DEPUTY OIL 2 GAS ASSOCIO ENVIRONMENTAL PROTECTION OFFICE SO VISK - bedvoor NATURAL RESOURCE DEED P.O. BOX 507

DULCE, NEW MEXICO 87528 PIT REMEDIATION AND CLOSURE REPORT

	(EOE) 226 0200
Operator: AMOCO PRODUCTION COMPANY	Telephone: (505)326-9200
Address: 200 Amoco Court, Farmington, NM	87401
racinty of went value.	
Location: Unit or Qtr/Qtr Sec_C Sec_15 T_25h	
Pit Type: Separator Dehydrator Other Other	
Pit Location: Pit dimensions: length 4	4', width 45', depth 7'
(Attach diagram)	ther
Footage from reference: 123	
_	7 mark
Direction from reference: 49	Degrees East North of
	West South X
- CAN TE	s than 50 feet (20 points) (30 feet to 99 feet (10 points) (30 Greater than 100 feet (0 points)
Depth To Groundwater: (Vertical distance from	on 30 feet (20 points)
contaminants to seasonal	Greater than 100 feet (0 points)
high water elevation of groundwater)	
contaminants to seasonal high water elevation of groundwater) Distance to an Ephemeral Stream Output Output	Less than 100 feet (10 points) Greater than 100 feet (0 points)
Distance to an Ephemeral Stream (Downgradient dry wash greater than	Greater than 100 feet (0 points)
ten feet in width)	
Distance to Nearest Lake, Playa, or Watering Pond	Less than 100 feet (10 points) Greater than 100 feet (0 points)
(Downgradient lakes, playas and	Greater than 100 feet (0 points)
livestock or wildlife watering ponds)	Yes (20 points)
Wellhead Protection Area: (Less than 200 feet from a private	No (0 points)
domestic water source, or: less than	
1000 feet from all other water sources)	Less than 100 feet (20 points)
Distance To SurfaceWater:	100 feet to 1000 feet (10 points)
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks,	Greater than 1000 feet (0 points)
irrigation canals and ditches)	
n	ANKING SCORE (TOTAL POINTS):

		87567	BLOW PIT
Date Remediation Sta	rted:	Date Completed:	6/18/98
Pemediation Method:	Excavation X	Approx. cubic yards	450
heck all appropriate	Landfarmed X		
sections)	Other		
	Omeita Offsite X	JICALILA CONTRACT	148-14
Remediation Location (i.e. landfarmed onsite,	: Onsite Onsite	(C-15-25-5)	
name and location of offsite facility)			
General Description	of Remedial Action: Excava	ation, BEDROCK BOTTOM	
Groundwater Encoun	tered: No <u>×</u> Ye	s Depth	_
Final Pit:	Sample location see Attac	ched Documents	
Closure Sampling: (if multiple samples,			
attach sample results	Sample depth 4	(SOUTH SIDEWAL)	
and diagram of sample locations and depths)	Sample date 4/18/6	Sample time	1100
		 	
	Sample Results Soil: Benzene (pp	m) Water: Benz	ene (ppb)
		, <u></u>	ene (ppb)
			benzene (ppb)
	Field Headspace (pp	····)	Xylenes (ppb)
Groundwater Sample	e: Yes No	(If yes, attach sample resu	lts)
II WNICHWITECE AND H	RROLLERE	ABOVE IS TRUE AND COMPL	
DATE:	6/18/98_, PRINT	ED NAME Buddy D. Shar	V
DATE 3	Oly Son ANI	TITLE Environmenta	L Coordinator
PER DEVIEW OF	THE DIT CLOSURE INFORM	IATION, PIT CLOSURE IS APP	ROVED IN ACCORDANC
TO THE JICARILLA	A APACHE TRIBE PIT CLOSU	RE ORDINANCE.	
APPROVED: YES ∠	X NO (REASON) _		
SIGNED: Lee		ATE: <u>7-27-98</u>	
SIGNED: Yeur	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		

3003906042 LOCATION NO: BJ567 BLAGG ENGINEERING, INC. CLIENT: AMOCO P.O. BOX 87, BLOOMFIELD, NM 87413 C.O.C. ND: ____ (505) 632-1199 FIELD REPORT: CLOSURE VERIFICATION PAGE No: _ DATE STARTED: 6/18/98 LOCATION: NAME: JICA, CONTR. 148 WELL #: 13 PIT: BLOW DATE FINISHED: . QUAD/UNIT: C SEC: 15 TWP: 250 RNG: 5W PM: NM CNTY: RA ST: NM ENVIRONMENTAL QTR/FOOTAGE: 1005 FAL 1750 FWL CONTRACTOR: PJS SPECIALIST: EXCAVATION APPROX. 44 FT. x 45 FT. x 7 FT. DEEP. CUBIC YARDAGE: DISPOSAL FACILITY: TICA. CONTR. 148-14 REMEDIATION METHOD: LANDFRAM FORMATION: \mathcal{O} LAND USE: RANGE LEASE: JIC 148 FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 173 FT. 549€ FROM WELLHEAD. DEPTH TO GROUNDWATER: 2100' NEAREST WATER SOURCE: 21000' NEAREST SURFACE WATER: 21000' NMOCD RANKING SCORE: D NMOCD TPH CLOSURE STD: 5000 PPM PIT ABANDONED STEEL TANK INSTALLED SOIL AND EXCAVATION DESCRIPTION: FIBERGLASS TANK INSTALLED SIDEMILLS: MOSTLY DK. YELL. ORDINGE SAND, NOW WHESIVE, SLICHTLY MOIST, FIRM TO DENSE NO APPARENT STAINING OR HE ODOR OBSTRUED WIND EXCAUATION NO APPARENT HC ODOR IN ANY OF THE DUM SAMPLES. BOTTOM - BEDROCK (SANDSTONE) PALE YELL ORANGE, VERY HARD, SOME STAINING / DISCOURATION OBSERVED IN SMALL ISOLATED PATCHES, NO APPAKENT HE ODOR DETECTED IN EXCOUNTION OR OUM JAMPIE! CUSE FIELD 418.1 CALCULATIONS BEDRO CK SAMPLE I.D. LAB NO: WEIGHT (g) ML. FREON DILUTION READING CALC. ppm 1 BOTTOM TIME 1:1 RN 3 & 4' TPH -1991 1100 SCALE FT PROFILE PIT PERIMETER A OVM HEAD RESULTS FIELD HEADSPACE PID (ppm) 2 5 0.0 0.0 2 2 4' 148-14 3 **e** 4' 0.0 BEDROCE 4 2 5 1 0.0 13.2 LAB SAMPLES DOWN SLOPE CALLOUT: 6/16/98-moRN. ONSITE: 6/18/98-mORN. TRAVEL NOTES:

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 @ 4'

Date Analyzed:

06 - 18 - 98

%

Project Location: Laboratory Number: Jicarilla Contract 148 - 13 TPH-1991

Date Reported:

06-18-98

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:

Duplicate QA/QC Sample *Diff. TPH mg/kg TPH mg/kg 1.65 1712 1684

Method:

Modified Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste,

USEPA Storet No.4551, 1978

Comments:

Blow Pit - BJ567

Poview Stage

^{*}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

Client: AMOCO Project #:

Sample ID: 3 @ 4' Date Analyzed: 06-18-98
Project Location: Jicarilla Contract 148 - 13 Date Reported: 06-18-98

Laboratory Number: TPH-1991 Sample Matrix: Soil

Sample Weight: 5.00 grams Volume Freon: 20.00 mL

Dilution Factor: 1 (unitless)
TPH Reading: 4 mg/kg

TPH Result:

Reported TPH Result:

Actual Detection Limit:

16.0 mg/kg
16 mg/kg
20.0 mg/kg
Reported Detection Limit:
20 mg/kg

QA/QC: Original Duplicate %

TPH mg/kg TPH mg/kg Diff.

----- 1684 1712 1.65

Comments: Blow Pit - BJ567

BT567

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

SUBMIT 1 COPY TO

NATURAL RESOURCE DEPT

AND OIL & GAS ADMINISTRATION

PIT REMEDIATION AND CLOSURE REPORT

Operator: AMOCO PRODUCTION COMPANY	Telephone: (505)326-9200
Address: 200 Amoco Court, Farmington, N	IM 87401
Facility or Well Name:	TRACT 148-13
Location: Unit or Qtr/Qtr Sec C Sec 15 TZ	
Pit Type: Separator Dehydrator Other_ ρ	RODUCTION TANK
Land Type: RANGE	
(August diamon)	28', width25', depth3'
Footage from reference: 30	
Direction from reference:	Degrees X 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) O 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)
n	RANKING SCORE (TOTAL POINTS):

Date Remediation Sta	rted:	Date Co	ompleted:	6/18/98
Pemediation Method:	Excavation		cubic yards	~ ~
'heck all appropriate	Landfarmed ×	Insitu Bio	oremediation	
, social,	Other			
Remediation Location: (i.e. landfarmed onsite, name and location of	Onsite Offsite	X JICARILLA (c-15-25	contract 5-5)	148 - 14
offsite facility)	of Remedial Action: Exce	oration EXCAU	ATTON MOST	y BEOR+CIZ,
General Description	of Remedial Action: EXCO	TOWN STED	RISK ASSEST	SEO .
12	tered: No 🔀			
Final Pit: Closure Sampling: (if multiple samples,	Sample locationsee At:	ached Document	S	
attach sample results	Sample depth 6/18	3' (PIT BOTTOM)	ample time \underline{c}	930
	Sample Results		•	
	Soil: Benzene	ppm)	Water: Benzene	(ppb)
	Total BTEX		Toluene	(ppb)
	Field Headspace		Ethylben	zene (ppb)
	трн (Total Xy	lenes (ppb)
Groundwater Sample	: Yes No _	∠ (If yes, attach	ı sample results)	
I HEREBY CERTIFY KNOWLEGE AND B	THAT THE INFORMATIO	N ABOVE IS TRUE A	AND COMPLETI	E TO THE BEST OF MY
DATE	6/18/98 PRI	NTED NAMEBudo	dy D. Shaw	
SIGNATURE BUD	ly D. Shaw A	ND TITLE Env	ironmental C	coordinator
AFTER REVIEW OF TO THE JICARILLA	THE PIT CLOSURE INFOI APACHE TRIBE PIT CLOS	RMATION, PIT CLOS SURE ORDINANCE.	SURE IS APPRO	VED IN ACCORDANCE
APPROVED: YES	NO (REASON)			
SIGNED:	Mal	<u> </u>	98	

BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199 FIELD REPORT: CLOSURE VERIFICATION LOCATION: NAME: JIGO. CONTR. 148 WELL #: 13 PIT: PROD. QUAD/UNIT: C SEC: 15 TWP: Z5N RNG: 5W PM: NM CNTY: PA ST: NM OTR/FOOTAGE: 1005 FNL 1750 FNL CONTRACTOR: P& S EXCAVATION APPROX. 28 FT x 25 FT x 3 FT. DEEP. CUBIC YARDAGE: DISPOSAL FACILITY: JIGO. CONTR. 148 - 14 REMEDIATION METHOD: LAND FARM LAND USE: RANGE LEASE: JIC 148 FORMATION: D FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 306 FT. CARE FROM DEPTH TO GROUNDWATER: >100 NMOOD THE CLOSURE STD: 5000 PPM V PIT ABANDONED	1_ of 6/18/98 NV 35
FIELD REPORT: CLOSURE VERIFICATION PAGE NO: _/ LOCATION: NAME JICH. CONTR. 148 WELL #: 13 PIT: PROD. QUAD/UNIT: C SEC: 15 TWP: Z5N RNG: 5W PM: NM CNTY. PAST. NM OTR/FOOTAGE: 1005 FNL 1750 FNL CONTRACTOR: P&S EXCAVATION APPROX. 28 FT. x 25 FT. x 3 FT. DEEP. CUBIC YARDAGE: DISPOSAL FACILITY: TICH. CONTR. 148 - 14 REMEDIATION METHOD: LANDERRY LAND USE: RANGE LEASE: JIC 148 FORMATION:	1 of _L 6/18/98 NV
FIELD REPORT: CLOSURE VERIFICATION PAGE NO: _/ LOCATION: NAME: JID. CONTR. 148 WELL #: 13 PIT: PROD. QUAD/UNIT: C SEC: 15 TWP: ZSN RNG: SW PM: NM CNTY: PAST: NM QTR/FOOTAGE: 1005 FNL 1750 FWL CONTRACTOR: P&S EXCAVATION APPROX. 28 FT x 25 FT x 3 FT. DEEP. CUBIC YARDAGE: DISPOSAL FACILITY: TICH. CONTR. 148 - 14 REMEDIATION METHOD: LANDFARM LAND USE: RANCE LEASE: JIC 148 FORMATION: D FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 306 FT. ONE EAST FROM DEPTH TO GROUNDWATER: >1000 NEAREST SURFACE WATER: 716 DEPTH TO GROUNDWATER: >1000 NEAREST SURFACE WATER: 716 CHECK ONE	NV 35
OCATION: NAME: JICP. CONTR. 148 WELL #: 13 PIT: PROD. QUAD/UNIT: C SEC: 15 TWP: ZSN RNG: SW PM: NM CNTY: PAST: NM OTR/FOOTAGE: 1005 FNL 1750 FWL CONTRACTOR: P&S ENVIRONMENTAL SPECIALIST: METHOD: LAND USE: LEASE: JIC 148 FORMATION: DEPTH TO GROUNDWATER: NEAREST WATER SOURCE: NEAREST SURFACE WATER: 21.000 NEAREST SURFACE WATER: 21.0000 NEAREST SURFACE WATER: 21.0000 NEAREST SURFACE WATER: 21.0000 NEAREST SURFACE WATER: 21.0000 NEAREST SURFACE WATER: 21.00000 NEAREST SURFACE WATER: 21.0000 NEAREST SURFACE WATER: 21.00000 NEAREST SURFACE WATER: 21.0000 NEAREST SURFACE WATER: 21.0000 NEAREST SURFACE WATER: 21.00000 NEAREST SURFACE WATER: 21.000000 NEAREST SURFACE WATER: 21.000000000 NEAREST SURFACE WATER: 21.000000000000000000000000000000000000	18 98 NV
QUAD/UNIT: C SEC: 15 TWP: Z SN RNG: SW PM: NM CNTY: ST: NM QTR/FOOTAGE: 1005 FNL 1750 FWL CONTRACTOR: P & ST: NM ENVIRONMENTAL SPECIALIST: MOTERATION APPROX. 28 FT. x ZS FT. x 3 FT. DEEP. CUBIC YARDAGE: DISPOSAL FACILITY: TIGO. CONTR. (48 - 14 REMEDIATION METHOD: LANDERS) LAND USE: RANGE LEASE: JIC 148 FORMATION: DEPTH 10 GROUNDWATER: NEAREST WATER SOURCE: NEAREST SURFACE WATER: 218 DATE FINISHED: DATE FINISHED: DATE FINISHED: MOTERATION: METHOD: LANDERS FORMATION: DEPTH 10 GROUNDWATER: NEAREST WATER SOURCE: NEAREST SURFACE WATER: 218 CHECK ONE	NV 35
QUAD/UNIT: C SEC: 15 TWP: Z5N RNG: 5W PM: NM CNTY: NM ENVIRONMENTAL SPECIALIST:	75
EXCAVATION APPROX. 28 FT. x 25 FT. x 3 FT. DEEP. CUBIC YARDAGE: DISPOSAL FACILITY: TIGH. CONTR. (48 - 14 REMEDIATION METHOD: LANDERS) LAND USE: RANGE LEASE: TIC 148 FORMATION: FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 306 FT. ONE FOST FROM DEPTH TO GROUNDWATER: >133 FT. DEEP. CUBIC YARDAGE: OFFICE OF THE CONTR. (48 - 14 REMEDIATION METHOD: LANDERS) FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 306 FT. ONE FOST FROM DEPTH TO GROUNDWATER: >133 FT. DEEP. CUBIC YARDAGE: OFFICE OF THE CONTRACTOR: P&S SPECIALISI: 7 SPECIALISI: 7 OFFICE OF THE CONTRACTOR: P&S SPECIALISI: 7 SPECIALISI	35
EXCAVATION APPROX. 28 FT. x 25 FT. x 3 FT. DEEP. CUBIC YARDAGE: DISPOSAL FACILITY: TIGH. CONTR. (48 - 14 REMEDIATION METHOD: LANDFARE LAND USE: RANGE LEASE: TIGHT FORMATION: DEPTH TO GROUNDWATER: >130 NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >130 CHECK ONE	<u>35</u>
DISPOSAL FACILITY: TIGO. CONTR. 148 - 14 REMEDIATION METHOD: LANDERS. LAND USE: RANGE LEASE: TIGO 148 FORMATION: DEPTH TO GROUNDWATER: NEAREST WATER SOURCE: NEAREST SURFACE WATER: NE	m
LAND USE: RANGE LEASE: 100 148 FORMATION. DE FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 306 FT. ONE FIRST FROM DEPTH TO GROUNDWATER: >130 NEAREST WATER SOURCE: >1300 NEAREST SURFACE WATER: >1300 CHECK ONE	
FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 306 FT. ONE EAST FROM DEPTH TO GROUNDWATER: >100 / NEAREST WATER SOURCE: >1000 / NEAREST SURFACE WATER: >1000 / NEAREST SURFACE WATER: ONE	<u> K</u>
DEPTH TO GROUNDWATER: >130 NEAREST WATER SOURCE:	WELLHEAD.
DEPTH TO GROUNDWATER:	000′
cop TOU CLUSTED STUDY OF THE STUDY OF ADAMIDINAL IN	
NMOCD RANKING SCUPE: STEEL TANK INS	STALLED
SUIL AND EXCAVATION BESCRIPTIONFIBERGLASS TAN	K INSTALLED
EXCAUATION INDSTLY BEDROCK (SANDSTONE) PALE YELL. DRANGE FRIABLE NE	enr
GLOWED SURFACE TO VERY HARD & PIT BOTTOM BOTTOM SLIVE GRAY	· 10
COLDIZ WHE TO BEDITCK, NO THE ANALYSIS WAS CONDUCTE	±2 .
EXCAUATION KISK ASSESSED	
FIELD 418.1 CALCULATIONS FIELD 418.1 CALCULATIONS FIELD 418.1 CALCULATIONS FIELD 418.1 CALCULATIONS	CALC. ppm
SCALE 0930	
0 FT	
PIT PERIMETER AN PIT PROFILE	\ '
OVM A	7
RESULTS SAMPLE FIELD HEADSPACE	
25 PRSD. PID (ppm)	•
7 TO-K 2 37 711	135
4 BEDROCK	
WELL A D A ZS 5	
HEAD A	
SAMPLE SAMPLES SAMPLE ANALYSIS TIME	
DOWN SUPE SAMPLES SAMPLE ANALYSIS TIME DIRECTION	
V	

Well Name:

Well Site location:

Pit Type:

Producing Formation:

Pit Category:

Horizontal Distance to Surface Water:

Vicinity Groundwater Depth:

Jicarilla Contract 148 #13

Unit C. Sec. 15, T25N, R5W Production Tank Pit Basin Dakota Non Vulnerable

> 1000 ft.

> 100 ft.

RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 3 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 3 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 0.42 miles east of the nearest vulnerable area boundary (Gonzales Canyon wash).

(Refer to <u>Lapis Point Quadrangle</u>, New <u>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>, New <u>Mexico Oil Conservation Division</u>).

Based upon the information given, we conclude 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.

BJ567

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

	45-5000 0000
Operator: AMOCO PRODUCTION COMPANY	Telephone: (505)326-9200
Address: 200 Amoco Court, Farmington, MI	
Facility of Well Name.	TRACT 148 - 13
Location: Unit or Qtr/Qtr Sec C Sec \S T 2	
Pit Type: Separator Other Other	
Land Type:	
	」フ', width ZZ', depth 3 '
	other
Footage from reference:)
Direction from reference: \(\sigma \)	
	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):

	Date Completed: 6/18/98
Date Remediation Started:	Approx. cubic yards 2.5
"emediation Method: Excavation heck all appropriate	
Landfarmed	Insitu Bioremediation
Other	
Remediation Location: Onsite Offsite	X JICARILLA CONTRACT 148-14
(i.e. landfarmed onsite, name and location of	(C-15-25-5)
offsite facility)	0
General Description of Remedial Action: Exc	cavation. Excountion mostly beorder,
THEREFORE NO THA ANALYSIS	WAS CONDUCTED. RISK ASSESSED.
Groundwater Encountered: No X	Yes Depth
	ttached Documents
Final Pit: Sample location see Af Closure Sampling:	Couched Booking.
(if multiple complete	/ / 2 - 8
	(PIT BOTTOM)
locations and depths) Sample date6/18	Sample time 945
Sample Results	
Soil: Benzene	(ppm) Water: Benzene (ppb)
Total BTEX	(ppm) Toluene (ppb)
Field Headspace	(ppm) 325 Ethylbenzene (ppb)
ТРН	(ppm) NA Total Xylenes (ppb)
Groundwater Sample: Yes No	(If yes, attach sample results)
I HEREBY CERTIFY THAT THE INFORMATION KNOWLEGE AND BELIEF	ON ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY
DATE 6/18/98 PR	INTED NAME Buddy D. Shaw
ROANS	AND TITLE Environmental Coordinator
SIGNATURE FOR	ORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE
TO THE JICARILLA APACHE TRIBE PIT CLOSURE INFO	OSURE ORDINANCE.
APPROVED: YES X NO (REASON	D)
SIGNED: Low Manne	DATE: 7-27-98

CLIENT: AMOCO	BLAGG ENGINEERING, INC	, ,,,,,	ATTONINO NO. 5756 /
CLIENT: AIVIOCO	RIAGG ENGINEERING, IN	,. LUC	ATION NO: 87567
111/1	BOX 87, BLOOMFIELD, NM	87413	C.D.C. ND:
[P.O.	(505) 632-1199		U.L.U. INLI'
	(505) 632-1100		
		TION	E No: of
FIFID REPORT.	CLOSURE VERIFICA	IION PAG	E NO:
			STARTED: 6/18/98
CONTIONS NAME TICK COSTA	148 WELL #: 13 PIT: SEP		FINISHED:
DUATION: NAME: JIG T. CANTA.	ZSN RNG: SW PM: NM CNTY: RF	ST: Nm	
QUAD/UNIT: C SEC: 15 TWP:	ZSA RNG SW FM N COLLE	ENVIR	RONMENTAL AV
OTO COUNTAGE 1005 FAL 175	O PUL CONTRACTOR: P&S		
UTR/FUBINGE	x _2Z	CUDIC VAI	RDAGE: 25
YCAVATION APPROX. 17 FT	. x FT. x FT. DEEP	COBIC TAI	torios.
	-0 148-14 REMEDIATION	MEIHUD	
DISPOSAL FACILITY: 1101: COA	TIC 148	FORMAT	TION: DK
LAND USE: RANGE	LEASE: JIC 148		
		> == N84 1	€ FROM WELLHEA
IELD NOTES & REMARKS:	PIT LOCATED APPROXIMATELY	TOT SUBTACE MA	
DEPTH TO GROUNDWATER: 7100' NE	CAREST WATER SOURCE: NEA	SEZI ZOKLACE AN	HECK ONE
DEFIN TO GREEN DATE	PIT LOCATED APPRUXIMATELY 10. CAREST WATER SOURCE: >1000 / NEA MOCD TPH CLOSURE STD: 5000 PPM	✓ DIT	A PANIDONE D
MMUCD KHINKING SCRIEG TOTAL		PII	EL TANK INSTALLED
SOIL AND EXCAVATION DE	SCRIPTION:	215	ERGLASS TANK INSTALL
		F 1B	EKULASS TAIN THO THE
	SEDROCK (SANDSTONE) PACE SELORATION W/ STRONG HC OR	YELL. DRANG	se very haird,
RISK AS	SSESSED		
EXCAVATION RISK AS	SSESSED)	2MDITA HE	
MOSTLY	CTC D 4101 CAL	CULATIONS	ON READING CALC. PP
EXCOUNTION RISK AS MOSTLY BEDROCK TIM	FIELD 418.1 CALI	CULATIONS nL. FREON DILUTION	ON READING CALC. PP
BEDDEX TIM	FIELD 418.1 CALI ME SAMPLE I.D. LAB No: WEIGHT (g)	NULATIONS nL. FREON DILUTION	ON READING CALC. PP
MOSTLY	FIELD 418.1 CALI ME SAMPLE I.D. LAB No: WEIGHT (g)	CULATIONS nL. FREON DILUTI	ON READING CALC. PPI
SCALE 094	FIELD 418.1 CALI ME SAMPLE I.D. LAB No: WEIGHT (g)	nL. FREON DILUTI	
SCALE 094	FIELD 418.1 CALUME SAMPLE I.D. LAB No: WEIGHT (g)	nL. FREON DILUTI	
SCALE 094 O FT PIT PERIMETE	FIELD 418.1 CALUME SAMPLE I.D. LAB No: WEIGHT (g)	nL. FREON DILUTI	ON READING CALC. PPI
SCALE 094 O FT PIT PERIMETE	FIELD 418.1 CALUME SAMPLE I.D. LAB NO: WEIGHT (g) I	nL. FREON DILUTI	
SCALE 094 O FT PIT PERIMETE	FIELD 418.1 CALUME SAMPLE I.D. LAB No: WEIGHT (g)	PIT P	ROFILE
SCALE 094 O FT PIT PERIMETE	FIELD 418.1 CALUME SAMPLE I.D. LAB NO: WEIGHT (g) IT	PIT P	
SCALE 094 O FT PIT PERIMETE	FIELD 418.1 CALUME SAMPLE I.D. LAB No: WEIGHT (g) IT	PIT P	ROFILE
SCALE 094 O FT PIT PERIMETE	FIELD 418.1 CALL ME SAMPLE I.D. LAB NO: WEIGHT (g) r S OVM RESULTS SAMPLE ID FIELD HEADSPACE PID (ppm)	PIT P	ROFILE
SCALE 094 O FT PIT PERIMETE	FIELD 418.1 CALL SAMPLE I.D. LAB NO: WEIGHT (g) r OVM RESULTS SAMPLE ID FIELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3	PIT P	ROFILE
SCALE 099 O FT PIT PERIMETE SEP	FIELD 418.1 CALL ME SAMPLE I.D. LAB NO: WEIGHT (g) r S OVM RESULTS SAMPLE ID FIELD HEADSPACE PID (ppm)	PIT P	ROFILE
SCALE O FT PIT PERIMETE SEP	FIELD 418.1 CALL SAMPLE I.D. LAB NO: WEIGHT (g) r OVM RESULTS SAMPLE ID FIELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3	PIT P	ROFILE
SCALE O FT PIT PERIMETE SEP	FIELD 418.1 CALUME SAMPLE I.D. LAB NO: WEIGHT (9) IT S OVM RESULTS SAMPLE FIELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3 4 5	PIT P	ROFILE
SCALE O FT PIT PERIMETE SEP	FIELD 418.1 CALL SAMPLE I.D. LAB NO: WEIGHT (g) r OVM RESULTS SAMPLE ID FIELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3	PIT P	ROFILE
SCALE 099 O FT PIT PERIMETE SEP	FIELD 418.1 CALUME SAMPLE I.D. LAB NO: WEIGHT (9) IT S OVM RESULTS SAMPLE FIELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3 4 5	PIT P	ROFILE
SCALE O FT PIT PERIMETE SEP	FIELD 418.1 CALUME SAMPLE I.D. LAB NO: WEIGHT (9) IT S OVM RESULTS SAMPLE FIELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3 4 5	PIT P	ROFILE
SCALE O FT PIT PERIMETE SEP	FIELD 418.1 CALL SAMPLE I.D. LAB NO: WEIGHT (g) I OVM RESULTS SAMPLE FELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3 4 5 LAB SAMPLES	PIT P	ROFILE
SCALE O FT PIT PERIMETE SEP	FIELD 418.1 CALL SAMPLE I.D. LAB NO: WEIGHT (g) I OVM RESULTS SAMPLE PID (ppm) 1 2 3 3 2 5 3 4 5	PIT P	ROFILE
SCALE 094 O FT PIT PERIMETE SEP	FIELD 418.1 CALUMETER SAMPLE I.D. LAB NO: WEIGHT (9) IT SELD HEADSPACE PID (ppm) RESULTS SAMPLE FIELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3 4 5 LAB SAMPLES	PIT P	ROFILE
SCALE O FT PIT PERIMETE SEP	FIELD 418.1 CALUMETER SAMPLE I.D. LAB NO: WEIGHT (9) IT SELD HEADSPACE PID (ppm) RESULTS SAMPLE FIELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3 4 5 LAB SAMPLES	PIT P	ROFILE
SCALE 094 O FT PIT PERIMETE SEP	FIELD 418.1 CALUMETER SAMPLE I.D. LAB NO: WEIGHT (9) IT SELD HEADSPACE PID (ppm) RESULTS SAMPLE FIELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3 4 5 LAB SAMPLES	PIT P	ROFILE
SCALE O FT PIT PERIMETE SEP	FIELD 418.1 CALUMETER SAMPLE I.D. LAB NO: WEIGHT (9) IT SELD HEADSPACE PID (ppm) RESULTS SAMPLE FIELD HEADSPACE PID (ppm) 1 2 3 3 2 5 3 4 5 LAB SAMPLES	PIT P	ROFILE
SCALE O FT PIT PERIMETE SEP A TO WELL HEAD	FIELD 418.1 CALUMETER SAMPLE I.D. LAB NO: WEIGHT (9) IT SET TO THE SET THE SAMPLE SAMPLE SAMPLE SAMPLE ANALYSIS TIME	PIT P	ROFILE
SCALE 094 O FT PIT PERIMETE SEP	FIELD 418.1 CALL SAMPLE I.D. LAB NO: WEIGHT (g) IT OVM RESULTS SAMPLE FIELD HEADSPACE PID (ppm) 1 @ 3 ' 3 7 S 2 3 4 5 LAB SAMPLES SAMPLE ANALYSIS TIME	PIT P	ROFILE

Well Name:

Well Site location:

Pit Type:

Producing Formation:

Pit Category:

Horizontal Distance to Surface Water:

Vicinity Groundwater Depth:

Jicarilla Contract 148 #13

Unit C, Sec. 15, T25N, R5W

Separator Pit Basin Dakota

Non Vulnerable > 1000 ft.

> 100 ft.

RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 3 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 3 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.
- 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 0.42 miles east 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 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.