

*Denny S. Frost*  
DEPUTY OIL & GAS INSPECTOR

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

CA 441

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

MAY 04 1998

PIT REMEDIATION AND CLOSURE REPORT

*Approved*

Operator: CONOCO, INC. Telephone: (505) 324-5884  
Address: 3315 Bloomfield Hwy., Farmington, NM 87401  
Facility or Well Name: JICARILLA K #11  
Location: Unit or Qtr/Qtr Sec K Sec 2 T25N R5W County RIO ARriba  
Pit Type: Separator ☒ Dehydrator ☐ Other ☐  
Land Type: RANGE

Pit Location:  
(Attach diagram)

Pit dimensions: length 43', width 37', depth 19'

Reference: wellhead ☒, other ☐

Footage from reference: 115'

Direction from reference: 25 Degrees ☒ East North ☐  
West of 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)	0

**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)	
Greater than 100 feet	(0 points)	0

**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 Surface Water:**

(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)	0

RANKING SCORE (TOTAL POINTS): 0

CA441

SEP. PIT

Date Remediation Started: 8-20-96 Date Completed: 9/24/96

Remediation Method: Excavation ☒ Approx. cubic yards 900  
Check all appropriate (tick all appropriate) 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 13'Sample date 9/23/96 Sample time 0740

## Sample Results

Soil: Benzene	(ppm)	<u>0.0125</u>	Water: Benzene	(ppb)	_____
Total BTEX	(ppm)	<u>45.90</u>	Toluene	(ppb)	_____
Field Headspace	(ppm)	<u>1,125</u>	Ethylbenzene	(ppb)	_____
TPH	(ppm)	<u>3,460</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 9/24/96 PRINTED NAME Jeffrey C. Blagg, P.E. #11607SIGNATURE Jeffrey C. Blagg AND TITLE President

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: Kevin C. Marshall DATE: 9-30-96

CLIENT: CONOCO

BLAGG ENGINEERING, INC.  
P.O. BOX 87, BLOOMFIELD, NM 87413  
(505) 632-1199

LOCATION NO: CA441  
C.O.C. NO: 4909

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: JICARILLA K WELL #: 11 PIT: SEP

DATE STARTED: 9/23/96  
DATE FINISHED:

QUAD/UNIT: K SEC: 2 TWP: 25N RNG: 5W PM: N2M CNTY: RA ST: NM

ENVIRONMENTAL SPECIALIST: NV

QTR/FOOTAGE: NE 1/4 SW 1/4 CONTRACTOR: ACME/GARZA

EXCAVATION APPROX. 43 FT. x 37 FT. x 19 FT. DEEP. CUBIC YARDAGE: 900

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: LANDFARMED

LAND USE: RANGELAND LEASE: CONTRACT # K15 FORMATION: DRK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 115 FT. S25E FROM WELLHEAD.  
DEPTH TO GROUNDWATER: 2100' NEAREST WATER SOURCE: 2100' NEAREST SURFACE WATER: 2100'  
NMDCD RANKING SCORE: 0 NMDCD TPH CLOSURE STD: 5000 PPM

CHECK ONE  
☐ PIT ABANDONED  
☒ STEEL TANK INSTALLED

SOIL AND EXCAVATION DESCRIPTION:  
SIDEWALLS: MOSTLY DR. YELL. BROWN SAND (SOUTH SIDEWALL OLIVE GRAY), NON-COHESIVE, SLIGHTLY MOIST, STRONG HC ODOR IN SOUTH SIDEWALL OUM SAMPLE NO APPARENT STAINING OR HC ODOR OBSERVED EXCEPT FOR SOUTH SIDEWALL BOTTOM HALF PIT BOTTOM VERY MOIST TO SATURATED DUE TO SURFACE RUN OFF FROM RECENT PRECIPITATION (LAST 2 WEEKS).  
BEDROCK - BEDROCK, SANDSTONE, DR. GRAY IN COLOR, HARD, STRONG HC ODOR IN OUM SAMPLE.

CLOSED

SCALE  
0 FT

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
0740							

OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1C 14'	0.0
2C 13'	0.0
3C 13'	1125
4C 15'	0.0
5C 19'	1486

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
3C 13'	TPH / STEX	0740
	SOIS	
	BOTH PASSED	

PIT PERIMETER

PIT PROFILE

TRAVEL NOTES:

CALLOUT: 8/28/96 AFTER. ONSITE: 8/29/96 MORN.

<b>Well Name:</b>	<b>Jicarilla K # 11</b>
<b>Well Site location:</b>	<b>Unit K, Sec. 2, T25N, R5W</b>
<b>Pit Type:</b>	<b>Separator 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**

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 19 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 19 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. Field headspace readings (OVM/PID) on Basin Dakota type locations do not reflect direct correlation to total BTEX per USEPA Method 8020 concentrations. Listed below are several typical AMOCO Basin Dakota pit soil analyses comparing headspace to Benzene and total BTEX results.

LOCATION	HEADSPACE (ppm)	BENZENE (ppm)	TOTAL BTEX (ppm)
Frost, Jack B 1E	1100	0.011	5.889
Berger A1	482	0.084	0.681
Mudge Com B 1E	684	0.017	16.438
L.C. Kelly #5	1235	0.643	13.908

The comparisons listed above demonstrates that headspace testing is not an accurate measurement to Benzene or total BTEX concentrations when above standards for Basin Dakota type pits.

Based upon the information given, we conclude that the sandstone bottom creates enough of a 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). CONOCO 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

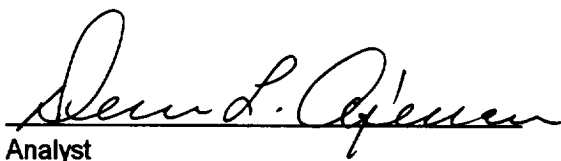
Client:	Blagg / Conoco	Project #:	04034
Sample ID:	3 @ 13'	Date Reported:	09-24-96
Laboratory Number:	A583	Date Sampled:	09-23-96
Chain of Custody No:	4909	Date Received:	09-24-96
Sample Matrix:	Soil	Date Extracted:	09-24-96
Preservative:	Cool	Date Analyzed:	09-24-96
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

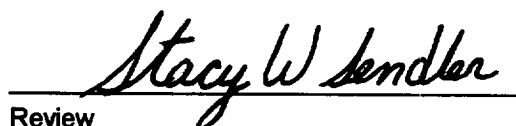
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	2,190	0.2
Diesel Range (C10 - C28)	1,270	0.1
Total Petroleum Hydrocarbons	3,460	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: Jicarilla K #11 Sep. Pit.

  
Analyst

  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Conoco	Project #:	04034
Sample ID:	3 @ 13'	Date Reported:	09-24-96
Laboratory Number:	A583	Date Sampled:	09-23-96
Chain of Custody:	4909	Date Received:	09-24-96
Sample Matrix:	Soil	Date Analyzed:	09-24-96
Preservative:	Cool	Date Extracted:	09-24-96
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	12.5	11.7
Toluene	1,100	11.1
Ethylbenzene	8,490	10.1
p,m-Xylene	21,000	14.4
o-Xylene	15,300	26.7
Total BTEX	45,900	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	99 %
	Bromofluorobenzene	99 %

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1994.

Comments: Jicarilla K #11 Sep. Pit.

  
Analyst

  
Review

San Juan Repro Form 570-01

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

CA441

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

ON-SITE SOIL REMEDIATION REPORT

Operator: <u>Conoco, Inc.</u>		Telephone: <u>(505) 324-5884</u>
Address: <u>3315 Bloomfield Hwy., Farmington, NM 87401</u>		
Facility or Well Name: <u>JICARILLA K #11</u>		
Location: Unit or Qtr/Qtr Sec <u>K</u> Sec <u>2</u> T <u>25N</u> R <u>5W</u> County <u>RIO ARriba</u>		
Land Type: <u>RANGE</u>		
Date Remediation Started: <u>9/23/96</u>		Date Completed: <u>8/18/97</u>
Remediation Method: Landfarmed <input checked="" type="checkbox"/>		Approx. cubic yards <u>900</u>
Composted <input type="checkbox"/>		
Other <input type="checkbox"/>		
Distance To Groundwater: (pts.) <u>0</u>		<b>Final Closure Sampling:</b> Sampling Date: <u>8/15/97</u> Time: <u>0820</u> Sample Results: Field Headspace (ppm) <u>111.4</u> TPH (ppm) <u>28.6</u> Method <u>8015</u> Other <u>                    </u>
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>		
RANKING SCORE (TOTAL POINTS): <u>0</u>		
<b>I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF</b>		
DATE <u>8/18/97</u>		PRINTED NAME <u>Jeffrey C. Blagg, P.E. #11607</u>
SIGNATURE <u>Jeffrey C. Blagg</u>		AND TITLE <u>President</u>
AFTER REVIEW OF THE SOIL REMEDIATION INFORMATION, ON-SITE REMEDIATION IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.		
APPROVED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> (REASON) <u>                    </u>		
SIGNED: <u>Kee C. Mammill</u>		DATE: <u>9-2-97</u>



CLIENT: CONOCOBLAGG ENGINEERING, INC.  
P.O. BOX 87, BLOOMFIELD, NM 87413  
(505) 632-1199LOCATION NO: CA 441C.O.C. NO: 5149

## FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: JICARILLA K WELL #: 11 PITS: SEP  
QUAD/UNIT: K SEC: 2 TWP: 25N RING: SW PM: NM CNTY: RA ST: NM  
UTM FOOTAGE: NEL4 SW14 CONTRACTOR: AcmeDATE STARTED: 8/15/97

DATE FINISHED: \_\_\_\_\_

ENVIRONMENTAL  
SPECIALIST: NU

## SOIL REMEDIATION:

REMEDICATION SYSTEM: LANDFARMEDAPPROX. CUBIC YARDAGE: 900LAND USE: RANGELIFT DEPTH (ft): 12"-24"

## FIELD NOTES &amp; REMARKS:

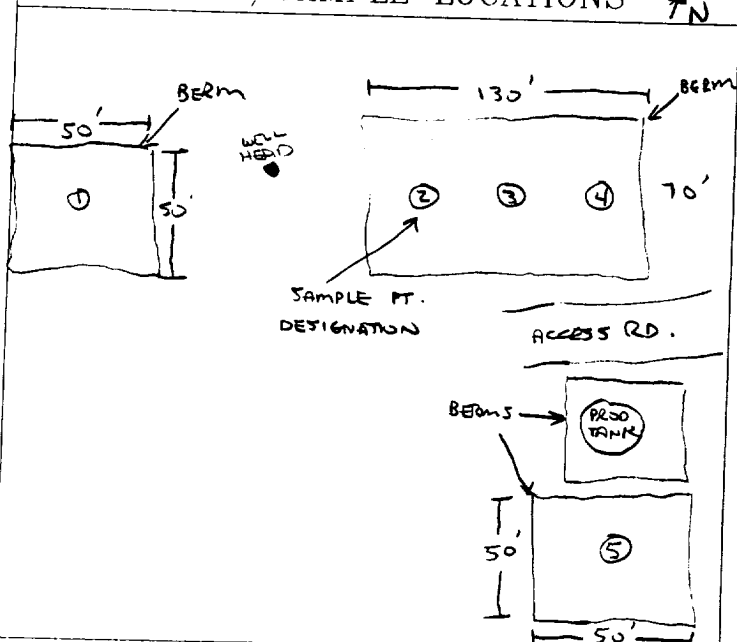
DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'NMDCD RANKING SCORE: 0 NMDCD TPH CLOSURE STD: 5000 PPM

MOSTLY OK. YELL. BROWN SAND TO SILTY SAND, NON COHESIVE, SLIGHTLY  
MOIST, FIRM, SAMPLE PT. ② CONTAINED BLACK DISCOLORATION W/ HC  
ODOR, HC ODOR OBSERVED W/IN OVM SAMPLE, 5 FT. COMPOSITE  
COLLECTED FOR LAB ANALYSIS.

## 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 PID (ppm)	SAMPLE ID	ANALYSIS	TIME	RESULTS
LF-1	111.4	LF-1	TPH (B013)	0820	28.6

## SCALE

0 FT

## TRAVEL NOTES:

CALLOUT: NAONSITE: 8/15/95

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

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

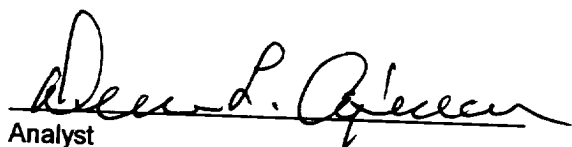
Client:	Blagg / Conoco	Project #:	04034-10
Sample ID:	LF - 1	Date Reported:	08-18-97
Laboratory Number:	B859	Date Sampled:	08-15-97
Chain of Custody No:	5149	Date Received:	08-15-97
Sample Matrix:	Soil	Date Extracted:	08-18-97
Preservative:	Cool	Date Analyzed:	08-18-97
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

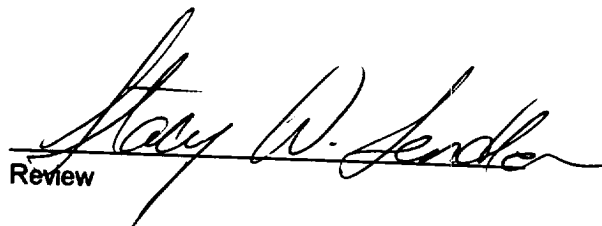
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.1	0.2
Diesel Range (C10 - C28)	27.5	0.1
Total Petroleum Hydrocarbons	28.6	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Comments: Jicarilla K #11 Landfarms. 5 Pt. Composite.

  
Analyst

  
Review

[illegible]