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

ICE DE GOOT PASSABAINISTRATION

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# PIT REMEDIATION AND CLOSURE REPORT OF GO

	Olding 3
Operator: AMOCO PRODUCTION COMPANY	<b>Telephone:</b> (505) 326-9200
	•
Address: 200 Amoco Court, Farmington, M	IM 8/401
Facility or Well Name: JICARIUA CON	TRACT # 147 - 7E
Location: Unit or Qtr/Qtr Sec O Sec 7 TZ	SN RSW County KID AIGHT
Pit Type: Separator Other_&	COW
Land Type: RANGE	
	donth 18'
Fit Location.	40', width37', depth18'
	other
Footage from reference:	0'
Direction from reference:	6 Degrees East North Of
	West South X
Depth To Groundwater: (Vertical distance from contaminants to seasonal high water elevation of	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 points)
proundwater)  Distance to an Ephemeral Stream (Downgradient dry wash greater than	Less than 100 feet (10 points) Greater than 100 feet (0 points)
ten feet in width)  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)
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)
Distance To SurfaceWater:  (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, 'rigation canals and ditches)	Less than 100 feet (20 points) 100 feet to 1000 feet (10 points) Greater than 1000 feet (0 points)
n .	RANKING SCORE (TOTAL POINTS):

		BT590 BLOW PIT
Data Remediation Stat	rted:	Date Completed: 7/22/98
nediation Method:	Excavation _×_	Approx. cubic yards750
eck all appropriate	<del>-</del>	Insitu Bioremediation
sections)	Landfarmed	
	Other	
Remediation Location: (i.e. landfarmed onsite,	Onsite Onsite	
name and location of offsite facility)	·	<b>A</b>
General Description o	of Remedial Action: <u>Excavati</u>	on. BEDROCK BOTTOM.
Groundwater Encount	tered: No X Yes _	Depth
Final   Pit:	Sample locationsee Attache	ed Documents
Closure Sampling:		
attach sample results	Sample depth 13 (South	21DEMAN)
locations and depths)	Sample date	Sample time 1030
	Sample Results	
lı	Soil: Benzene (ppm)	Water: Benzene (ppb)
	Total BTEX (ppm)	(ppb)
	Field Headspace (ppm)	Ethylbenzene (ppb)
		NO Total Xylenes (ppb)
		1 - namito)
	:: Yes NoX	
I HEREBY CERTIFY	THAT THE INFORMATION AB	OVE IS TRUE AND COMPLETE TO THE BEST OF MY
KNOWLEGE AND B		- as a ghour
DATE	7/22/98 PRINTED	NAME Buddy D. Shaw
SIGNATURE Suk	ly D. Shaw AND T	ITLE Environmental Coordinator
AFTER REVIEW OF TO THE JICARILLA	THE PIT CLOSURE INFORMAT A APACHE TRIBE PIT CLOSURE	TON, PIT CLOSURE IS APPROVED IN ACCORDANCI ORDINANCE.
APPROVED: YES	NO (REASON)	
SIGNED:	-C Manle DATI	E: 9-9-98

CLIENT: AMOCO	P.O. BOX 87, 1 (50)	5) 632-1199	NM 87413	C.O.C. NO:
FIELD REPOR	RT: CLOSU	RE VERIFI	CATION	
LOCATION: NAME: JICA. C	ONTR. 147 WELL	#: 9E PIT: BL	ഡ	DATE STARTED:
QUAD/UNIT: O SEC:	TWP: こらり RNG: S	W PM: NM CNT	Y: RA ST:NM	ENVIRONMENTAL SPECIALIST:
OTR/FOOTAGE: 910 FSL				
EXCAVATION APPROX. 4	<u>0</u> FT. x <u>3フ</u> F	T. x <u>18</u> FT. D	EEP. CUBIC	YARDAGE: 750
DISPOSAL FACILITY:	ON-SITE	REMEDIAT	TION METHO	D: LANDFAICH
LAND USE: LANGE				
FIELD NOTES & REMAI	RKS: PIT LOCATED	APPROXIMATELY _	170 FT.	<u>5160</u> FROM WELLHEA!
DEPTH TO GROUNDWATER: 218	NEAREST WATER SE	DURCE:	NEAREST SURFACE	CHECK DNE:
NMOCD RANKING SCORE:	NWOCD THE CLUSOR	E 210 _3000 FFM	-	_ PIT ABANDUNED _ STEEL TANK INSTALLED
				_ FIBERGLASS TANK INSTALLE
SOIL MOSTLY (	DR. YELL ORDIGE T	TO SLIVE GRAY	SAND NON	COHESIDE, SLIGHTUY
ONLY NO A	PRARENT HC 000	R PETECTED WI	IN EXCAUA	TION OR IN PLAY
200 300 200	and something			
nottom - BEA	ROCK (SHALE) PAL	e YELL AROWALL	VERY OK. KE C ODOK PR	ed color mixtures, the color of
Ext	CAUATION, NO APUR	BENT HE DOOR	IN DUHL S	emple.
BEDROCK (LLOS				
Вопот	TIME SAMPLE I.D.	FIELD 418.1 (	GALCULATIONS  g) mL. FREON C	ILUTION READING CALC. ppm
SCALE		TPH-2003 5		1:1 5 NO
O FT				
0 FT PIT PERIM	ETER AN		PIT	PROFILE
TO WELL HEAD	7	OVM	A	40' A
ਜ਼ਿਲਾ/ ਮੁਹਾਂ	SAMF		<b>-</b>	
	101	31 0.0	at T	
T	2e , 3e , 4e ,	3' 0.0	18 7	
37	3 A 5E			SEDROCK
3' A Ø S	<u> </u>		ashiate esse	
3				
		LAB SAMPLES		
	SAMPL	E ANALYSIS TIME		
TRAVEL NOTES: CALLOL	IT: 7/21/98 - AF	TER ONSITE	7/22/98	- morn.
TRAVEL NOTES: CALLOU	Л: <u>- 7 - 7 - 77</u>			

### 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:

3 @ 13'

Date Analyzed:

07-22-98

Project Location:

Jicarilla Contract # 147 - 9E

Date Reported:

07-22-98

Laboratory Number:

TPH-2003

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
 Duplicate
 %

 TPH mg/kg
 TPH mg/kg
 \*Diff.

 ---- ---- ---- 

 1684
 1712
 1.65

Method:

Modified Method 418.1, Petroleum Hydrocarbons, Total

Recoverable, Chemical Analysis of Water and Waste,

USEPA Storet No.4551, 1978

Comments:

Blow Pit - BJ590

Analyst

Review

<sup>\*</sup>Administrative Acceptance limits set at 30%.

### 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** 

**Laboratory Number:** 

3 @ 13'

Project #:

Sample ID:

TPH-2003

Date Analyzed:

**Project Location:** 

Jicarilla Contract # 147 - 9E

07 - 22 - 9807-22-98 Date Reported:

Sample Matrix:

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

Duplicate TPH mg/kg

% Diff.

1684

1712

1.65

Comments:

Comments:

Blow Pit - BJ590

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

BJ590 . SUBMIT 1 COPY TO

NATURAL RESOURCE DEFT

AND OIL & GAS ADMINISTRATION

## PIT REMEDIATION AND CLOSURE REPORT

	1===1200 0200
Operator: AMOCO PRODUCTION COMPANY	Telephone: (505) 326-9200
Address: 200 Amoco Court, Farmington, N	M 87401
Facility or Well Name: JI CARILLA CONTRAC	7 # 147 - TE
Location: Unit or Qtr/Qtr Sec Sec T T 75	R SW County RIO ARRISA
Pit Type: Separator Other_Co	mpressor
Land Type: LANGE	
Pit Location: Pit dimensions: length	<b>Ζ9', width_ 3</b> (', depth_ <b>2</b> ( <sup>†</sup>
(Attach diagram)  Reference: wellhead X,	other
Footage from reference: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	0
Direction from reference: 43	B Degrees East 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)
Distance to an Ephemeral Stream (Downgradient dry wash greater than	Less than 100 feet (10 points) Greater than 100 feet (0 points)
Distance to Nearest Lake, Playa, or Watering Pond (Downgradient lakes, playas and	Less than 100 feet (10 points) Greater than 100 feet (0 points)
livestock or wildlife watering ponds)  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)
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) Greater than 1000 feet (0 points)
	RANKING SCORE (TOTAL POINTS):

	8J590 COMPRESSOR PIT
Data Remodiation Sta	rted: Date Completed: 7   24   98
	Excavation Approx. cubic yards 600
mediation Method:  cck all appropriate	Landfarmed Insitu Bioremediation
sections)	LandramicdA_
· A	Other
Remediation Location (i.e. landfarmed onsite,	: Onsite X Offshe
name and location of offsite facility)	- C- A-rest
General Description	of Remedial Action: Excavation, BEDROCK BOTTOM, RICK ASSESSED.
Groundwater Encoun	tered: No X Yes Depth
	Altached Documents
Final Pit: Closure Sampling:	Sample location see Attached Documents
(if multiple samples, attach sample results	
and diagram of sample locations and depths)	Sample depth 151 (NORTH SIDEWALL)
locations and deputs	Sample date 7/22/98 Sample time 5930
ll	Sample Results  (ppm) ND Water: Benzene (ppb)
l	Soil: Benzene (ppm)
	Total BTEX (ppin)
	Field Headspace (ppm)
	TPH (ppm) 6.6 Total Xylenes (ppb)
Groundwater Sampl	e: Yes No _X (If yes, attach sample results)
li .	Y THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY
I HEREBY CERTIF	BELIEF
	7 24 98 PRINTED NAME Buddy D. Shaw
DATE	Oly D. Show AND TITLE _Environmental Coordinator
SIGNATURE CO	THE OF THE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE
UTO THE HCARILL	A APACHE IRIBETTI CEST
APPROVED: YES	X NO_ (REASON) RA Attached
	-CMall DATE: 9-9-98
SIGNED:	

P.O. BOX 87, I	5) 632-1199	NM 07415	C.D.C. ND: 67590
FIELD REPORT: CLOSU	RE VERIFI	CATION	PAGE No: of
OCATION: NAME: JICA CONTR. 147 WELL			DATE STARTED: 7/23/18
QUAD/UNIT: SEC: 7 TWP: 25 N RNG:	SIA PM: NET CNT	Y: RA ST: Nr	DATE FINISHED:
QTR/FOOTAGE: 910' FSL / 1740' FEL CONTI	RACTOR: P&S		SPECIALIST: NU
OTR/FUUTAGE: 476 P32/// P5 P22 GSM	21 pm r	EEB CUBIC	YARDAGE: 606
excavation approx. 29 ft. x 31 f	T. x FI. L	DEEP. CODIC	ID LANDFARM
DISPOSAL FACILITY: 00-517E	REMEDIA	METRO FOI	RMATION: DK 16P
AND USE: CANGE LEASI	E:		
THE PLANTS OF THE PROPERTY OF	ADDDDVIMATELY	110 FT. 6	543W_ FROM WELLHEAD
NEAREST WATER S	DURCE:	NEAKEST SOM	CHECK ONE:
MOCD RANKING SCORE: >100' NMOCD TPH CLOSUR	RE STD: 500 PPM		_ PIT ABANDONED
SOIL AND EXCAVATION DESCRIPTION:		l	STEEL TANK INSTALLED FIBERGLASS TANK INSTALLE
		سسسا (اُ سامود معارض	of YELL OWNER TO
SIDELLARUS INDSTRY CONTISTOR OF STATE O	GAND, COLOR ON	tikm some	small Garage
SHIPE GROY NOW COMESTER, THE	ILS MEDIC 1917	हर्गार्था इस	IN ING APPARENT IN
MILTER STREWALL ONLY, NO APPRIL	en HC OOOR O	ETECTED w/1 uY	IN EXCAUATION SCIENT
He DOR IN NORTH SIDEWALL BL	)	· (*)	WARD HE SOOR
	GEAU/ DUSKY RED	IN COLOR	PIMICO, IL ODOR
BOTTOM - BEDROCK (SHOLE), LT C	smy/ousky Rad omple.	in color,	pimes, he sook
BOTOM - BEDROCK (SHOLE) LT & DETECTED IN OUM SI	skay/ousky Rad omple.	ر المادى الما	Almes, HE SUCK
BOTOM - BEDROCK (SHALE), LT C	ompe.	,	HIMES, HE SUCK
BOTTOM - BEDROCK (SHALE) LT DEFECTED IN OUM SI	PMPE.	CALCUL ATIONS	
BOTOM - BEDROCK (SHALE) LT DEFECTED IN OUM SI	PMPE.	CALCUL ATIONS	
BOTTOM - BEDROCK (SHALE) LT DEFECTED IN OUM SI	PMPE.	CALCUL ATIONS	
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OUM SAMPLE I.D.  SCALE  SCALE	PMPE.	CALCULATIONS (g) mL. FREON	DILUTION READING CALC. ppm
BOTOM - BEDROCK (SPALE) LT CONTROL OF STATE OF S	PMPE.	CALCUL ATIONS	DILUTION READING CALC. PPM
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OUM SI	PMPE.	CALCULATIONS (g) mL. FREON	DILUTION READING CALC. PPM
BOTTOM - BEDROCK (SPALE) LT DEFECTED IN OUM STA	FIELD 418.1  O. LAB NO: WEIGHT  OVM  RESULTS	CALCULATIONS (g) mL. FREON PIT	DILUTION READING CALC. ppn
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OUM STA	OVM RESULTS  PIELD 418.1  OVM RESULTS  MPLE   FIELD HEADSPACE PID (ppm)	CALCULATIONS (g) mL. FREON PIT	DILUTION READING CALC. PPM
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OUM STATES SAMPLE I.D.  SCALE  O FT  PIT PERIMETER IN  Z9'  SAM  1 E	FIELD 418.1  O. LAB NO: WEIGHT  OVM  RESULTS  MPLE FIELD 418.1	CALCULATIONS (g) mL. FREON PIT	DILUTION READING CALC. ppn
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OUM STATES IN SAMPLE I.D.  SCALE  O FT  PIT PERIMETER IN  29'  SAMPLE 1.D.  SAMPLE	OVM RESULTS PIELD HEADSPACE PID (ppm) 15' SO.5 17' 8.5	CALCULATIONS (g) mL. FREON PIT	DILUTION READING CALC. PPM
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OWN STATES OF TIME SAMPLE I.D.  SCALE  O FT  PIT PERIMETER IN  29'  SAM  1 E  2e  3 E  4 E  5 E	OVM RESULTS PIELD HEADSPACE PID (ppm) 15' SO.5 17' 8.5	CALCULATIONS  (g) ml. FREON  PIT	DILUTION READING CALC. ppn
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OWN STATES OF TIME SAMPLE I.D.  SCALE  TIME SAMPLE I.D.	OVM RESULTS PIELD HEADSPACE PI	CALCULATIONS (g) ml. FREON  PIT	DILUTION READING CALC. ppm PROFILE 31
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OWN STATES OF SAMPLE I.D.  SCALE  OFT  PIT PERIMETER IN  29'  SAMPLE I.D.  SAMPLE I	OVM RESULTS PIELD HEADSPACE PI	CALCULATIONS  (g) ML. FREON  PIT	DILUTION READING CALC. ppm PROFILE
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OWN STATES OF TIME SAMPLE I.D.  SCALE  OFT  PIT PERIMETER IN  29'  10 30 30 31'  50 30 31'  50 50 50 50 50 50 50 50 50 50 50 50 50 5	OVM RESULTS PIELD HEADSPACE PI	CALCULATIONS (g) ml. FREON  PIT	DILUTION READING CALC. ppm  PROFILE  31
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OWN STATES OF SAMPLE I.D.  SCALE  OFT  PIT PERIMETER IN  29'  SAMPLE I.D.  SAMPLE I	OVM RESULTS PIELD HEADSPACE PI	CALCULATIONS  (g) ML. FREON  PIT	DILUTION READING CALC. ppm  PROFILE  31
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OWN STANDED SCALE  SCALE  O FT  PIT PERIMETER IN  29'  TONK  TO 30 31'  A'  TO SAM  A'  TO SAM  A'  TO SAM  BEDROCK (SPALE) LT COMM STANDED STA	OVM RESULTS  MPLE FIELD HEADSPACE PID (oppm)  15' SO. S  17' 8.5  15' 9.5  24' 1(8.3)  LAB SAMPLES  PLE ANALYSIS TIME	CALCULATIONS (g) ML. FREON  PIT  A  IG  STAINES  AKEA	DILUTION READING CALC. ppm  PROFILE  31
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OWN STATES OF THE SAMPLE I.D.  SCALE  O FT  PIT PERIMETER IN  29'  SAM  1 & 22  3 & 4 & 22  3 & 4 & 22  3 & 4 & 22  4 & 22  4 & 22  4 & 22  5 & 22  4 & 22  5 & 22  6 & 22  7 & 24  7 & 24  7 & 25  WELL I DEPARTMENT OF THE SAMPLE I.D.  SAM  1 & 22  3 & 4 & 22  3 & 4 & 22  3 & 4 & 22  4 & 22  5 & 24  6 & 25  6 &	OVM RESULTS  MPLE FIELD HEADSPACE PID (ppm)  15' SO. S  17' 8.5  15' O.O  15' 9.5  21' 1(8.3)  LAB SAMPLES PLE ANALYSIS TIME  15' TPH 0930	CALCULATIONS (g) ML. FREON  PIT  A  IG  STAINES  AKEA	DILUTION READING CALC. ppm  PROFILE  31
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OWN STANDS IN SAMPLE I.D.  SCALE  O FT  PIT PERIMETER IN  29'  TONK  TO 30  A'  TO SAM  A'  TO SAM  SAM  A'  TO SAM  BEDROCK (SPALE) LT COMM STANDS  SAM  A'  TO SAM  SAM  BEDROCK (SPALE) LT COMM STANDS  SAM  TO SAM  BEDROCK (SPALE) LT COMM STANDS  SAM  BEDROCK (SPALE) LT COMM STANDS  SAM  TO SAM  BEDROCK (SPALE) LT COMM STANDS  SAM  TO SAM  BEDROCK (SPALE) LT COMM STANDS  SAM  TO SAM  TO SAM  BEDROCK (SPALE) LT COMM STANDS  SAM  TO SAM  BEDROCK (SPALE) LT COMM STANDS  SAM  BEDROCK (SPA	OVM RESULTS  MPLE FIELD HEADSPACE PID (oppm)  15' SO. S  17' 8.5  15' 9.5  24' 1(8.3)  LAB SAMPLES  PLE ANALYSIS TIME	CALCULATIONS (g) ML. FREON  PIT  A  IG  STAINES  AKEA	DILUTION READING CALC. ppm PROFILE
BOTOM - BEDROCK (SPALE) LT DEFECTED IN OWN STATES OF THE SAMPLE I.D.  SCALE  O FT  PIT PERIMETER IN  29'  SAM  1 & 22  3 & 4 & 22  3 & 4 & 22  3 & 4 & 22  4 & 22  4 & 22  4 & 22  5 & 22  4 & 22  5 & 22  6 & 22  7 & 24  7 & 24  7 & 25  WELL I DEPARTMENT OF THE SAMPLE I.D.  SAM  1 & 22  3 & 4 & 22  3 & 4 & 22  3 & 4 & 22  4 & 22  5 & 24  6 & 25  6 &	OVM RESULTS PIEL D 418.1  OVM RESULTS PIEL PLEADSPACE PID (ppm) 15' SO. S 17' 8.5 15' 9.5 21' 1(8.3)  LAB SAMPLES PIEL ANALYSIS TIME 15' TPH 09.30	CALCULATIONS (g) ML. FREON  PIT  A  I 6  STAINED  A  A  A  A  A  A  A  A  A  A  A  A  A	DILUTION READING CALC. PPM PROFILE 31

Well Name:

Well Site location:

Pit Type:

**Producing Formation:** 

Pit Category:

Horizonal Distance to Surface Water:

Vicinity Groundwater Depth:

Jicarilla Contract 147 #9E Unit O, Sec. 7, T25N, R5W

Compressor Pit

Basin Dakota/Gallup Non Vulnerable

on vumerable > 1000 ft.

> 100 ft.

### RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe encountered shale bedrock at 21 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 21 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.
- 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 <u>non-vulnerable area</u> and is approximately 0.40 miles north of the nearest vulnerable area boundary (Gonzales Canyon wash).

(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 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.



Gasoline Range (C5 - C10)  Diesel Range (C10 - C28)		0.6 ND	0.2
Parameter		Concentration (mg/Kg)	Det. Limit (mg/Kg)
Client: Sample ID: Laboratory Number: Chain of Custody No: Sample Matrix: Preservative: Condition:	Blagg / AMOCO 1 @ 15' D684 6108 Soil Cool Cool and Intact	Project #: Date Reported: Date Sampled: Date Received: Date Extracted: Date Analyzed: Analysis Requested:	04034-10 07-24-98 07-22-98 07-24-98 07-24-98 07-24-98 8015 TPH

ND - Parameter not detected at the stated detection limit.

**Total Petroleum Hydrocarbons** 

References:

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,

SW-846, USEPA, December 1996.

Comments:

Jicarilla Contract #147 - 9E Compressor Pit.



### EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client: Sample ID: Laboratory Number: Chain of Custody: Sample Matrix: Preservative: Condition:	Blagg / AMOCO 1 @ 15' D684 6108 Soil Cool Cool & Intact	Project #: Date Reported: Date Sampled: Date Received: Date Analyzed: Date Extracted: Analysis Requested:		04034-10 07-24-98 07-22-98 07-24-98 07-24-98 07-24-98 BTEX
Parameter	<del>-</del> -	entration /Kg)	Det. Limit (ug/Kg)	
Benzene Toluene Ethylbenzene p,m-Xylene o-Xylene	ND ND ND 77.1 35.2		8.8 8.4 7.6 10.8 5.2	
Total BTEX		112		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene Bromofluorobenzene	96 % 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-82

USEPA, December 1996.

Comments:

Jicarilla Contract #147 - 9E Compressor Pit.

Den L. Offeren

Stary W. Jande

BJ590

# 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

	(505)326-9200
Operator: AMOCO PRODUCTION COMPANY	Telephone: (505)326-9200
Address: 200 Amoco Court, Farmington, N	м 87401
Facility or Well Name: TICARILLA CONTR	<u>ner #141-46</u>
Location: Unit or Qtr/Qtr Sec Sec T	SA REW County NO HIGGISH
Pit Type: Separator Other	
Land Type:	
Pit Location: Pit dimensions: length	30, width_ 30, depth_ 17'
(Attach diagram)  Reference: wellhead X,	other
Footage from reference:165	3' North V
Direction from reference: $\boxed{}$	Degrees East North Of West South
Depth To Groundwater: (Vertical distance from contaminants to seasonal high water elevation of	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 points)
groundwater)  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)
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)
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)
Distance To SurfaceWater: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, trigation canals and ditches)	Less than 100 feet (20 points) 100 feet to 1000 feet (10 points) Greater than 1000 feet (0 points)
h	RANKING SCORE (TOTAL POINTS):

Deta Remodiation Sta	arted: Date Completed: 7/24/98
	Amney outlie yards 500
nediation Method: eck all appropriate	Landfarmed X Insitu Bioremediation
sections)	Other
Remediation Location (i.e. landfarmed onsite,	: Onsite Onsite
name and location of offsite facility)	
General Description	of Remedial Action: Excavation. SEDROCK BOTTOM, RISK ASSESSED.
Groundwater Encoun	ntered: No X Yes Depth
Final Pit:	Sample location see Attached Documents
Closure Sampling: (if multiple samples,	
attach sample results and diagram of sample	Sample depth 12 (WEST FIDEWALL)
locations and depths)	Sample date
	Sample Results
h	Soil: Benzene (ppm) 2.740 Water: Benzene (ppb)
	Total BTEX (ppm) 179.030 Toluene (ppb)
	Field Headspace (ppm) 1,110 Ethylbenzene (ppb)
	TPH (ppm) 1,800 Total Xylenes (ppb)
11	e: Yes No _X (If yes, attach sample results)
I HEREBY CERTIF KNOWLEGE AND I	Y THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY BELIEF
DATE	7   Z4   98 PRINTED NAME Buddy D. Shaw
SIGNATURE BUS	2 dy D. Shaw AND TITLE Environmental Coordinator
TO THE JICARILLA	F THE PIT CLOSURE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE A APACHE TRIBE PIT CLOSURE ORDINANCE.
APPROVED: YES	X NO (REASON) R.A. Attached
h	CMa DATE: 9-9-98
SIGNED:	

CLIENT: AMOCO		LOOMFIELD, ) 632-1199	NM 87413	
FIELD REPOR	RT: CLOSUF	RE VERIFI	CATION	PAGE No: of
QUAD/UNIT: SEC: 7	TWP: 250 RNG: 51	3 PM: Nm CNT	EP Y: RA ST: NM	DATE STARTED: 7/22/98 DATE FINISHED: ENVIRONMENTAL PU
EXCAVATION APPROX  DISPOSAL FACILITY:  LAND USE: RANG	E LEASE:	REMEDIAT	rion metho foi	RMATION: OK/6P
FIELD NOTES & REMA  DEPTH TO GROUNDWATER: >1  NMOCD RANKING SCORE: CONTROL  SOIL AND EXCAVATI	OO' NEAREST WATER SOU  NMOCD TPH CLOSURE  DN DESCRIPTION:	STD: 5000 PPM	NEAREST SURFAC	CHECK ONE:  PIT ABANDONED  STEEL TANK INSTALLED  FIBERGLASS TANK INSTALLED
WEST SIDEWALL  PRIMARILY BE  STOINING ON  WITH EXCONOTI	SET OF DK. YELL.  SAND NOW COME  ONOCK (SOFT, DUSKY R  APPROX. 15% OF  M, STRONG HC OD  BEDROCK (SHALE)  HC ODOR WIN E  STAINING EVIDENT	ESTUE SCIENTED OF SOUTH OF SOUTH OF TECTED OF THE STATE O	H L WEST S NO APPARENT N SOUTH L	EAST SIDEWALL  IDEWALLS REVEAL  HE ODOR DETECTED  WEST SIDEWALL OWN  HARD NO APPARENT  E NO APPARENT
BOTTON KISK	TIME SAMPLE I.D.	FIELD 418.1 LAB No: WEIGHT (	CALCULATIONS (g) mL. FREON [	DILUTION READING CALC. ppm
SCALE  O FT  PIT PERIM	IETER 10		PIT	PROFILE
30 A 9 3	A AUTO DE LA SAMPLE HERD L'DEIZ	AB SAMPLES  ANALYSIS TIME  7 TOPH   BTE 0830		SEDROCK  DINSKY RED SOFT SHALE
TRAVEL NOTES: CALLO	IT: <u>7/21/98 - AFT</u>	SR . ONSITE: _	7/22/98 -r	nord.

Well Name:

Well Site location:

Pit Type:

Producing Formation:

Pit Category:

Horizonal Distance to Surface Water:

Vicinity Groundwater Depth:

Jicarilla Contract 147 #9E

Unit O, Sec. 7, T25N, R5W

Separator Pit

Basin Dakota/Gallup

Non Vulnerable

> 1000 ft.

> 100 ft.

### RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe encountered shale bedrock at 17 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 17 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 <u>non-vulnerable area</u> and is approximately 0.40 miles north of the nearest vulnerable area boundary (Gonzales Canyon wash).

(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 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.



Gasoline Range (C5 -	C40)	632	0.2
Parameter		Concentration (mg/Kg)	Det. Limit (mg/Kg
Condition:	Cool and Intact	Analysis Requested:	8015 TPH
Sample Matrix: Preservative:	Cool	Date Analyzed:	07-24-98
Chain of Custody No:	6108 Soil	Date Extracted:	07-24-98
Laboratory Number:	D685	Date Sampled: Date Received:	07-22-98 07-24-98
Sample ID:	4 @ 12'	Date Reported:	07-24-98
Client:	Blagg / AMOCO	Project #:	04034-10

ND - Parameter not detected at the stated detection limit.

References:

Diesel Range (C10 - C28)

**Total Petroleum Hydrocarbons** 

Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,

1,170

1,800

SW-846, USEPA, December 1996.

Comments:

Jicarilla Contract #147 - 9E Separator Pit.

Analyst

Réview M. Sandle

0.1

0.2



# EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	4 @ 12'	Date Reported:	07-24-98
Laboratory Number:	D685	Date Sampled:	07-22-98
Chain of Custody:	6108	Date Received:	07-24-98
Sample Matrix:	Soil	Date Analyzed:	07-24-98
Preservative:	Cool	Date Extracted:	07-24-98
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	2,740	8.8
Toluene	68,380	8.4
Ethylbenzene	3,250	7.6
p,m-Xylene	68,970	10.8
o-Xylene	35,690	5.2
Total BTEX	179,030	

ND - Parameter not detected at the stated detection limit.

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

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-84

USEPA, December 1996.

Comments:

Jicarilla Contract #147 - 9E Separator Pit.

Alexa L. Gierra

Hay W. Son de

# CHAIN OF CUSTODY RECORD

7 6	Heceived intact Cool - Ice/Blue Ice	lexico 87401	Farmington, New Mexico 87401	71		
-			5796 I S Highway 64	1		
<						
ceipt	Sample Receipt	700		П		
		Received by: (Signature)	Recei		e)	Relinquished by: (Signature)
		Received by: (Signature)	Récei	7	Ť	Relinquished by: (Signature)
7.24.98 0755	7.2	Received by: (Signature)	Time	Date 7/24	27	Relinquished by; (Signature)
2	PRESER - COOL					
SAMPLES	Sort Si					
			<i>f</i> :	,		
1 1					724700000	
e pr	SEPARATOR	\ \	SOL	78.85	7/22/08/2920	(i) 8 /2'
PI	Consessed	\ \ \ \	50/2	D684	1/2498 0930	Oe15'
			Sample Matrix	Lab Number	Sample Sample Date Time	Sample No./ Identification
		lo. of stainers  H  S  EX  21)		04034-10		NTV NTV
erks .	. Remarks			Client No.	(	
	METERS	ANALYSIS / PARAMETERS	9€T #/¥7 ~9€	Project Location  JICALIUM CONTURET #147-9E	<u>}</u>	Client / Project Name

# 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**

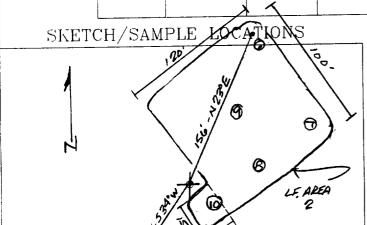
Operator: AMOCO PRODUCTION	COMPANY	Telephone: (505) 326-9200			
Address: 200 Amoco Court,	Farmington,	NM 87401			
Facility or Well Name: JICARILLA	CONTRACT 14	7 9E			
Location: Unit or Qtr/Qtr Sec_0	Sec_7 T_2	25N RSW County PIO APRIBA			
Land Type: PANGE					
Date Remediation Started: 7.22	98	Date Completed: 4/1/99			
Remediation Method: Landfarmed		Approx. cubic yards /, 850			
Composted					
Other					
epth To Groundwater:	(pts.) <u>o</u>	Final Closure Sampling:			
Distance to an Ephemeral Stream	(pts.) <b>8</b>	Sampling Date: 3.3099 Time: 1200			
Distance to Nearest Lake, Playa, or Watering Pond Wellhead Protection Area: Distance To SurfaceWater:	(pts.)	Sample Results: (LF-Z)  Field Headspace (ppin) 82.Z (LF-Z)  TPH (ppin) 1,ZOO Method 8015  Other MULTIPLE SAMPLES - SEE ATTACHED  FORM			
RANKING SCORE (TOTAL POINTS):O					
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MILE KNOWLEGE AND BELIEF					
DATE  4/1/99  PRINTED NAME Buddy D. Shaw  SIGNATURE Buddy D. Shaw  AND TITLE Environmental Coordinator					
AFIER 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	C;			

CLIENT: AMOCO

# BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413

LOCATION NO: 83590

	P.O.	BOX 87, B 505)	LOOMF ) 632-	TELD, 1 -1199	NM O	415	C.🗆.C.	NO: <u>4583</u>
FIELD REPOR	RT: LAN	DFARM/CC	)MPOS	Γ PILE	CLOS	URE	VERIFIC	CATION
OCATION: NAME: SICE						<del>7017.</del>		3.3099
QUAD/UNIT: D SE					<u>EA</u> 51.	E	NVIRONMENTAL PECIALIST:	REP
SOIL REMEDIATION:  REMEDIATION  LAND USE:	SYSTEM: _	LANDFARM		APPR			RDAGE: _ <u>z~z.5</u>	1850
FIELD NOTES & R	EMARKS:			00'	NEAREST	SURFACE	WATER: 21	ooo'
NMOCD RANKING SCORE:  DE YELLOWISH BED  NO APPARENT STAI  POINT (1). SAMPE  COMPOSITE SAMPE  CLOSED	WN SAND, NO WING OBSER	N COHESIVE, SI VED. SLIGHT H RANGE FROM B ANALYSIS	164724 M C ODOR I M 6"-18	WIST, FIR DETECTED B. TOOK	25P1	ZINKI T		
SAMP TI	ME SAMPLE IT	FIELD . LAB No: WE	418.1 CAL IGHT (a) r	_CULATION nL. FREON	S DILUTION	READING	CALC. ppm	
SAMF. II	IVIL SAWIT EL 1.U							_
								_
								-



O A IN TUDO CHIO	OVM RI	ESULTS	;
------------------	--------	--------	---

ΙΛR	SAMPLES
LAD	OAME DEV

SAMPLE ID	FIELD HEADSPACE PID (ppm)	SAMPLE ID	ANALYSIS	TIME	RESULTS
4.1	592	LF. 1	(BC15)	1145	924
LF.2	82.2	LF-2	(8015)	1200	1,200



TRAVEL NOTES:

CALLOUT: N/A

**3** 

90'

3

LF. AREA

ONSITE:

3.30.99



Client: Sample ID: Laboratory Number: Chain of Custody No: Sample Matrix: Preservative: Condition:	Blagg / AMOCO LF - 1 E920 6583 Soil Cool Cool and Intact	Project #: Date Reported: Date Sampled: Date Received: Date Extracted: Date Analyzed: Analysis Requested:	403410 04-01-99 03-30-99 03-31-99 03-31-99 04-01-99 8015 TPH
--	--	---	--

Parameter		Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	6.9	0.2
Diesel Range (C10 - C28)	917	0.1
Total Petroleum Hydrocarbons	924	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 147 - 9 E Landfarm. 5 Pt. Composite.

Analyst P. Oferen

Stacy W Sendler



Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	LF - 2	Date Reported:	04-01-99
Laboratory Number:	E921	Date Sampled:	03-30-99
Chain of Custody No:	6583	Date Received:	03-31-99
Sample Matrix:	Soil	Date Extracted:	03-31-99
Preservative:	Cool	Date Analyzed:	04-01-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	23.5	0.2
Diesel Range (C10 - C28)	1,180	0.1
Total Petroleum Hydrocarbons	1,200	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 147 - 9 E Landfarm. 5 Pt. Composite.

Analyst

Stacy W Sendler

# CHAIN OF CUSTODY RECORD

	<u>8</u> 7	Cool - Ice/Blue Ice	)615	(505) 632-0615				-
	7	Received Intact	way 64 Lexico 87401	5796 U.S. Highway 64				
z	~							
	Sample Receipt	Samp	HINC	FOVIROTECH IO				
			ved by: (Signature)				ture	Relinquished by: (Signature)
37.79 ONT	331.99		Received by: (Signature)	35/199 0756 A	<del>.</del>	!	iture)	Relinquished by: (Signature
Date Time 3/3//99 07/5	Date / 3/3//9 5		Received by (Signature)	Date Time Received	M)	78	ature)	Relinquished by: (Signature)
		cool						
SAMPLES PRESERVE	22 23	SAMPL						
SUE	OFFR	SPT COMPOSITE		5016	592/	1200	3.3099	LF-2
TE	अभिव	SPT. COMPSITE	7	5016	r. 920	<b>145</b>	3.20.94	1-27
			1	Sample Matrix	Lab Number	Sample Time	Sample Date	Sample No./
			o. of tained	01-	01-78070			-
	Remarks				Client No.			Sampler:
				SKARILLA CONTRACT 147.9E	SKARILLA CON		co	BLAKEN/AMOCO
		METERS	ANALYSIS / PARAMETERS	and facili	Project Location LANDFARM			Client / Project Name