# JICARILLA APACHE TRIBE Blow - R. S. K. ENVIRONMENTAL PROTECTION OFFICE - VISK-P.O. BOX 507

P.O. BOX 507 DULCE, NEW MEXICO 87528

DEGETVED

AND OIL & GAS ADMINISTRATION

# PIT REMEDIATION AND CLOSURE REPORT

AUG 1 6 1999

Operator: AMOCO PRODUCTION COMPANY	Telephone: (1015)	<b>26</b> -9200 .
Address: 200 Amoco Court, Farmington,	NM 87401	
Facility or Well Name: JICARIUA CONTRACT	T 146 - 39	
Location: Unit or Qtr/Qtr Sec Sec3 T	_	·
Pit Type: Separator Dehydrator Other	BLOW	
Land Type: LANGE		
(Attach diagram)  Reference: wellhead X  Footage from reference: Z	3.5 Degrees East North	×
	✓ West South _	
Depth To Groundwater: (Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet (20 point 50 feet to 99 feet (10 point Greater than 100 feet (0 point (10 poin	s) _
Distance to an Ephemeral Stream (Downgradient dry wash greater than ten feet in width)	Less than 100 feet (10 poin Greater than 100 feet (0 poin	ts) ts) <u> </u>
Distance to Nearest Lake, Playa, or Watering Pond (Downgradient lakes, playas and livestock or wildlife watering ponds)	Less than 100 feet (10 point) Greater than 100 feet (0 point)	
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 poin No (0 poin	
Distance To SurfaceWater: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 100 feet (20 point 100 feet to 1000 feet (10 point Greater than 1000 feet (0 point (10	ts)
	RANKING SCORE (TOTAL POINTS)	<u>.</u> ک

			854841	BUS PIT
Date Remediation Sta	arted:		Date Completed:	1/9/97
Remediation Method:	Excavation	A	oprox. cubic yards	2700
eck all appropriate	Landfarmed ×	In	situ Bioremediation	
	Other .			
Remediation Location (i.e. landfarmed onsite, name and location of offsite facility) General Description	: Onsite <u>×</u>	Offsite		on.
Groundwater Encoun	-	✓_ Yes	Depth	_
Final Pit: Closure Sampling: (if multiple samples,	Sample locationse		uments	
attach sample results and diagram of sample	Sample depth	18'		
	Sample date//	19/97	Sample time	1100
	Sample Results			
	Soil: Benzene	(ppm)	Water: Benzer	ne (ppb)
				ne (ppb)
	Total BTEX		<del>_</del>	
		space (ppm) $\mathbb{Z}.\mathbb{Z}$		<b></b>
	ТРН	(ppm) <u>37</u>	Total 2	Kylenes (ppb)
Groundwater Sample	: Yes	No X (If yes	, attach sample result	ds)
I HEREBY CERTIFY KNOWLEGE AND B	THAT THE INFORM	1ATION ABOVE IS 1	TRUE AND COMPLE	TE TO THE BEST OF MY
DATE	1/9/97	_ PRINTED NAME _		
SIGNATURE Sud	dy D. Shar	AND TITLE _	Environmenta1	Coordinator
AFTER REVIEW OF TO THE JICARILLA	THE PIT CLOSURE APACHE TRIBE PIT	INFORMATION, PIT CLOSURE ORDINA	CLOSURE IS APPR NCE.	OVED IN ACCORDANCE
APPROVED: YES _	X NO (REA	ASON)		
  signed: kauc	Maull	DATE:	23-97	

CLIENT: AMOCO			ENGINEE BLOOMF		NC. M 8741	3		87484
			5) 632-				I.D.C. NE	J:
FIELD REPOR'	T: C	LOSU	RE VE	CRIFIC	CATION			/ of/
LOCATION: NAME: TEARILE						I DATE O	TARTED: _	1/9/97
QUAD/UNIT: J SEC 3					M ST:NW	<u> </u>	NMENTAL LIST:	
EXCAVATION APPROX. 60					EP. CUB			
DISPOSAL FACILITY:	07 -	SITE	RI	EMEDIATIO	ON METH	IOD:	LANDT	Demons
LAND USE: RANGE		LEASI	E: JICA.C	DNTR. #	/46 F	ORMATI	DN: CK	(m)
FIELD NOTES & REMARI	kS: PIT	LOCATED	APPPUXIM	ATELY _3	240_ FT.	N35W	_ FROM	WELLHEAD.
DEPTH TO GROUNDWATER: 2100	o' NEAREST	T WATER SI	OURCE:	000' N	EAREST SURF	ACE WATE	R	300/
NMBCD PANEING SCORE						✓PIT A		
OIL AND EXCAVATION	N DESCRI		× = = = =		ł .	STEEL		STALLED NE INSTALLED
			EDROCK, 5HA	infe	L			
			,					
BOTTOM. VERY D	usku furf	PL, BEOR.	ek, shale	VERY HA	20 .			
BEDROCK	usky furf	PLE , BEOR•						
			FIFL	D 418.1 CA	LCULATIONS	DILUTION	READING	CALC. ppm
	TIME S	AMPLE I.D.	FIFL	D 418.1 CA WEIGHT (g)	LCULATIONS	DILUTION 1:1	READING	CALC. ppm
SCALE	TIME S	AMPLE I.D.	FIEL LAB No:	D 418.1 CA WEIGHT (g)	LCULATIONS			1
SCALE  O FT	TIME 5	AMPLE I.D.	FIEL LAB No: 794-1569 OVM	<u>D 418.1 CA</u> WEIGHT (g)	LCULATIONS mL. FREON	1:1	8	32
SCALE	TIME 5	AMPLE I.D. De181	FIEL  LAB No:  704-7569  OVM  RESULTS	D 418.1 CA WEIGHT (g)	LCULATIONS	1:1		37
SCALE  O FT  PIT PERIME	TIME 5	AMPLE I.D.  De/8/  N  SAMF ID  1 e/	OVM RESULTS	D 418.1 CA' WEIGHT (g)  5 Anspage (ppm)	LCULATIONS mL. FREON	r PR	_8 DFILE	32
SCALE  O FT  PIT PERIME	TIME 5	AMPLE I.D.  De/8/  SAME ID  1 e/ 2 e/	OVM RESULTS  LE FIELD HE	D 418.1 CA' WEIGHT (g)  5  Anspace (gen)	LCULATIONS   ml. freon   20	r PR	8	372
SCALE  O FT  PIT PERIME	TIME 5	AMPLE I.D.  De 181  SAME 10  1 e 1	OVM RESULTS LE FIELD HE	D 418.1 CAI WEIGHT (g)  5  AMSPAGE (hpm)  6	PI	r PR	_8 DFILE	372
SCALE  O FT  PIT PERIME	TIME 5	AMPLE 1.D.  De181  SAMF 10  3 e 1 4 e 1	OVM RESULTS  LE FIELD: HE  10' 8.  12' 0.0  18' 2.  10' 14.	D 418.1 CAI WEIGHT (g)  5 ADSPAGE (ppm) 6	LCULATIONS   ml. freon   20	r PR	_8 DFILE	372 A'
SCALE  O FT  PIT PERIME	TIME S	AMPLE 1.D.  De181  SAMF 10  1 e1  3 e1  4 e1  5 e 5	OVM RESULTS  (a) 8.0  (a) 7.4  (b) 7.4  (c) 8.0  (c) 8.0  (d) 7.4	D 418.1 CAI WEIGHT (g)  5 ADSPAGE (ppm) 6	PI	r PR	_8 DFILE	372
SCALE  O FT  PIT PERIME  60'  A	TIME S 1100 G	AMPLE 1.D.  De 181  SAMF 10  1 e 1  3 e 1  4 e 1  5 e 3	OVM RESULTS  (a) 8.0  (a) 7.4  (b) 7.4  (c) 8.0  (c) 8.0  (d) 7.4	D 418.1 CAI WEIGHT (g)  5 ADSPAGE (ppm) 6	PI	PR	9 OFILE	372 A'
SCALE  O FT  PIT PERIME  GO'  A  WENDEH,  GO	TIME S 1100 G	AMPLE 1.D.  De 181  SAMP 10  1 e 1  3 e 1  4 e 1  5 e 5	OVM RESULTS  (a) 8.  (a) 794-1569  OVM RESULTS  (b) 8.  (c) 8.  (c) 9.  (d) 7.  (e) 7.  (e) 7.  (f) 7.  (f) 7.  (g) 8.  (g) 7.  (g) 7.	D 418.1 CAI WEIGHT (g)  5 ANSPAGE ((ppn)) C 2 3 C	PI	PR	_8 DFILE	372 A'
SCALE  O FT  PIT PERIME  GO'  A  O  A  O  FA  WEARE  NOO  PISTARKE  S  S  S  S  S  S  S  S  S  S  S  S  S	TIME S 1100 G	AMPLE 1.D.  De 181  SAMFIE  1 4 6 1  5 6 5  SAMFLE  SAMFLE  D.	OVM RESULTS LE FIELD HE PIDE TO A	D 418.1 CAI WEIGHT (g)  5  AITSPAGE ((pun))  2  3  4	PI	PR	9 OFILE	372 A'
SCALE  O FT  PIT PERIME  GO'  A  WENDEH,  GO	TIME S 1100 G	AMPLE I.D.  De 181  SAMP ID  1 e 1  2 e 1  5 e 5  IA e 1  SAMPLE  D  SAMPLE  SAMPLE  SAMPLE  SAMPLE  LD  SAMPLE  SAMPLE  SAMPLE  D  SAMPLE  SAMPLE  SAMPLE  SAMPLE  D  SAMPLE  SAMPLE  SAMPLE  D  SAMPLE  SAMP	OVM RESULTS  (a) 8.  (a) 794-1569  OVM RESULTS  (b) 8.  (c) 8.  (c) 9.  (d) 7.  (e) 7.  (e) 7.  (f) 7.  (f) 7.  (g) 8.  (g) 7.  (g) 7.	D 418.1 CAI WEIGHT (g)  5  AITSPAGE ((pun))  2  3  4	PI	PR	9 OFILE	372 A'
SCALE  O FT  PIT PERIME  GO'  A  O  A  O  FA  WEARE  NOO  PISTARKE  S  S  S  S  S  S  S  S  S  S  S  S  S	TIME S 1100 G	AMPLE 1.D.  De 181  SAMFIE  1 4 6 1  5 6 5  SAMFLE  SAMFLE  D.	OVM RESULTS  IE  FIELD HE PIN  IE  ANALYSIS	D 418.1 CA' WEIGHT (g)  5  ADSPAGE (1990)  2  3  C	PI	PR PR	S)FILE	372 A'

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 @ 18'

Date Analyzed:

01-09-97

%

\*Diff.

4.88

Project Location:

Jicarilla Contract 146 - 39

Date Reported:

01-09-97

Laboratory Number:

TPH-1869

Sample Matrix:

Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	32	20

ND = Not Detectable at stated detection limits.

QA/QC:

QA/QC Sample	Duplicate	
TPH mg/kg	TPH mg/kg	
		_
80	84	

<sup>\*</sup>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 - BJ484

Réview

Melson Vel Analyst

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

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

Field TPH-Worksheet

Client: AMOCO Project #:

Sample ID: 4 @ 18' Date Analyzed: 01-09-97 Project Location: Jicarilla Contract 146 - 39 Date Reported: 01-09-97

Laboratory Number: TPH-1869 Sample Matrix: Soil

Sample Weight: 5.00 grams Volume Freon: 20.00 mL

Dilution Factor: 1 (unitless) TPH Reading: 8 mg/kg

TPH Result: 32.0 mg/kg
Reported TPH Result: 32 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
 TPH mg/kg
 Diff.

 ---- 80
 84
 4.88

Comments: Blow Pit - BJ484

# 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	<b>Telephone</b> : (505)326-9200
Address: 200 Amoco Court, Farmington,	NM 87401
Facility or Well Name: JICARILLA CONT	RRET 146 - 39
Location: Unit or Qtr/Qtr Sec Sec3 T	_
Pit Type: Separator Dehydrator Other	COMPRESSOR
Land Type: トラングモ	
(Attach diagram)	10', width 8', depth 5'
	Begrees East North  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 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, 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):

BJ484 COMPR. PIT

Date Remediation St	arted:	Date Completed:	1/9/97
Remediation Method:	Excavation	Approx. cubic yards	5
eck all appropriate	Landfarmed ×	Insitu Bioremediation	
·	,——		
Remediation Location			
(i.e. landfarmed onsite, name and location of offsite facility)			
General Description	of Remedial Action: Excavati	ion. BEDROCK BOTTOM.	5 PARYED
PIT	SOTTOM W/ FERTILIZER		
Groundwater Encoun	ntered: No X Yes _	Depth	
Final Pit: Closure Sampling: (if multiple samples,	Sample location see Attache	ed Documents	
attach sample results and diagram of sample	Sample depth3'		
locations and depths)	Sample date $\frac{\sqrt{9/97}}{}$	Sample time / Z	50
	Sample Results		i
	•	Water: Benzene	(ppb)
	Total BTEX (ppm)	Toluene	(ppb)
	Field Headspace (ppm)		
		Z4 Total Xylene	•••
Groundwater Sample	e: Yes NoX	(If yes, attach sample results)	
I HEREBY CERTIFY KNOWLEGE AND B		OVE IS TRUE AND COMPLETE T	O THE BEST OF MY
DATE	1/9/97 PRINTED	NAME Buddy D. Shaw	
SIGNATURE BLA	dy D. Shaw AND TI	TLE Environmental Coo	rdinator
AFTER REVIEW OF TO THE JICARILLA	THE PIT CLOSURE INFORMATI A APACHE TRIBE PIT CLOSURE	ION, PIT CLOSURE IS APPROVE ORDINANCE.	D IN ACCORDANCE
APPROVED: YES _	✓ NO (REASON)		
SIGNED:	DATE	c: <u>1 - 23 - 97</u>	

BLAGG ENGINEERING, INC.   LOCATION NO. <b>\$\frac{1}{5}\</b>
FIELD REPORT: CLOSURE VERIFICATION PAGE No: _/ of _/
LOCATION: NAME: JEARIUA COSTRACT WELL #:146-39 PIT: COMPR.  QUAD/UNIT: J SEC: 3 TWP: ZSN RNG: 5W PM: NM CNTYRA ST: NM  DIF: /FODTAGE: NW/Y 5E/4 CONTRACTOR: P + 5  DATE STARTED: 1/9/97  DATE FINISHED:
EXCAVATION APPROX. 10 FT. x 8 FT. x 5 FT. DEEP. CUBIC YARDAGE: 5  DISPOSAL FACILITY: 01-5 TE REMEDIATION METHOD: LANDFARMED  LAND USE: RANGE LEASE: TICA. CONTR. #146 FORMATION: CKIMU
FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 125 FT. 58  FROM WELLHEAD DEPTH TO GROUNDWATER. 2001 NEAREST WATER SOURCE: 21001 NEAREST SURFACE WATER: 310001 NEAREST SURFACE WATER: 310001 NEAREST SURFACE WATER: 310001 NEOCHECK ONE: 100001 NEOCHECK ONE: 1000001 NEOCHECK ONE: 100001 NEOCHECK ONE: 100001 NEOCHECK ONE: 1000001 NEOCHECK ONE: 1000001 NEOCHECK ONE: 1000001 NEOCHECK ONE: 10
SIDEWALLS - DK. YEW. ORANGE SAND, NOW-CONESIUE SLIGHTLY MOIST FIRM, NO APPARENT HE STAWING AND/OR OBSERVED IN ANY OF THE SIDEWALLS, WILL SPRAY PIT ROIFOR WI FERTILIZER.  BOTTOM - LT. GRAY BEDROCK STANDSTONE, HARD, HE GOOR IN OWN SAMPLE  BEDROCK RISK ASSESSED  FIELD 418.1 CALCULATIONS
TIME SAMPLE I.D. LAB No: WEIGHT (g) INL FREON DILUTION READING CALC. ppm  SCALE  1250 QB 3' TPH-1870 5 20 1:1 6 24  O FT  PIT PERIMETER N  RESULTS  SUPER FELL PERISTRAE  10 3' 0.0  3 2 3' 0.0  4 2 3' 0.0  3 2 3' 0.0  4 2 3' 0.0  5 2 5' 1/7.7  LAB SAMPLES  SAMPLE ANALYSIS TIME  LAB SAMPLES  SAMPLE ANALYSIS TIME
TRAVEL NOTES: CALLOUT: 1/8/97 MORN. GNSITE: 1/9/97 AFTER.

Well Name:
Well Site location:
Pit Type:
Producing Formation:
Pit Category:
Horizonal Distance to Surface Water:

Vicinity Groundwater Depth:

Jicarilla Contract 146 #39
Unit J. Sec. 3, T25N, R5W
Compressor Pit
Chacra/Mesa Verde
Non Vulnerable
> 1000 ft.
> 100 ft.

### RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 5 feet below grade.

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

- Past production fluids were contained locally by a relatively shallow sandstone bedrock located 5 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 <u>non-vulnerable area</u> and is approximately 1.32 miles northeast of the nearest vulnerable area boundary (Gonzales Canyon wash).

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

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.

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:

1 @ 3'

Date Analyzed:

01 - 09 - 97

Project Location:

Jicarilla Contract 146 - 39

Date Reported:

01-09-97

Laboratory Number:

TPH-1870

Sample Matrix:

Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable	0.4	20
Petroleum Hydrocarbons	24	20

ND = Not Detectable at stated detection limits.

QA/QC:

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

<sup>\*</sup>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:

Compressor Pit - BJ484

Fleton Vilgarian

Review

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: 1 @ 3' Date Analyzed: 01-09-97
Project Location: Jicarilla Contract 146 - 39 Date Reported: 01-09-97

Laboratory Number: TPH-1870 Sample Matrix: Soil

Sample Weight: 5.00 grams Volume Freon: 20.00 mL

Dilution Factor: 1 (unitless) TPH Reading: 6 mg/kg

TPH Result: 24.0 mg/kg
Reported TPH Result: 24 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: Compressor Pit - BJ484

BJ484

# 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	<b>Telephone:</b> (505)326-920	00
Address: 200 Amoco Court, Farmington,	NM 87401	
Facility or Well Name: JICARIUA CONTRA	CT 146-39	
Location: Unit or Qtr/Qtr Sec Sec T	SN R5W County RID ARRIBA	<del></del>
Pit Type: Separator Dehydrator Other		
Land Type: Range		
(Attach diagram)	72', width 34', depth 4'	
Footage from reference: 31°	•	
	Degrees ∠ East North ×	
	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)	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)	
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)	<u> </u>
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)	<u> </u>
	RANKING SCORE (TOTAL POINTS):	0

BJ484 SEP. PIT

Date Remediation Started:		Date Completed:	1/9/97				
Remediation Method: Excavatio	n <u>×</u>	Approx. cubic yards	90				
eck all appropriate Landfarm		Insitu Bioremediation	1				
Other							
Remediation Location: On (i.e. landfarmed onsite, name and location of offsite facility)	site X Offsite						
General Description of Remedia	Action: Excavation	ENTIRE EXCOUNTION	CONSIST OF				
BEDROCK. NO TA	1 ANALYSIS CONDUCT	ED. SPARTED ENTRE E	KRUATION W/				
Groundwater Encountered:	No <u> </u>	Depth	PER/10 LUC S				
Closure Sampling:	cation see Attached D	ocuments					
attach sample results and diagram of sample Sample dep	th3 /						
locations and depths) Sample depths	1/9/97	Sample time /2	10				
Sample Re							
1	Benzene (ppm)	Water: Benzene	(ppb)				
		Toluene	(ppb)				
	Field Headspace (ppm) 34	<del></del>					
	TPH (ppm)	Total Xyler					
Groundwater Sample: Yes No (If yes, attach sample results)							
I HEREBY CERTIFY THAT THE KNOWLEGE AND BELIEF	IE INFORMATION ABOVE	IS TRUE AND COMPLETE	TO THE BEST OF MY				
DATE	7 PRINTED NAM	IE Buddy D. Shaw					
SIGNATURE BUlly D.	Show AND TITLE	Environmental Co	ordinator				
AFTER REVIEW OF THE PIT TO THE JICARILLA APACHE	CLOSURE INFORMATION, TRIBE PIT CLOSURE ORD	PIT CLOSURE IS APPROV DINANCE.	ED IN ACCORDANCE				
APPROVED: YES X NO	(REASON)						
SIGNED: Low C. Ma		1-23-97					

BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413	LOCATION NO: \$7484
(505) 632-1199	C.O.C. NO:
FIELD REPORT: CLOSURE VERIFICATION	PAGE No: / of /
LOCATION: NAME: JICARILLA COSTRET WELL #:146-39 PIT: SEP	DATE STARTED: //9/97 DATE FINISHED:
QUAD/UNIT: J SEC: 3 TWP: 251 RNG: 5W PM: NM CNTY: RA ST: NM OTP/FOOTAGE: NW/4 SE/4 CONTRACTOR: P+5	ENVIRONMENTAL NV
EXCAVATION APPROX. 22 FT. x 34 FT. x 4 FT. DEEP. CUBIC	YARDAGE: 90
DISPOSAL FACILITY: ON-517E REMEDIATION METHO	D: <u>LANDFARMED</u>
LAND USE: RANGE LEASE: JOG. CONTR. #146 FOI	RMATION: CKINU
FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 318 FT. 1	J40E FROM WELLHEAD
DEPTH TO GROUNDWATER: 7100' NEAREST WATER SOURCE: 71000' NEAREST SURFACE	CHECK BIVE
1	_ PIT_ABANDONED _ STEEL_TANK_INSTALLED
CHE PIVI CACITY I TIES TO THE PIVI	FIBERGLASS TANK INSTALLED
ALL MED. GRAY TO BLOCK REDROCK (SANDSTONE) NO CONDUCTED. WILL SPRAY ENTIRE PIT W/ FERTILI	ZER.
	i
(Rox ASSESSED)	
AU BEOREX (REST ASSESSED)  FIELD 418.1 CALCULATIONS  TIME SAMPLE LD. LAB No: WEIGHT (g) ml. FREON D	ILUTION READING CALC ppm
TIME SAMPLE I.D. LAB No: WEIGHT (g) ML. FREON D	ILUTION READING CALC ppm
TIME SAMPLE I.D. LAB No: WEIGHT (g) ML. FREON D	ILUTION READING CALC ppm
SCALE  O FT	
SCALE  O FT  PIT PERIME'TER NO OVM RESULTS  SWING SEUR SEUR SEUR HEADSPACE	PROFILE
SCALE  O FT  PIT PERIME'TER N  SAMPLE I.D. LAB NO: WEIGHT (g) ML. FREON D  OVM RESULTS  SAMPLE FELL HEADSPACE PD (pen)  12 3/ 1.37.8	PROFILE
TIME SAMPLE I.D. LAB NO: WEIGHT (g) ML. FREON D  SCALE  O FT  PIT PERIMETER N  RESULTS  SAMPLE FELL HEADSPACE PD (ppn)  1 = 3'   137.8   A   3 = 3'   348	PROFILE
TIME SAMPLE I.D. LAB No: WEIGHT (g) ML. FREON D  SCALE  1210  OFT  PIT PERIMETER N  SAMPLE PLU HEADSPACE P.D (spen)  1 = 3' 1.37.8 2 = 2' 64.3 3 = 3' 348 4 = 2' 121.8 5 = 5' 45.3 4' D  TANK  TIME SAMPLE I.D. LAB No: WEIGHT (g) ML. FREON D  PIT PERIMETER N  PIT PERIMETER N  SAMPLE PLU HEADSPACE P.D (spen)  1 = 3' 1.37.8 2 = 2' 64.3 3 = 3' 348 4 = 2' 121.8 5 = 5' 45.3	PROFILE
TIME SAMPLE I.D. LAB No: WEIGHT (g) ML FREON D  SCALE  O FT  PIT PERIMETER N  RESULTS  SAMPLE PERIMER PERIMER PROPERTIES  1 3 1.37.8  2 2 6 64.3  3 2 3 348  4 2 2 121 8  5 2 5 45.3	PROFILE  34' A'  21
TIME SAMPLE I.D. LAB No: WEIGHT (g) ML. FREON D  SCALE  1210  OFT  PIT PERIMETER N  SAMPLE PLU HEADSPACE P.D (spen)  1 = 3' 1.37.8 2 = 2' 64.3 3 = 3' 348 4 = 2' 121.8 5 = 5' 45.3 4' D  TANK  TIME SAMPLE I.D. LAB No: WEIGHT (g) ML. FREON D  PIT PERIMETER N  PIT PERIMETER N  SAMPLE PLU HEADSPACE P.D (spen)  1 = 3' 1.37.8 2 = 2' 64.3 3 = 3' 348 4 = 2' 121.8 5 = 5' 45.3	PROFILE
TIME SAMPLE I.D. LAB NO: WEIGHT (g) mL. FREON D  SCALE  O FT  PIT PERIMETER N  RESULTS  SAMPLE I.D. LAB NO: WEIGHT (g) mL. FREON D  RESULTS  PIT  PIT  PIT  PIT  PIT  PIT  PIT  P	PROFILE  34' A'  21
TIME SAMPLE I.D. LAB NO: WEIGHT (g) ML FREON D  SCALE  O FT  PIT PERIMETER N  RESULTS  SAMPLE FELL PROSPACE PO (son)  1 = 3' /37.8  2 = 2' 64.3  3 = 3' 348  4 = 2' /21.8  5 = 5' 45.3  A  LAB SAMPLES SAMPLE ANALYSIS TIME	PROFILE  34' A'  21
TIME SAMPLE I.D. LAB NO: WEIGHT (g) ML FREON D  SCALE  O FT  PIT PERIMETER N  RESULTS  SAMPLE FELD HEADSPALE PO (GON)  1 = 3' 1.37.8  2 = 2' 64.8  3 = 3' 34.8  4 = 2' 1.21.8  5 = 5' 45.3  H  TANK  D  SAMPLE SAMPLES  SAMPLE SAMPLES  SAMPLE AMALYSIS TIME  LAB SAMPLES  SAMPLE AMALYSIS TIME	PROFILE  34' A'  21
TIME SAMPLE I.D. LAB NO: WEIGHT (g) ML FREON D  SCALE  O FT  PIT PERIMETER N  RESULTS  SAMPLE FELL HEADSPALE FOR (son)  1 = 3' /37.8  2 = 2' / 64.8  3 + 4 = 2' /21.8  5 = 5' 45.3  LAB SAMPLES  SAMPLE ANALYSIS TIME	PROFILE  34' A'  21

Well Name:
Well Site location:
Pit Type:
Producing Formation:
Pit Category:
Horizonal Distance to Surface Water:

Vicinity Groundwater Depth:

Jicarilla Contract 146 #39
Unit J, Sec. 3, T25N, R5W
Separator Pit
Chacra/Mesa Verde
Non Vulnerable
> 1000 ft.
> 100 ft.

### RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 4 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 4 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 <u>non-vulnerable area</u> and is approximately 1.32 miles northeast of the nearest vulnerable area boundary (Gonzales Canyon wash).

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

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.

85484

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

SUBMIT 1 COPY TO

NATURAL RESOURCE DEPI

AND OIL & GAS ADMINISTRATION

## **ON-SITE SOIL REMEDIATION REPORT**

riani di manda di man								
Operator: AMOCO PRODUCTION	COMPANY	Telephone: (505) 326-9200						
Address: 200 Amoco Court,	Farmington,	NM 87401						
Facility or Well Name:	CARILA CONTR	net #146-39						
Location: Unit or Qtr/Qtr Sec 7 Sec 3 T 25N R 5W County RIO ARRIBA								
Land Type: RANGE								
	1/9/97	Date Completed: 7/23/98						
Remediation Method: Landfarmed		Approx. cubic yards 2,795						
Composted	<del></del>							
Other								
Vepth To Groundwater:	(pts.)	Final Closure Sampling:						
Distance to an Ephemeral Stream	(pts.)	Sampling Date: 7/21/98 Time:						
Distance to Nearest Lake, Playa, or Watering Pond Wellhead Protection Area:	(pts.) (pts.)	Sample Results:  Field Headspace (ppm) 67.4 (LF-2)  TPH (ppm) 747 Method 8>15						
Distance To SurfaceWater:	(pts.)	Other MULTIPLE JAMPLES - SEE						
RANKING SCORE (TOTAL POIN	TS): 0	AMACHED SHEET						
I HEREBY CERTIFY THAT THE INFO KNOWLEGE AND BELIEF	RMATION ABOVE	E IS TRUE AND COMPLETE TO THE BEST OF MY						
DATE  7/23/98  PRINTED NAME  Buddy D. Shaw  SIGNATURE  SIGNATURE  Buddy D. Shaw  AND TITLE Environmental Coordinator								
AFTER REVIEW OF THE SOIL REMEDIATION INFORMATION, ON-SITE REMEDIATION IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.  APPROVED: YES X NO (REASON) NOT for use as Rock for								
SIGNED: LEC Man	<u> </u>	: 9-9-98						

			т			
CLIENT: AMOCO	BLAGG ENGIN	NEERING, INC.		LOCATION	ND: Ç	BJ484
CLIENT:	PO BOX 87 BLOC	MFIELD, NM 874	413	C. <b>.</b>	. ND: .	6105
	<u> </u>	32-1199	1			
FIELD REPORT:	LANDFARM/COMP	OST PILE CLOS	URE	VERIF	'ICA'I	10N
LOCATION: NAME: TICA CO	DUTR. 146 WELL #: 39	PITS: SEP, BLOW, C	OMPIL.	DATE START	ED:	21148
QUAD/UNIT: J SEC: 3	3 TWP: 25λ RNG: 5ω	PM: NM CNTY: KA ST:	NM F	ENVIRONMEN SPECIALIST:		
QTR/FOOTAGE: NW14	SEY CONTRACTOR:	P42		SPECIALIST:	~	
SOIL REMEDIATION:			n.c. 17	ADDACE.	279	15
REMEDIATION SYS	STEM: LANDFALM?	APPROX. CUI	BIC Y	ARDAGE:		
LAND USE:	22~65	LIFT DEPTH	(ft):		_	
FIELD NOTES & REMA	RKS:	>/0 B/2   WELDEGT	CLIDE ACI	T MATER:	>/00	, o '
DEPTH TO GROUNDWATER: >	RKS:	FOOD THE NEAREST	19/97	_ which		
NMOCD RANKING SCORE:	D NMOCD TPH CLOSURE STD:  UAKYING FROM OK. YEL	PPM  REDUCTION TO MED.	GRAZ	1 50~D	70 C	LAY
SOIL TYPE	VARYING FROM DR. YELL  VE TO PLOSTIC SLIGHTLY  DOOR DETECTED IN MAJOR  SURFREES EVIDENT IN  2/2' DISCOURSED SOIL M  5 PT! COMPOSITE SIMM  FIELD 418.	MOIST TO VERY M	0157	FIRM TO	5L/GH TS. 5+	TLY
STIFF, HC	DOL DETECTED IN MAJOR	KOLATED PATCHES	SAMPL	INC DEP	THS KI	n & E
OF LANDFARM	. SWAFFICES EULDENT IN	NOTRY ENCOUNTERED	ر مراسم	E-1 & LF	=-2 /	PLENS
COLLECTED	5 PT! COMPOSITE SIMP	ples for lass paral	75/5 ,			
(Crozed)	FIELD 418. SAMPLE I.D. LAB NO: WEIGHT	1 CALCULATIONS (a) ml FREON DILUTION	READIN	IG CALC. P	pm	
SAMP. TIME S	AMPLE I.D. LAB NO. WEIGHT	(9)				
(5.1)	I D CATIONS		.1			
SKETCH/SAMP	LE LOCATIONS  (A) 70' (F-D)					
€ (F-Z)	(P) \( \sigma \)					
120	0 0	OVM RESULTS		LAB SA	AMPL]	ES
(B) (146-39 HEAD	477	SAMPLE FIELD HEADSPACE PID (ppm)	SAMPLE ID		TIME	RESULTS
	146-17	LF-1 41.0	LF-1	(8015) TPH,	0810	86.7
20 AD	WELL HEAD	15-2 J.4	LF - 2	(8015) TPH (8015)	0915	747
3	0	LF-4 0.0	LF-3 LF-4	(8015) TPH (8015)	1000	543
100	235 (D) (F-4)		<u> </u>			
(F-3)0 1						
0	WELL HEAD	SCALE				
ROAD		O FT				
		1 1				

ONSITE: 7/21/98

TRAVEL NOTES:

CALLOUT:



Client:	Biagg / AMOCO	Project #:	04034-10
Sample ID:	LF - 1	Date Reported:	07-23-98
Laboratory Number:	D671	Date Sampled:	07-21-98
Chain of Custody No:	6105	Date Received:	07-21-98
Sample Matrix:	Soil	Date Extracted:	07-22-98
Preservative:	Cool	Date Analyzed:	07-22-98
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)			
Gasoline Range (C5 - C10)	0.7	0.2			
Diesel Range (C10 - C28)	86.0	0.1			
Total Petroleum Hydrocarbons	86.7	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 #146 - 39 Landfarm. 5 Pt. Composite.

Analyst P. Cycesen

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865



Blagg / AMOCO	Project #:	04034-10
LF - 2	Date Reported:	07-23-98
D672	Date Sampled:	07-21-98
6105	Date Received:	07-21-98
Soil	Date Extracted:	07-22-98
Cool	Date Analyzed:	07-22-98
Cool and Intact	Analysis Requested:	8015 TPH
	LF - 2 D672 6105 Soil Cool	LF - 2 Date Reported: D672 Date Sampled: 6105 Date Received: Soil Date Extracted: Cool Date Analyzed:

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	10.7	0.2
Diesel Range (C10 - C28)	736	0.1
Total Petroleum Hydrocarbons	747	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 #146 - 39 Landfarm. 5 Pt. Composite.

Aller L. Geren

Review Jende



Diesel Range (C10 - C		1,020 1,030	0.1 0.2		
Gasoline Range (C5 -	C10)	8.4	0.2		
Parameter		Concentration (mg/Kg)	Det. Limit (mg/Kg)		
Condition:	Cool and Intact	Analysis Requested:	8015 TPH		
Sample Matrix: Preservative:	Soil Cool	Date Extracted: Date Analyzed:	07-22-98 07-22-98		
Chain of Custody No:	6105	Date Received:	07-21-98		
Laboratory Number:	D673	Date Sampled:	07-21-98		
Sample ID:	LF - 3	Date Reported:	07-23-98		
Client:	Blagg / AMOCO	Project #:	04034-10		

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 #146 - 39 Landfarm. 5 Pt. Composite.



0.2

Parameter		Concentration (mg/Kg)	Det. Limit (mg/Kg)
Condition:	Cool and Intact	Analysis Requested:	
Preservative:	Cool	Date Analyzed:	07-22-98 8015 TPH
Sample Matrix:	Soil	Date Extracted:	07-22-98
Chain of Custody No:	6105	Date Received:	07-21-98
Laboratory Number:	D674	Date Sampled:	07-21-98
Sample ID:	LF - 4	Date Reported:	07-23-98
Client:	Blagg / AMOCO	Project #:	04034-10

Diesel Range (C10 - C28) 543 0.1
Total Petroleum Hydrocarbons 543 0.2

ND - Parameter not detected at the stated detection limit.

Gasoline Range (C5 - C10)

References:

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

ND

SW-846, USEPA, December 1996.

Comments:

Jicarilla Contract #146 - 39 Landfarm. 5 Pt. Composite.

Analyst L. Coleman

Review (1). Sende

# CHAIN OF CUSTODY RECORD

		()	2010/3 6105	Relinquished by: (Signature)	Relinquished by: (Signature)	Relinquished by: (Signature)				CF-4 7/2/98 1000	LF-3 7/21/98	2480 84/2/L	2F-1 7/21/98 0810	Sample No./ Sample Identification Date	محكر	Sampler:	SIAGG/ Amoco	Client / Project Name	
			-6107							1000	0915	2480	0810	Sample Time			-1-		
										24.74	DL73	D672	المحاط	Lab Number	0403410		TICARILLA CO	Project Location	
Fairington, 146	5796 U.S. I		EOVIDOTECH IC	73	77	Date Time R				2017	2012	2012	2012	Sample Matrix	10	•	Comeact # 146-39	LANDFARM	
(505) 632-0615	5796 U.S. Highway 64		ECH IOC	Received by: (Signature)	Received by: (Signature)	Received by: (Signature)				- <	- <	1 1	- 4		o. of taine		33		
						aure												ANALYSIS / PARAMETERS	
Cool - Ice/Blue Ice	Received Intact		Sample Receipt			7. 1. 97	7	RESERV - COOL	ALL SAM	5 87 Con	5 97. Cor	SP. Cor	5 pt. Co.			Remarks		AMETERS	
_	7	۲ 2	ceipt			1.97 1453	_	- cool	Samhes	Pr Composite	COMPOSITE	COMPOSITE	COMPOSITE			arks			