sec <u>J</u> Sec <u>32</u> T <u>26N</u> R <u>5W</u> County <u>RIO ARriba</u>		
<b>Land Type:</b> <u>RANGE</u>		
<b>Date Remediation Started:</b> <u>12/17/96</u>		<b>Date Completed:</b> <u>8/14/98</u>
<b>Remediation Method:</b> Landfarmed <u>X</u>		<b>Approx. cubic yards</b> <u>2,000</u>
Composted <u>      </u>		
Other <u>STOCKPILED (PREVIOUSLY LANDFARMED)</u>		
<b>Depth To Groundwater:</b> (pts.) <u>0</u>		<b>Final Closure Sampling:</b> Sampling Date: <u>8/13/98</u> Time: <u>      </u> Sample Results: Field Headspace (ppm) <u>0.0 (ALL SAMPLES)</u> TPH (ppm) <u>449</u> <sup>(SP-2)</sup> Method <u>8015</u> Other <u>MULTIPLE SAMPLES - SEE ATTACHED FORM</u>
<b>Distance to an Ephemeral Stream</b> (pts.) <u>0</u>		
<b>Distance to Nearest Lake, Playa, or Watering Pond</b> (pts.) <u>0</u>		
<b>Wellhead Protection Area:</b> (pts.) <u>0</u>		
<b>Distance To Surface Water:</b> (pts.) <u>0</u>		
<b>RANKING SCORE (TOTAL POINTS):</b> <u>0</u>		
<b>I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF</b>		
<b>DATE</b> <u>8/14/98</u>		<b>PRINTED NAME</b> <u>Buddy D. Shaw</u>
<b>SIGNATURE</b> <u>Buddy D. Shaw</u>		<b>AND TITLE</b> <u>Environmental Coordinator</u>
<b>AFTER REVIEW OF THE SOIL REMEDIATION INFORMATION, ON-SITE REMEDIATION IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.</b>		
<b>APPROVED:</b> YES <u>X</u> NO <u>      </u> (REASON) <u>Not for use as Backfill</u>		
<b>SIGNED:</b> <u>Kent Mamm</u>		<b>DATE:</b> <u>9-9-98</u>

CLIENT: <u>AMOCO</u>	<b>BLAGG ENGINEERING, INC.</b> P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>BT480</u> C.O.C. NO: <u>6044</u>
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## FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: <u>JCA. CONTR. ISS</u> WELL #: <u>1ZE</u> PITS: <u>BLOW</u> QUAD/UNIT: <u>J SEC:32 TWP:26N RNG:5W PM: NM CNTY: RA ST: NM</u> QTR/FOOTAGE: <u>NW/4 SE/4</u> CONTRACTOR: <u>P &amp; S</u>	DATE STARTED: <u>8/13/98</u> DATE FINISHED: _____ ENVIRONMENTAL SPECIALIST: <u>NV</u>
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SOIL REMEDIATION: REMEDIATION SYSTEM: <u>STOCKPILED/LANDFARM</u> LAND USE: <u>RANGE</u>	APPROX. CUBIC YARDAGE: <u>2,000</u> LIFT DEPTH (ft): <u>1'</u>
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### FIELD NOTES & REMARKS:

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

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

**STOCKPILE** - mostly dk. yell. brown sand non cohesive slightly moist firm no apparent discoloration or HC odor observed/detected @ any of the sampling pts. sampling depths into stockpiles ranged from 2' to 4', collected 5 pt. composite samples for lab analysis.

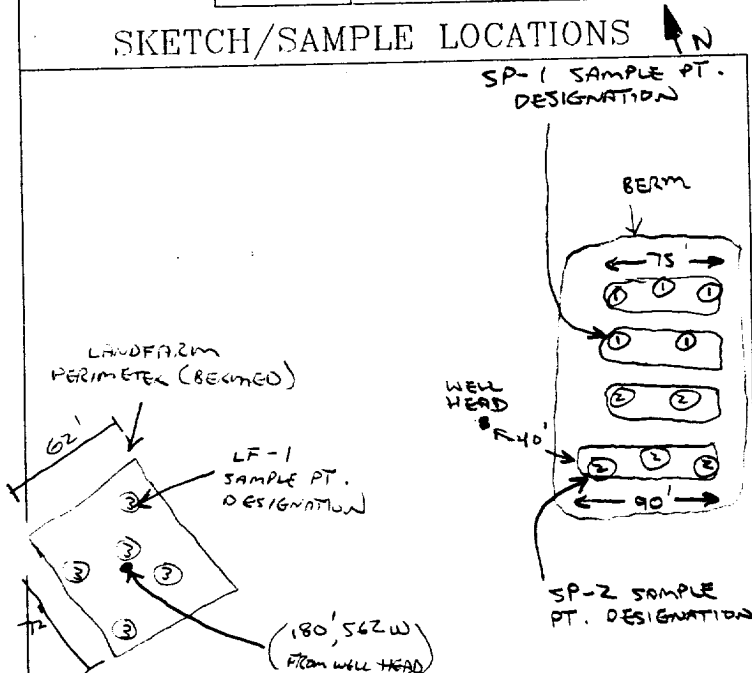
**LANDFARM** - mostly dk. yell. brown sand non cohesive slightly moist firm no apparent discoloration observed on surface or @ any of the sampling pts. sampling depths range from 4" to 8", collected 5 pt. composite for lab analysis.

### FIELD 418.1 CALCULATIONS

CLOSED

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

### SKETCH/SAMPLE LOCATIONS



### OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
SP-1	0.0
SP-2	0.0
LF-1	0.0

### LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME	RESULTS
SP-1	TPH (8015)	1315	11.0
SP-2	TPH (8015)	1415	449
LF-1	TPH (8015)	1200	149

### SCALE



### TRAVEL NOTES:

CALLOUT: NA

ONSITE: 8/13/98



# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

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

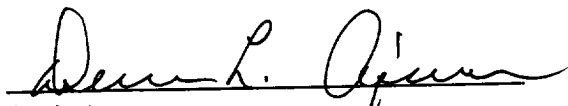
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	SP - 1	Date Reported:	08-14-98
Laboratory Number:	D805	Date Sampled:	08-13-98
Chain of Custody No:	6044	Date Received:	08-14-98
Sample Matrix:	Soil	Date Extracted:	08-14-98
Preservative:	Cool	Date Analyzed:	08-14-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

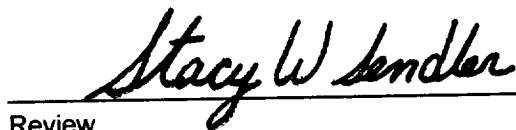
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	0.5	0.2
Diesel Range (C10 - C28)	10.5	0.1
Total Petroleum Hydrocarbons	11.0	0.2

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 Contract #155 - 12E Stockpile. 5 Pt. Composite.

  
Analyst

  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

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

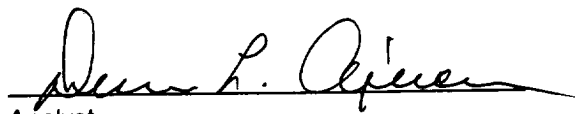
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	SP - 2	Date Reported:	08-14-98
Laboratory Number:	D806	Date Sampled:	08-13-98
Chain of Custody No:	6044	Date Received:	08-14-98
Sample Matrix:	Soil	Date Extracted:	08-14-98
Preservative:	Cool	Date Analyzed:	08-14-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	0.3	0.2
Diesel Range (C10 - C28)	449	0.1
Total Petroleum Hydrocarbons	449	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 Contract #155 - 12E Stockpile. 5 Pt. Composite.

  
Analyst

  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

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

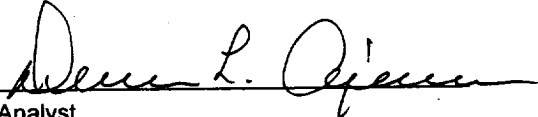
Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	LF - 1	Date Reported:	08-19-98
Laboratory Number:	D817	Date Sampled:	08-18-98
Chain of Custody No:	6048	Date Received:	08-18-98
Sample Matrix:	Soil	Date Extracted:	08-19-98
Preservative:	Cool	Date Analyzed:	08-19-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

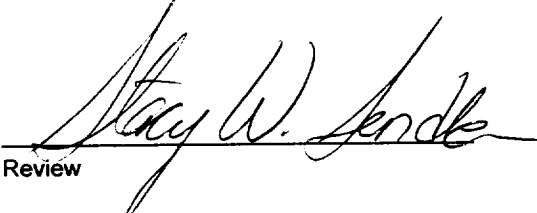
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	149	0.1
Total Petroleum Hydrocarbons	149	0.2

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 Contract #155 - 12E Landfarm. 5 Pt. Composite.

  
Analyst

  
Review

6044

Client / Project Name			Project Location			ANALYSIS / PARAMETERS									
BIOGAS / Amoco			MCAALLA CONTRACT #155-125												
Sampler: NTV			Client No. 04034-10			No. of Containers		Remarks							
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix											
SP-1	8/13/98	1315	D805	SOIL	1	✓								5 FT. COMPOSITE	
SP-2	8/13/98	1415	D806	SOIL	1	✓								5 FT. COMPOSITE	
AS 100 SHIMMY															
Relinquished by: (Signature) <i>[Signature]</i>			Date	Time	Received by: (Signature) <i>[Signature]</i>	Date	Time								
Relinquished by: (Signature) <i>[Signature]</i>			8/14/98	0825	Received by: (Signature) <i>[Signature]</i>	8-14-98	0825								
Relinquished by: (Signature)					Received by: (Signature)										
<div style="text-align: center;"> <b>ENVIROTECH INC.</b>  5796 U.S. Highway 64  Farmington, New Mexico 87401  (505) 632-0615 </div>														Sample Receipt Received Intact <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A Cool - Ice/Blue Ice <input checked="" type="checkbox"/> <input type="checkbox"/>	

## 6048

[illegible]