

District III

1000 R. DEPT. OF

Aztec, NM 87410

State of New Mexico

Energy, Minerals and Natural Resources Department

FEB 6 8 1999

## OIL CONSERVATION DIVISION

2040 S. PACHECO

Santa Fe, New Mexico 87505

Submit 1 copy to

Appropriate District

and 1 copy to

Santa Fe Office

## PIT REMEDIATION AND CLOSURE REPORT

Operator: Apache Corporation \ MW Petroleum

Telephone:

505-325-0318

Address: 2855 Southside River Road, Suite A, Farmington, NM 87401

Facility or Well Name:

Jic Apache Tribal A118 #17 Pit #1

Location: Unit or Qtr/Qtr Sec

SE/SE Sec 26 T 26 N R 3W County Rio ArribaPit Type: Separator: XX Dehydrator        Other       Land Type: Jicarilla Tribal

Beginning Pit Dimensions: Length 22' Width 22' Depth 3'

Pit Location: Ending Pit Dimensions: Length 25' Width 25' Depth 6'

(Attach diagram)

Reference: Wellhead XX Other       

Footage from reference: 112'

Direction from reference: 142 Degrees X East North  
West South XX

## 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

## 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:

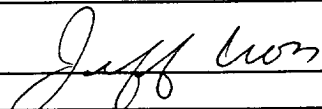
(Horizontal distance to perennial  
lakes, ponds, rivers, streams, creeks,  
irrigation canals and ditches)

Less than 200 feet (20 points)       

200 feet to 1000 feet (10 points)       

Greater than 1000 feet (0 points) 0

RANKING SCORE (TOTAL POINTS) 0

<b>Date Remediation Started:</b>		<u>8/19/97</u>		<b>Date Completed:</b>		<u>8/21/97</u>	
<b>Remediation Method:</b> (Check all appropriate sections)		Excavation <u>XXX</u>		Approx. cubic yards		<u>92</u>	
		Landfarmed <u>XX</u>		Insitu Bioremediation			
		Other _____					
<b>Remediation Location:</b> (i.e. landfarmed onsite, name and location of offsite facility)		Onsite <u>XX</u>		Offsite _____			
<b>General Description of Remedial Action:</b>		<u>Excavate pit to 6' , took PID readings. Spread soil on location for remediation. Took soil samples. Hit Bedrock, spray with 46-0-0 Fertilizer.</u>					
<b>Groundwater Encountered:</b>		No <u>XX</u>		Yes _____		Depth _____	
<b>Final Pit:</b>		Sample location		<u>4 point composite sample taken from pit sidewalls. Grab sample</u>			
<b>Closure Sampling:</b> (in multiple samples, attach sample results and diagram of sample locations and depths)		Sample depth <u>6'</u>		<u>8 to 10" into pit sidewalls 10" into pit bottom</u>			
		Sample Date		<u>8/21/97</u>		Sample Time <u>10:00 AM</u>	
		Sample results					
		Benzene		(ppm)		<u>ND</u>	
		Total BTEX		(ppm)		<u>Side/35.4</u> <u>Btm/32.6</u>	
		Field Headspace		(ppm)		<u>486</u>	
		TPH				<u>Side/10,000</u> <u>Btm/11,000</u>	
<b>Groundwater Sample:</b>		Yes _____		No <u>XX</u>		(If yes attach sample results)	
<b>I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.</b>							
<b>DATE</b>		<u>December 1, 1998</u>		<b>PRINTED NAME</b>		<u>Jeff Cross</u>	
<b>SIGNATURE</b>				<b>AND TITLE</b>		<u>Project Manager</u>	

District III  
1000 Rio Brazos Rd  
Aztec, NM 87410

State of New Mexico  
Energy, Minerals and Natural Resources Department

**OIL CONSERVATION DIVISION**  
2040 S. PACHECO  
Santa Fe, New Mexico 87505

Submit 1 copy to  
Appropriate District  
and 1 copy to  
Santa Fe Office

**PIT REMEDIATION AND CLOSURE REPORT**

Operator: Apache Corporation \ MW Petroleum Telephone: 505-325-0318

Address: 2855 Southside River Road, Suite A, Farmington, NM 87401

Facility or Well Name: Jic Apache Tribal A118 #17 Pit #2

Location: Unit or Qtr/Qtr Sec SE/SE Sec 26 T 26 N R 3W County Rio Arriba

Pit Type: Separator: \_\_\_\_\_ Dehydrator \_\_\_\_\_ Other Tank Drain

Land Type: Jicarilla Tribal

Beginning Pit Dimensions: Length 15' Width 15' Depth 2'  
Pit Location: Ending Pit Dimensions: Length 18' Width 18' Depth 6'  
(Attach diagram)  
Reference: Wellhead XX Other \_\_\_\_\_  
Footage from reference: 98'  
Direction from reference: 98 Degrees XX East North  
of West South X

**Depth To Groundwater:** Less than 50 feet (20 points) \_\_\_\_\_  
(vertical distance from 50 feet to 99 feet (10 points) \_\_\_\_\_  
contaminants to seasonal Greater than 100 feet (0 points) 0  
high water elevation of  
groundwater)

**Wellhead Protection Area:** Yes (20 points) \_\_\_\_\_  
(Less than 200 feet from a private No (0 points) 0  
domestic water source, or; less than  
1000 feet from all other water sources)

**Distance To Surface Water:** Less than 200 feet (20 points) \_\_\_\_\_  
(Horizontal distance to perennial 200 feet to 1000 feet (10 points) \_\_\_\_\_  
lakes, ponds, rivers, streams, creeks, Greater than 1000 feet (0 points) 0  
irrigation canals and ditches)

RANKING SCORE (TOTAL POINTS) 0

**Date Remediation Started:** 8/21/97 **Date Completed:** 8/21/97

**Remediation Method:**  
(Check all appropriate sections)

Excavation XXX Approx. cubic yards 48

Landfarmed XX Insitu Bioremediation \_\_\_\_\_

Other \_\_\_\_\_

**Remediation Location:**  
(i.e. landfarmed onsite, name and location of offsite facility)

Onsite XX Offsite \_\_\_\_\_

**General Description of Remedial Action:** Excavate pit to 6' , took PID readings. Spread soil on location for remediation. Took soil samples. Hit Bedrock, spray with 46-0-0 Fertilizer.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Groundwater Encountered:** No XX Yes \_\_\_\_\_ Depth \_\_\_\_\_

**Final Pit:** Sample location 4 point composite sample taken from pit sidewalls. Grab sample

**Closure Sampling:**  
(in multiple samples, attach sample results and diagram of sample locations and depths)

Sample depth 6' 8 to 10" into pit sidewalls 10" into pit bottom

Sample Date 8/21/97 Sample Time 2:30 PM

Sample results

Benzene (ppm) ND

Total BTEX (ppm) Side/18.3  
Btm/5.06

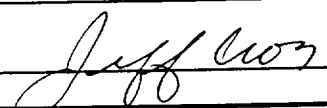
Field Headspace (ppm) 68

TPH Side/1,100  
Btm/2,800

**Groundwater Sample:** Yes \_\_\_\_\_ No XX (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 December 1, 1998 PRINTED NAME Jeff Cross

SIGNATURE  AND TITLE Project Manager



<b>Well Name:</b>	<b>JAT A 118 #17</b>
<b>Well Site Location:</b>	<b>SE SE, Sec 26, T26N, R3W</b>
<b>Pit Type:</b>	<b>Separator</b>
<b>Producing Formation:</b>	<b>Lindrith Gallup/Dakota West</b>
<b>Pit Category:</b>	<b>Non-Vulnerable</b>
<b>Horizontal Distance to Surface Water:</b>	<b>Greater than – 1000 Ft.</b>
<b>Vicinity Groundwater Depth:</b>	<b>Greater than – 100 Ft.</b>

### **RISK ASSESSMENT**

Pit remediation activities were terminated when Backhoe encountered sandstone bedrock at 6 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 6 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. Daily discharge into the earthen pit has been terminated. Prior discharge into the pit is believed to be under one barrel per day.
3. Test results of pit sides showed total BTEX to be 35.4 PPM and TPH to be 10,000 PPM.
4. Pit bottom test results showed total BTEX to be 32.6 PPM with a TPH of 11,000 PPM.

Based upon the information given, we conclude that the surface lateral impact from the earthen pit is very limited and that the sandstone bottom creates enough of a permeable barrier as to subdue impact into groundwater below it. Apache Corporation requests pit closure approval on this location.

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:	<u>M W PETROLEUM</u>		Telephone	<u>505-325-0318</u>				
Address:	<u>2855 SOUTHSIDE RIVER ROAD / SUITE A / FARMINGTON N.M. 87401-7947</u>							
Facility or Well Name:	<u>JAT A 118 # 17</u>		PIT #	<u>1</u>				
Location:	Unit or Qtr/Qtr	Sec	<u>SE\SE</u>	<u>SEC 26</u>	<u>T 26 N</u>	<u>R 3W</u>	County	<u>RIO ARRIBA</u>
Pit Type:	Separator:	<u>XX</u>	Dehydrator				Other	
Land Type:	<u>JIC. TRIBAL</u>							
Pit Location: (Attach diagram)	Pit Dimensions:	Length	<u>25'</u>	Width	<u>25'</u>	Depth	<u>6'</u>	
	Reference:	Wellhead	<u>XXX</u>	Other				
	Footage from reference:	<u>112'</u>						
	Direction from reference:	<u>142</u>	Degrees	<u>X</u>	East	North		
					West	South	<u>XX</u>	
<b>Depth To Groundwater:</b> (vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet	(20 points)						
	50 feet to 99 feet	(10 points)						
	Greater than 100 feet	( 0 points)	<u>0</u>					
<b>Distance to an Ephemeral Stream:</b> (Downgradient dry wash greater than ten feet in width)	Less than 100 feet	(10 points)						
	Greater than 100 feet	( 0 points)	<u>0</u>					
<b>Distance to Nearest Lake, Playa, or Watering Pond:</b> (Downgradient lakes, playas and livestock or wildlife watering ponds)	Less than 100 feet	(10 points)						
	Greater than 100 feet	( 0 points)	<u>0</u>					
<b>Wellhead Protection Area:</b> (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources)	Yes	(20 points)						
	No	( 0 points)	<u>0</u>					
<b>Distance To Surface Water:</b> (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 100 feet	(20 points)						
	100 feet to 1000 feet	(10 points)						
	Greater than 1000 feet	( 0 points)	<u>0</u>					
	RANKING SCORE (TOTAL POINTS)							<u>0</u>

<b>Date Remediation Started:</b>		<u>8/19/97</u>		<b>Date Completed:</b>		<u>8/21/97</u>	
<b>Remediation Method:</b> (Check all appropriate sections)		Excavation <u>XXX</u>		Approx. cubic yards		<u>92</u>	
		Landfarmed <u>XX</u>		Insitu Bioremediation			
		Other _____					
<b>Remediation Location:</b> (i.e. landfarmed onsite, name and location of offsite facility)		Onsite <u>XX</u>		Offsite _____			
<b>General Description of Remedial Action:</b> <u>Excavate pit to 6', took PID readings. spread soil on</u>							
<u>location for remediation. Took soil samples. HIT BEDROCK, SPRAY WITH 46-0-0 FERT.</u>							
<b>Groundwater Encountered:</b>		No <u>XXX</u>		Yes _____		Depth _____	
<b>Final Pit:</b>		Sample location <u>4 point composite taken from pit sidewalls, Grab sample from pit</u>					
<b>Closure Sampling:</b> (in multiple samples, attach sample results and diagram of sample locations and depths)		bottom center. <u>8" to 10" into pit side walls, 10" into pit bottom.</u>					
		Sample depth		<u>6'</u>			
		Sample Date		<u>8/21/97</u>		Sample Time <u>10:00AM</u>	
		Sample results					
Soil:	Benzene	(ppm)	<u>ND</u>	Water:	Benzene	(ppb)	<u>NA</u>
	Total BTEX	(ppm)	<u>SIDE\35.4</u>		Toluene	(ppb)	<u>NA</u>
	Field Headspace	(ppm)	<u>BTM\32.6</u>		Ethylbenzene	(ppb)	<u>NA</u>
	TPH	(ppm)	<u>486</u>		Total Xylenes	(ppb)	<u>NA</u>
			<u>S\10000</u>				
			<u>B\11000</u>				
			<b>HIT BEDROCK</b>				
<b>Groundwater Sample:</b>		Yes _____		No <u>XXX</u>		(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 <u>9-14-98</u>		PRINTED NAME		<u>JEFF CROSS</u>			
SIGNATURE <u>Jeff Cross</u>		AND TITLE		<u>PROJECT MANAGER</u>			
AFTER REVIEW OF THE PIT CLOSURE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.							
APPROVED:		YES <u>X</u>		NO _____		(REASON) _____	
						<u>Risk Assest Attached</u>	
SIGNED: <u>Kent M...</u>				DATE: <u>11-13-98</u>			

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: <u>M W PETROLEUM</u>		Telephone <u>505-325-0318</u>	
Address: <u>2855 SOUTHSIDE RIVER ROAD / SUITE A / FARMINGTON N.M. 87401-7947</u>			
Facility or Well Name: <u>JAT A 118 # 17</u>		PIT # <u>2</u>	
Location:	Unit or Qtr/Qtr Sec <u>SEISE SEC 26</u>	T <u>26 N</u>	R <u>3W</u> County <u>RIO ARRIBA</u>
Pit Type:	Separator: <u>          </u>	Dehydrator <u>          </u>	Other <u>TANK DRAIN</u>
Land Type: <u>JIC. TRIBAL</u>			

Pit Location: (Attach diagram)	Pit Dimensions:	Length <u>18'</u>	Width <u>18'</u>	Depth <u>6</u>
	Reference:	Wellhead <u>XXX</u>	Other <u>          </u>	
	Footage from reference:	<u>98</u>		
	Direction from reference:	<u>98</u> Degrees	<u>XX</u> East	North <u>          </u> of South <u>X</u>

<b>Depth To Groundwater:</b> (vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet	(20 points)	
	50 feet to 99 feet	(10 points)	
	Greater than 100 feet	( 0 points)	<u>0</u>

<b>Distance to an Ephemeral Stream:</b> (Downgradient dry wash greater than ten feet in width)	Less than 100 feet	(10 points)	
	Greater than 100 feet	( 0 points)	<u>0</u>

<b>Distance to Nearest Lake, Playa, or Watering Pond:</b> (Downgradient lakes, playas and livestock or wildlife watering ponds)	Less than 100 feet	(10 points)	
	Greater than 100 feet	( 0 points)	<u>0</u>

<b>Wellhead Protection Area:</b> (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources)	Yes	(20 points)	
	No	( 0 points)	<u>0</u>

<b>Distance To Surface Water:</b> (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 100 feet	(20 points)	
	100 feet to 1000 feet	(10 points)	
	Greater than 1000 feet	( 0 points)	<u>0</u>
	<b>RANKING SCORE (TOTAL POINTS)</b>		

Date Remediation Started: 8/21/97 Date Completed: 8/21/97

Remediation Method: Excavation XXX Approx. cubic yards 48  
 (Check all appropriate sections) Landfarmed XX Insitu Bioremediation \_\_\_\_\_  
 Other \_\_\_\_\_

Remediation Location: Onsite XX Offsite \_\_\_\_\_  
 (i.e. landfarmed onsite, name and location of offsite facility)

General Description of Remedial Action: Excavate pit to 6', took PID readings. spread soil on  
location for remediation. Took soil samples. HIT BEDROCK, SPRAY WITH 46-0-0 FERT.

Groundwater Encountered: No XXX Yes \_\_\_\_\_ Depth \_\_\_\_\_

Final Pit: Sample location 4 point composite taken from pit sidewalls, Grab sample from pit  
 Closure Sampling: bottom center. 8" to 10" into pit side walls, 10" into pit bottom.  
 (in multiple samples, attach sample results and diagram of sample locations and depths) Sample depth 6'  
 Sample Date 8/21/97 Sample Time 2:30PM  
 Sample results

Soil:	Benzene	(ppm)	<u>ND</u>	Water:	Benzene	(ppb)	<u>NA</u>
	Total BTEX	(ppm)	<u>SIDE\18.3</u>		Toluene	(ppb)	<u>NA</u>
			<u>BTM\5.06</u>				
	Field Headspace	(ppm)	<u>68</u>		Ethylbenzene	(ppb)	<u>NA</u>
	TPH	(ppm)	<u>SIDE\1100</u>		Total Xylenes	(ppb)	<u>NA</u>
			<u>BTM\2800</u>				

HIT BEDROCK

Groundwater Sample: Yes \_\_\_\_\_ No XXX (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 9-14-98 PRINTED NAME JEFF CROSS

SIGNATURE Jeff Cross AND TITLE PROJECT MANAGER

AFTER REVIEW OF THE PIT CLOSURE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.

APPROVED: YES X NO \_\_\_\_\_ (REASON) \_\_\_\_\_

SIGNED: Ken C. McCall DATE: 11-13-98

# M W PETROLEUM/FARMINGTON DISTRICT PIT EXCAVATION AND CLOSURE REPORT

LOCATION JAT A118 # 17

PIT COUNT 2

Jicarilla Apache Tribal EPO/OCD/BLM  
Review and Approval  
OCD-BLM  
EPO Representative  
Date of Review

START:		PIT # 1 8/19/97			FINISH: PIT # 1 8/21/97			
DIMENSIONS		PIT#2 8/21/9			PIT # 2 8/21/97			
	W	L	D		W	L	D	CU YDS
Pit 1	22'	22'	3'	Pit 1	25'	25'	6'	92
Pit 2	15'	15'	2'	Pit 2	18'	18'	6'	48
Pit 3				Pit 3				
	Pit 1 @ 6'	Pit 2 @ 6'	Pit 3 @		Pit 1 @ 6'	Pit 2 @ 6'	Pit 3 @	
P	Center	560	88.3	P	Center	560	88.3	
I	NW Corner	380	76.4	I	NW Corner	380	76.4	
D	NE Corner	500	75	D	NE Corner	500	75	
	SW Corner	530	50.1		SW Corner	530	50.1	
	SE Corner	460	51.2		SE Corner	460	51.2	

NOTES:

8/19/97 START EXCAVATION ON PIT # 1 MEDIUM STAINING, HEAVY ODOR.

8/20/97 CONTINUE EXCAVATING PIT # 1, PIT SIDES AND BOTTOM IS ROCK.

8/21/97 FINISH EXCAVATING PIT # 1, SIDES AND BOTTOM TO HARD TO EXCAVATE (ROCK)

PID READINGS ARE HIGH, TOOK SOIL SAMPLES DUE TO ROCK BOTTOM SIDES.

SPRAY PIT # 1 WITH 46-0-0 LIQUID FERTILIZER.

8/21/97 START EXCAVATION ON PIT # 2, LIGHT STAINING AND ODOR.

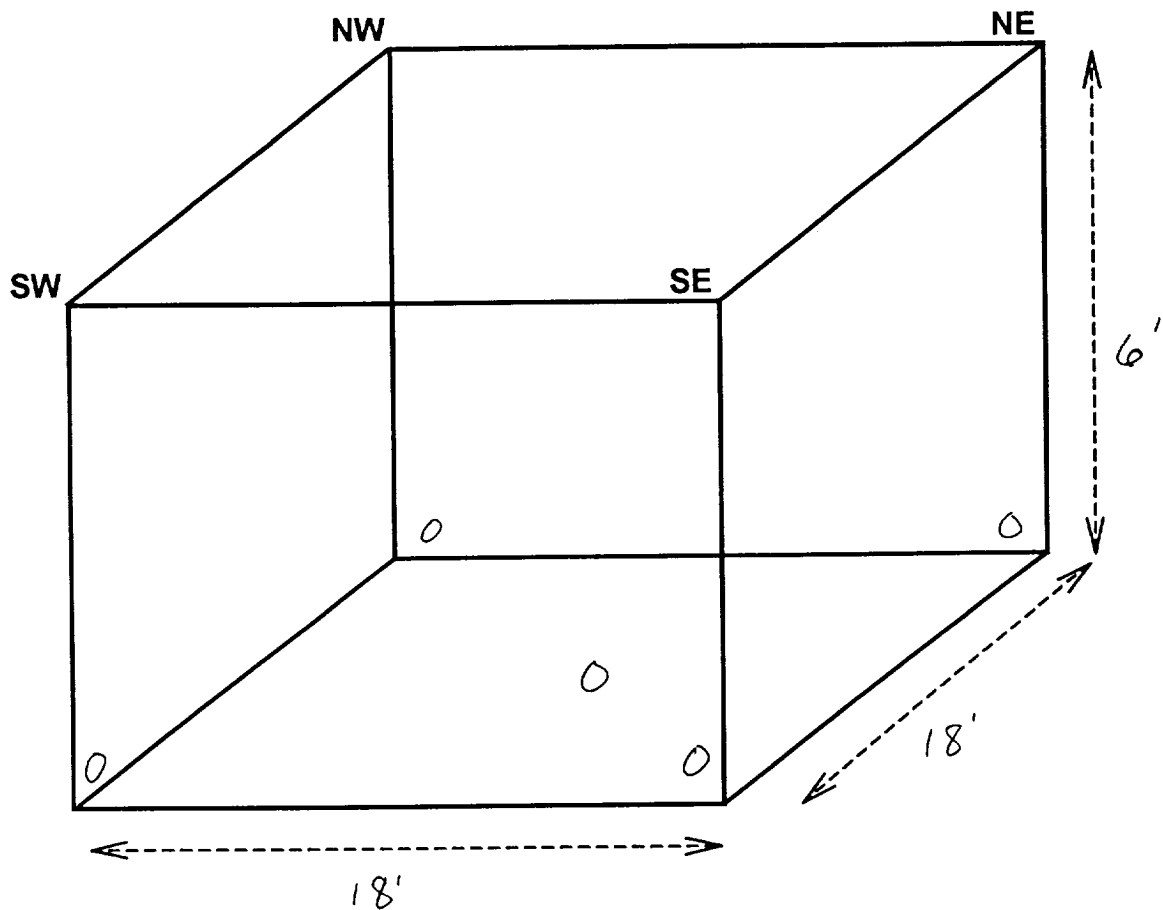
8/21/97 FINISH EXCAVATING PIT # 2, HIT BED ROCK AT 6', PID READINGS GOOD'

SPRAY PIT # 2 WITH 46-0-0 LIQUID FERTILIZER.

SAMP DATE		8/21/97	8/21/97						
	Pit 1 @ 6'	Pit 2 @ 6'	Pit 3 @	ANALYSIS RESULTS			PER LAB		Assaigai
P	Center	560	88.3	PIT	TPH	BETEX	WITNESS	DATE	
I	NW Corner	380	76.4	NO	SIDE\BTM	SIDE\BTM			
D	NE Corner	500	75	1	1000\11000	35.4\32.6	J.C.	8/28/97	
	SW Corner	530	50.1	2	1100\2800	18.3\5.06	J.C.	8/29/97	
	SE Corner	460	51.2	3					

RE-SAMPLE									
DATE:		Pit 1 @	Pit 2 @	Pit 3 @	ANALYSIS RESULTS			PER LAB	
P	Center				PIT	TPH	BETEX	WITNESS	DATE
I	NW Corner				NO	SIDE\BTM	SIDE\BTM		
D	NE Corner				1				
	SW Corner				2				
	SE Corner				3				

RE-SAMPLE									
DATE:		Pit 1 @	Pit 2 @	Pit 3 @	ANALYSIS RESULTS			PER LAB	
P	Center				PIT	TPH	BETEX	WITNESS	DATE
I	NW Corner				NO	SIDE\BTM	SIDE\BTM		
D	NE Corner				1				
	SW Corner				2				
	SE Corner				3				

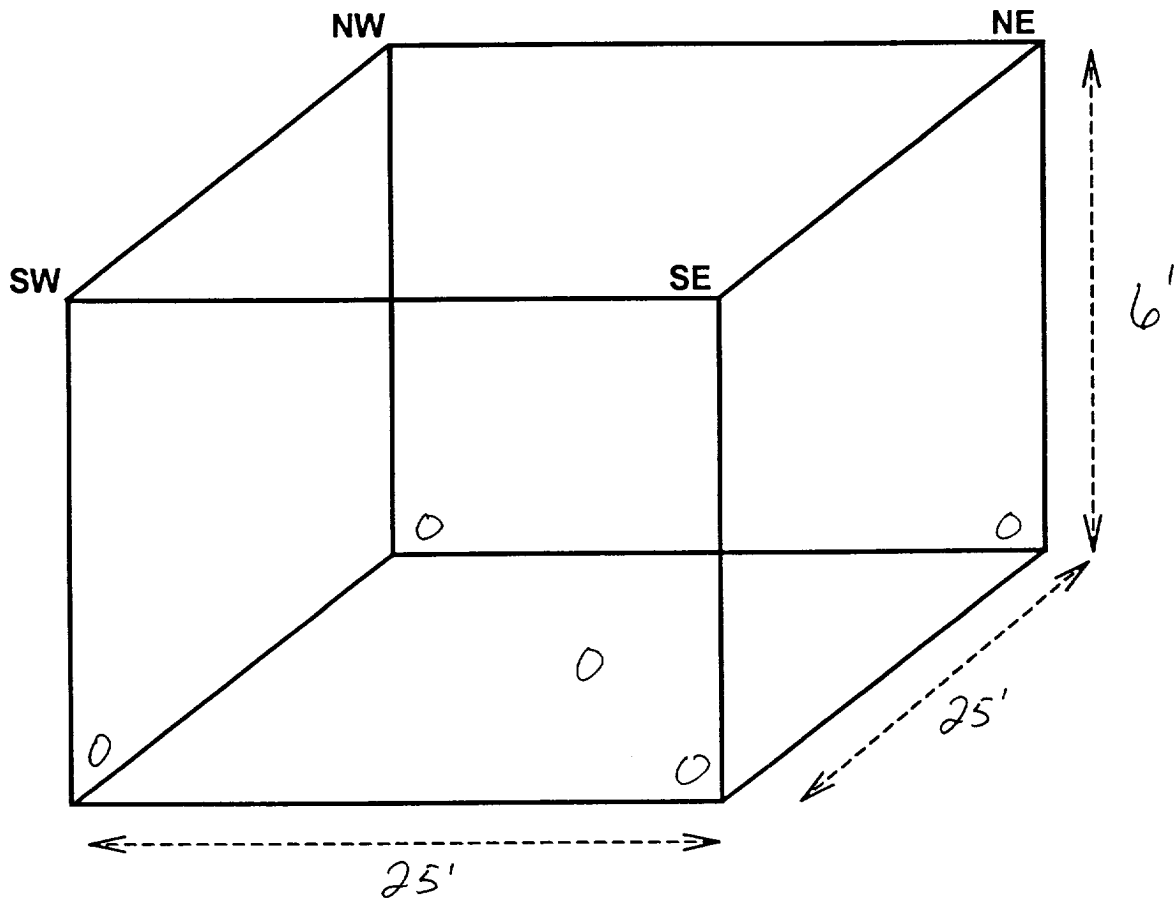


○ = SAMPLE AREA

WELL NAME JAT A118 # 17 PIT # 2

SAMPLE DATE 8/21/97

NOTES 4 POINT COMPOSITE SAMPLE TAKEN 8" TO 10" INTO PIT  
SIDEWALL  
1 POINT GRAB SAMPLE TAKEN 10" TO 12" INTO BOTTOM CENTER  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

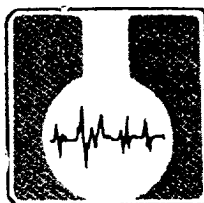


○ = SAMPLE AREA

WELL NAME JAT A118 # 17 PIT # 1

SAMPLE DATE 8/21/97

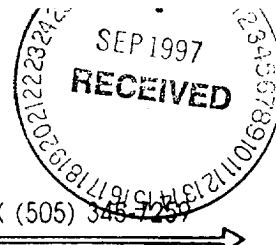
NOTES 4 POINT COMPOSITE SAMPLE TAKEN 8" TO 10" INTO PIT  
SIDEWALL  
1 POINT GRAB SAMPLE TAKEN 10" TO 12" INTO BOTTOM CENTER  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**ASSAIGAI  
ANALYTICAL  
LABORATORIES, INC.**

7300 Jefferson, N.E. • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

3332 Wedgewood, E-5 • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820



Report Generated:  
September 3, 1997 10:15

**CERTIFICATE OF ANALYSIS  
RESULTS BY SAMPLE**

SENT APACHE CORPORATION  
TO: 304 N. BEHREND  
FARMINGTON, NM 87401

WORKORDER # : 9708255  
WORK ID : JICARILLA PIT CLOSURES  
CLIENT CODE : APA01  
DATE RECEIVED : 08/27/97

ATTN: JEFF CROSS

Page: 1

Lab ID: 9708255-01A  
Sample ID: A118 #17 PIT #1 SIDES

Collected: 08/21/97 10:00:00  
Matrix: SOIL

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
BTEX/SW846 8020A						
Benzene	ND	mg/kg	0.0050	100	08/29/97	X97234
Toluene	2.1	mg/kg	0.0050	100	08/29/97	X97234
Ethylbenzene	3.4	mg/kg	0.0050	100	08/29/97	X97234
P-&m-Xylene	23	mg/kg	0.010	100	08/29/97	X97234
O-Xylene	6.9	mg/kg	0.0050	100	08/29/97	X97234

Lab ID: 9708255-01B  
Sample ID: A118 #17 PIT #1 SIDES

Collected: 08/21/97 10:00:00  
Matrix: SOIL

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
Diesel Range OG Soil/M8015						
Diesel Range OG in Soil	10000	mg/Kg	25	25	08/28/97	SDRO050

Lab ID: 9708255-02A  
Sample ID: A118 #17 PIT #1 BOTTOM

Collected: 08/21/97 10:30:00  
Matrix: SOIL

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
BTEX/SW846 8020A						
Benzene	ND	mg/kg	0.0050	100	08/29/97	X97234
Toluene	1.5	mg/kg	0.0050	100	08/29/97	X97234
Ethylbenzene	3.4	mg/kg	0.0050	100	08/29/97	X97234
P-&m-Xylene	21	mg/kg	0.010	100	08/29/97	X97234
O-Xylene	6.7	mg/kg	0.0050	100	08/29/97	X97234



Lab ID: 9708255-02B  
 Sample ID: A118 #17 PIT #1 BOTTOM

Collected: 08/21/97 10:30:00  
 Matrix: SOIL

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
Diesel Range OG Soil/M8015 Diesel Range OG in Soil	11000	mg/Kg	25	25	08/28/97	SDRO050

Lab ID: 9708255-03A  
 Sample ID: A118 #17 PIT #2 SIDES

Collected: 08/21/97 14:30:00  
 Matrix: SOIL

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
BTEX/SW846 8020A						
Benzene	ND	mg/kg	0.0050	100	08/29/97	X97234
Toluene	ND	mg/kg	0.0050	100	08/29/97	X97234
Ethylbenzene	2.1	mg/kg	0.0050	100	08/29/97	X97234
P-&m-Xylene	13	mg/kg	0.010	100	08/29/97	X97234
O-Xylene	3.2	mg/kg	0.0050	100	08/29/97	X97234

Lab ID: 9708255-03B  
 Sample ID: A118 #17 PIT #2 SIDES

Collected: 08/21/97 14:30:00  
 Matrix: SOIL

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
Diesel Range OG Soil/M8015 Diesel Range OG in Soil	1100	mg/Kg	25	25	08/28/97	SDRO050

Lab ID: 9708255-04A  
 Sample ID: A118 #17 PIT #2 BOTTOM

Collected: 08/21/97 15:00:00  
 Matrix: SOIL

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
BTEX/SW846 8020A						
Benzene	ND	mg/kg	0.0050	100	08/29/97	X97234
Toluene	ND	mg/kg	0.0050	100	08/29/97	X97234
Ethylbenzene	0.60	mg/kg	0.0050	100	08/29/97	X97234
P-&m-Xylene	3.6	mg/kg	0.010	100	08/29/97	X97234
O-Xylene	0.86	mg/kg	0.0050	100	08/29/97	X97234

Lab ID: 9708255-04B  
 Sample ID: A118 #17 PIT #2 BOTTOM

Collected: 08/21/97 15:00:00  
 Matrix: SOIL

TEST / METHOD	RESULT	UNITS	LIMIT	D_F	DATE ANAL	BATCH_ID
Diesel Range OG Soil/M8015 Diesel Range OG in Soil	2800	mg/Kg	25	25	08/28/97	SDRO050

William P. Biava

William P. Biava  
President

## **WORKORDER COMMENTS**

DATE : 09/03/97  
WORKORDER: 9708255

### **DEFINITIONS/DATA QUALIFIERS**

The following are definitions, abbreviations, and data qualifiers which may have been utilized in your report:

- ND = Analyte "not detected" in analysis at the sample specific detection limit.
- D\_F = Sample "dilution factor"
- NT = Analyte "not tested" per client request.
- B = Analyte was also detected in laboratory method QC blank.
- E = Analyte concentration (result) is an estimated value or exceeds analysis calibration range.
- LIMIT = The minimum amount of the analyte that AAL can detect utilizing the specified analysis.

Please Note: Multiply the "Limit" value (AAL's Detection Limit) by Dilution Factor (D\_F) to obtain the sample specific Detection Limit.

---

### **REPORT COMMENTS**

Please note that all BTEX analyses were performed by method SW846-8240.

---

**MASSAIGAI**  
**ANALYTICAL**  
**LABORATORIES**

3332 WEDGEWOOD  
EL PASO, TEXAS 79925  
(915) 593-6000

6411 LOCAL UNO  
CIUDAD JUAREZ, CHIHUAHUA MEXICO 32320

Contract / Purchase Order / Quote \_\_\_\_\_

Page 1 of 1

Samplers: (Signature) Leah Mubare

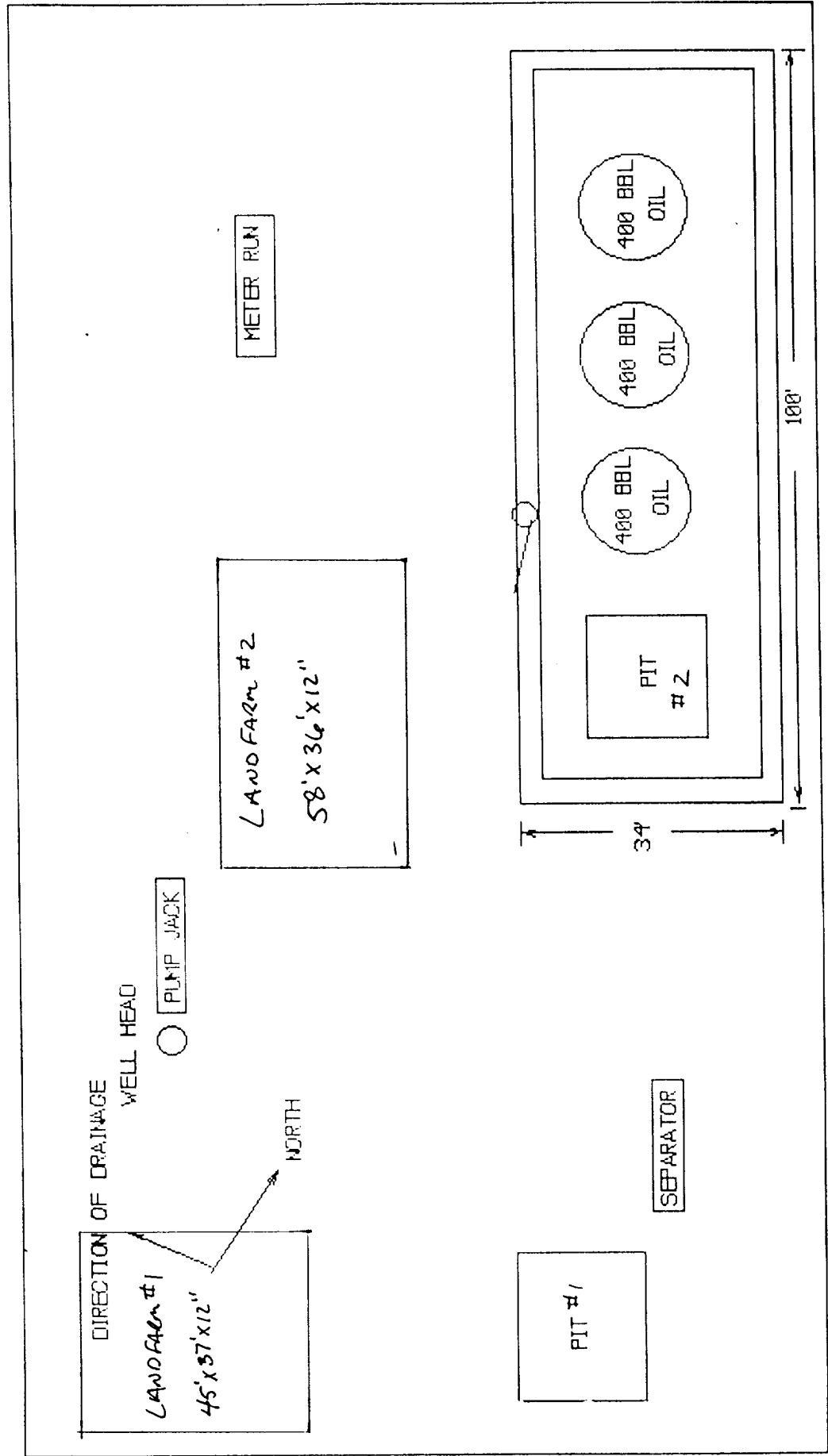
Method of Shipment: _____	Comments: _____
Shipment No. _____	
Special Instructions: _____	

Special Instructions.

Returned to customer

LABORATORY

Lessee # JAT A118  
 M W PETROLEUM JICARILLA APACHE 118 NUMBER 17  
 SECTION 26, TOWNSHIP 26N, RANGE 3W  
 RIO ARriba COUNTY, NEW MEXICO  
 Revised 6/2/97 MG



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: <u>M W PETROLUEM</u> Telephone <u>505-325-0318</u>	
Address: <u>2855 SOUTHSIDE RIVER ROAD /SUITE A/FARMINGTON, N.M. 87401-7947</u>	
Facility or Well Name: <u>JAT A118# 17 CELL # 1</u>	
Location: Unit or Qtr/Qtr Sec <u>SE/SE SEC 26 T 26N R 3W</u> County <u>RIO ARRIBA</u>	
Land Type <u>JIC. TRIBAL</u>	
Date Remediation Started: <u>8/19/97</u> Date Completed: <u>8/18/98</u>	
Remediation Method: Landfarmed <u>XXX</u> Approx. cubic yards <u>62</u>	
Composted _____	
Other <u>REMEDIATED SOIL TO BE SPREAD ON LOCATION.</u>	
Depth to Groundwater: (pts) <u>0</u>	<b>Final Closure Sampling</b> Sampling Date: <u>8/18/98</u> Time: <u>10:45AM</u> Sample Results: Field Headspace (ppm) <u>0</u> TPH (ppm) <u>1600</u> Method <u>M8015</u> Other <u>BTEX \ SW846 , 8020A (ND)</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>	
<b>RANKING SCORE (TOTAL POINTS)</b> <u>0</u>	
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF	
DATE: <u>9/14/98</u>	PRINTED NAME <u>JEFF CROSS</u>
SIGNATURE <u>Jeff Cross</u>	TITLE <u>PROJECT MANAGER</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 <u>X</u> NO _____ (REASON) _____	
SIGNED: <u>Ken C. Mando</u> DATE: <u>11-13-98</u>	

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: <u>M W PETROLUEM</u> Telephone <u>505-325-0318</u>	
Address: <u>2855 SOUTHSIDE RIVER ROAD /SUITE A/FARMINGTON, N.M. 87401-7947</u>	
Facility or Well Name: <u>JAT A118# 17 CELL # 2</u>	
Location: Unit or Qtr/Qtr Sec <u>SE/SE SEC 26 T 26N R 3W</u> County <u>RIO ARRIBA</u>	
Land Type <u>JIC. TRIBAL</u>	
Date Remediation Started: <u>8/21/97</u> Date Completed: <u>8/18/98</u>	
Remediation Method: Landfarmed <u>XXX</u> Approx. cubic yards <u>78</u>	
Composted _____	
Other <u>REMEDIATED SOIL TO BE PUT BACK IN PIT.</u>	
Depth to Groundwater: (pts) <u>0</u>	<b>Final Closure Sampling</b> Sampling Date: <u>8/18/98</u> Time: <u>11:00AM</u> Sample Results: Field Headspace (ppm) <u>0</u> TPH (ppm) <u>ND</u> Method <u>M8015</u> Other BTEX \ SW846 , 8020A ( ND )
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>	
<b>RANKING SCORE (TOTAL POINTS)</b> <u>0</u>	
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF	
DATE: <u>9/14/98</u> PRINTED NAME <u>JEFF CROSS</u>	
SIGNATURE <u>Jeff Cross</u> TITLE <u>PROJECT MANAGER</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 <u>X</u> NO _____ (REASON) _____	
SIGNED: <u>Ken C M...</u> DATE: <u>11-13-98</u>	

# M W PETROLEUM/FARMINGTON DISTRICT SOIL REMEDIATIONS STATUS REPORT

REMEDIATION SITE JAT A118# 17

\* AMOUNT OF SOIL UNDERGOING REMEDIATION 140 Yds.

CELL No. <u>1</u>	SampDATE <b>8/18/98</b>	TPH <b>1600</b>	BTEX <b>ND</b>
DIMENSIONS(LxWxH) <u>45' X 37' X 12"</u>			
CELL LOCATION (dir. from well head) <u>SOUTH EAST</u>			
* DATE BEGAN: <u>8/19/97</u>			
DATE TERMINATED (TPH <5,000 ppm/BTEX< 50 ppm/Benzene < 10 ppm) <u>8/18/98</u>			
CELL No. <u>2</u>	SampDATE <b>8/18/98</b>	TPH <b>ND</b>	BTEX <b>ND</b>
DIMENSIONS(LxWxH) <u>58' X 36' X 12"</u>			
CELL LOCATION (dir. from well head) <u>NORTH</u>			
* DATE BEGAN: <u>8/21/97</u>			
DATE TERMINATED (TPH <5,000 ppm/BTEX< 50 ppm/Benzene < 10 ppm) <u>8/18/98</u>			
CELL No. <u>3</u>	SampDATE	TPH	BTEX
DIMENSIONS(LxWxH)			
CELL LOCATION (dir. from well head)			
* DATE BEGAN:			
DATE TERMINATED (TPH <5,000 ppm/BTEX< 50 ppm/Benzene < 10 ppm)			
REMEDICATION RECORD: (Date, Treatment, Tilling)			
8/25/97 TREAT SOIL CELLS WITH 46-0-0 FERTILIZER,WATER,PLOW AND TILL SOIL,			
9/23/97 PLOW AND TILL SOIL.			
4/22/98 PLOWED SOIL CELLS.			
4/24/98 TILL SOIL CELLS.		7/23/98 TILL SOIL CELLS.	
5/19/98 PLOWED SOIL CELLS.		8/4/98 WATER,PLOW AND TILL SOIL CELLS.	
5/20/98 TILL SOIL CELLS.		8/17/98 PLOW AND TILL SOIL CELLS.	
6/12/98 WATER,PLOW AND TILL SOIL CELLS.			
7/18/98 PLOW SOIL CELLS.			

From excavation reports.

WELL NAME:

A118 #17 Cell #2

SAMPLE DATE:

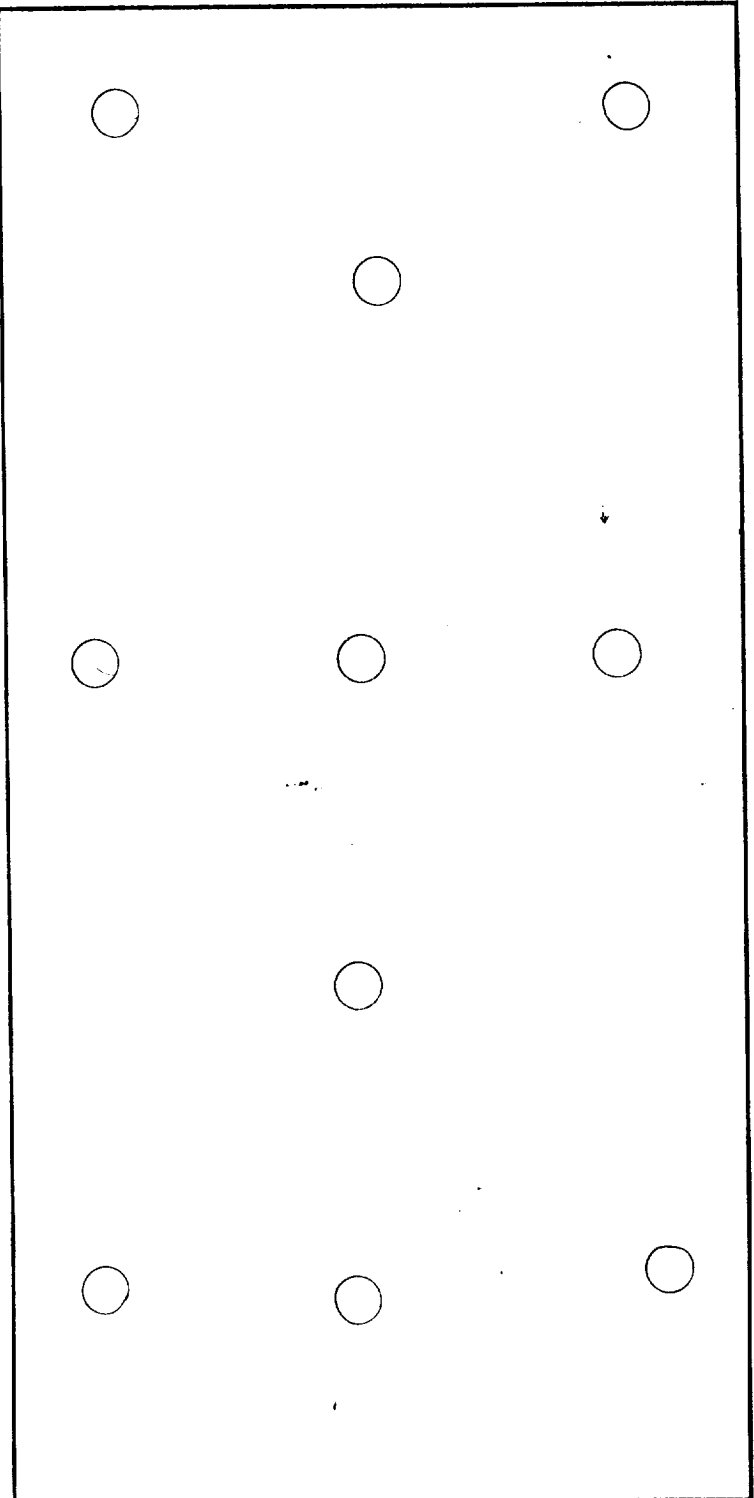
8-18-98

DIMENSIONS:

58' x 36' x 12"



= SAMPLE AREA



NOTES:

ALL SAMPLES TAKEN 10" TO 12" INTO CELL.

10 point composite sample

WELL NAME:

A118 #17 Cell #1

SAMPLE DATE:

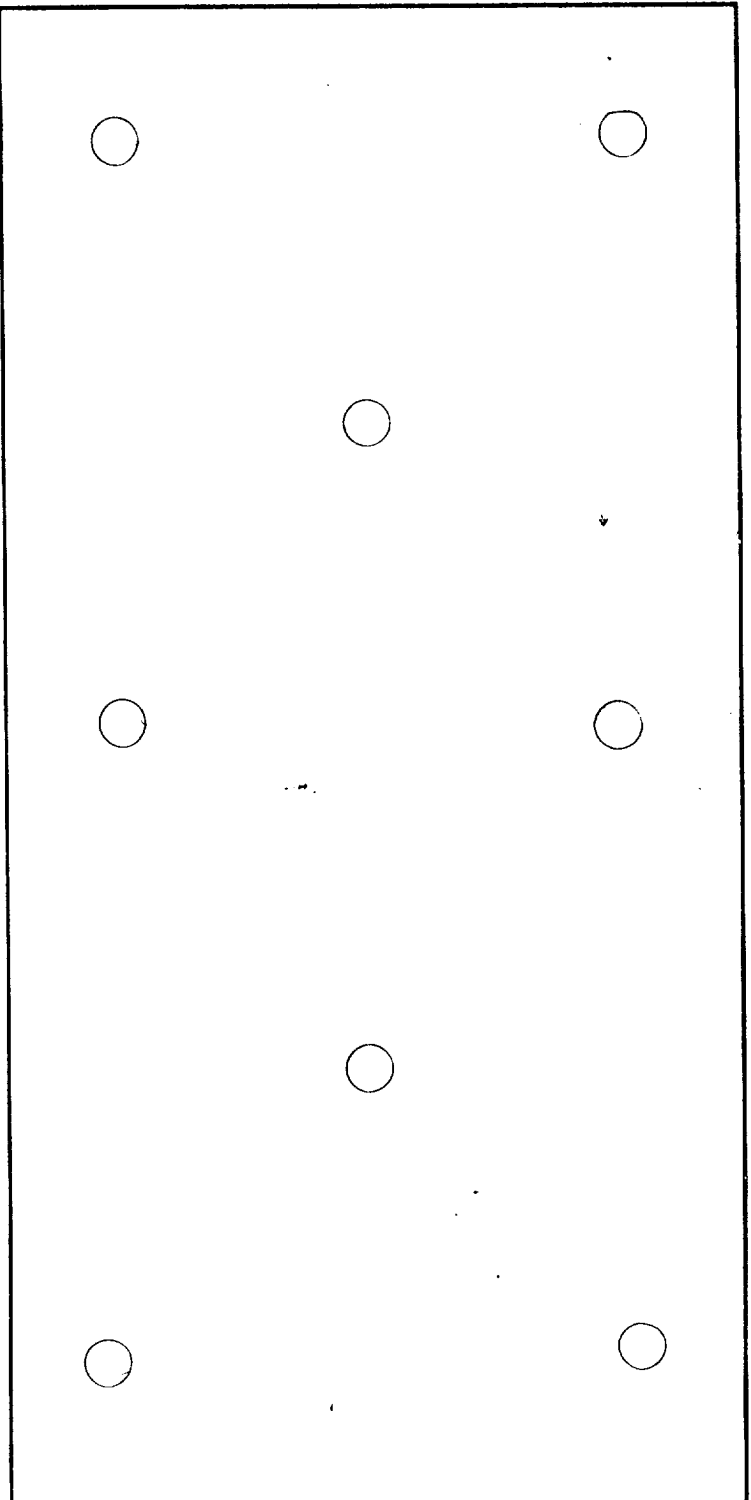
8-18-98

DIMENSIONS:

45' x 37' x 12"



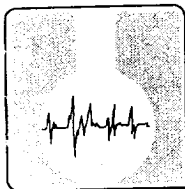
= SAMPLE AREA



NOTES:

ALL SAMPLES TAKEN 10" TO 12" INTO CELL.

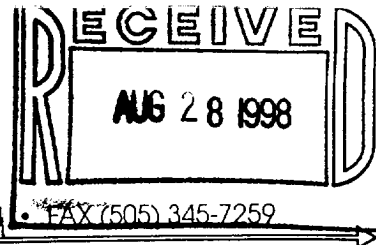
8 Point composite sample



# ASSAIGAI ANALYTICAL LABORATORIES, INC.

7300 Jefferson, NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

3332 Wedgewood, E-5 • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820  
127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558



APACHE CORPORATION  
attn: JEFF CROSS  
2855 SOUTHSIDE RIVER RD STE A  
FARMINGTON, NM 87401-7947

## \* explanation of codes

B	analyte detected in Method Blank
E	result is estimated
H	analyzed out of hold time
N	tentatively identified compound
S	subcontracted
1-9	see footnote

Assaigai Analytical Laboratories, Inc.

## Certificate of Analysis

Client: APACHE CORPORATION  
Project: 9808194 JICARILLA PIT CLOSURES

*William P. Biava*  
William P. Biava: President of Assaigai Analytical Laboratories, Inc.

Client Sample ID **A118 #17 CELL #1** Sample Matrix **SOIL** Sample Collected **08/18/98 10:45:00**

Fraction	QC Group	CAS #	Result	Units	Dilution Factor	Detection Limit	*	Sequence	Run Date
Test: SW846 8015A/8020A GRO / Purgeable Aromatics									
9808194-01A	X98392	71-43-2	Benzene	ND	mg / Kg	50	0.005	XG.1998.704-9	08/21/98
	X98392	100-41-4	Ethylbenzene	ND	mg / Kg	50	0.005	XG.1998.704-9	
	X98392	95-47-6	o-Xylene	ND	mg / Kg	50	0.005	XG.1998.704-9	
	X98392		p/m Xylenes	ND	mg / Kg	50	0.01	XG.1998.704-9	
	X98392	108-88-3	Toluene	ND	mg / Kg	50	0.005	XG.1998.704-9	
Test: SW846 8015A Diesel Range Organics by GC/FID									
9808194-01B	X98391		Diesel Range Organics	1600	mg / Kg	25	25	XG.1998.700-7	08/22/98

Client Sample ID **A118 #17 CELL #2** Sample Matrix **SOIL** Sample Collected **08/18/98 11:00:00**

Fraction	QC Group	CAS #	Result	Units	Dilution Factor	Detection Limit	*	Sequence	Run Date
Test: SW846 8015A/8020A GRO / Purgeable Aromatics									
9808194-02A	X98392	71-43-2	Benzene	ND	mg / Kg	50	0.005	XG.1998.704-10	08/21/98
	X98392	100-41-4	Ethylbenzene	ND	mg / Kg	50	0.005	XG.1998.704-10	
	X98392	95-47-6	o-Xylene	ND	mg / Kg	50	0.005	XG.1998.704-10	
	X98392		p/m Xylenes	ND	mg / Kg	50	0.01	XG.1998.704-10	
	X98392	108-88-3	Toluene	ND	mg / Kg	50	0.005	XG.1998.704-10	
Test: SW846 8015A Diesel Range Organics by GC/FID									
9808194-02B	X98391		Diesel Range Organics	ND	mg / Kg	25	25	XG.1998.700-8	08/22/98



Assaigai Analytical Laboratories, Inc.  
**Certificate of Analysis**

Client: **APACHE CORPORATION**  
Project: **9808194 JICARILLA PIT CLOSURES**

---

\*\*\* Sample specific analytical Detection Limit is determined by multiplying the sample Dilution Factor by the listed method Detection Limit. \*\*\*  
\*\*\* Results relate only to the items tested. \*\*\*



ALBUQUERQUE, NEW MEXICO 87109  
(505) 325-3964

3332 WEDGEWOOD  
EL PASO, TEXAS 79925  
(915) 593-6000

**MELQUIADES ALANIS**  
6-111 LOCAL UNO

~~Project Manager / Contact Jeff Cross~~

CIUDAD JUAREZ, CHIHUAHUA MEXICO 32320

Telephone No. (505) 774-6643

1

Fax No. (505) 774-6624

---



Samplers: (Signature) Jeff Woot

Remarks

\_\_\_\_\_

[illegible]

Relinquished by: Signature <u>Jeff Wynn</u> Printed <u>JEFF WYNN</u> Company <u>Apache Corp</u> Reason _____	Date <u>10/19/98</u>	Received by: Signature <u>Don. P. Bono</u> Printed <u>Don. P. Bono</u> Company <u>NAL</u> Reason <u>Delivery</u>	Relinquished by: Signature <u>Don. P.</u> Printed <u>Don. P.</u> Company <u>NAL</u> Reason <u>Analysis</u>
--	-------------------------	--	--

Date	2/2/92	Received by:	
Time	1745	Signature	
		Printed	
		Company	OB:00 B24-92
		Reason	

Method of Shipment _____ Shipment No. _____ Special Instructions: _____	Comments: _____ _____ _____ _____
---	--

After analysis, samples are to be:

☐ Disposed of (additional fee)

☐ Stored (30 days max)

☐ Stored over 30 days (additional fee)

☐ Returned to customer

LABORATORY