B0204

District I
P.O. Box 1980, Hobbs, NM
District II
P.O. Drawer DD, Artesia, NM 88211
District III
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

DEPUTY OIL & GAS INSPECTOR
MAR 12 1997

PIT REMEDIATION AND CLOSURE REPORT

Approved

Operator: Amoco Production Company **Telephone:** (505) - 326-9200

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name McCulley LS 2

Location: Unit or Qtr/Qtr Sec L Sec 14 T 28N R 9W County SAN JUAN

Pit Type: Separator ___ Dehydrator X Other ___

Land Type: BLM X, State ___, Fee ___, Other ___

Pit Location: (Attach diagram)
Pit dimensions: length 60', width 60', depth 30'
Reference: wellhead X, other ___
Footage from reference: 75'
Direction from reference: 20 Degrees ___ East North X of ___ West South ___

Depth To Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)
Less than 50 feet (20 points)
50 feet to 99 feet (10 points)
Greater than 100 feet (0 Points) 0

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DIST. 3

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

Date Remediation Started: _____ **Date Completed:** 1/20/95

Remediation Method: (Check all appropriate sections)
Excavation X Approx. cubic yards 3700
Landfarmed ___ Insitu Bioremediation X
Other _____

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility)
Onsite X Offsite _____

General Description Of Remedial Action:
Excavation - J. FINNEY CONDUCTED IN-SITU BIOREMEDIATION DURING THE WEEK 1/16 - 1/20/95 W/IN EXCAVATED PIT. THEN BACK FILL WITH CLEAN SOILS.

Ground Water Encountered: No X Yes ___ Depth _____

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)
Sample location see Attached Documents
Sample depth 30'
Sample date 1/9/95 Sample time 1130

Sample Results
Benzene(ppm) _____
Total BTEX(ppm) _____
Field headspace(ppm) 566
TPH 13,000 ppm

Ground Water Sample: Yes ___ No X (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 1/20/95
SIGNATURE B J Shaw
PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

CLIENT: Amoco

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

LOCATION NO: 80204
C.O.C. NO: _____

FIELD REPORT: PIT CLOSURE VERIFICATION

LOCATION: NAME: McCoy LS WELL #: 2 PIT: DEHY
QUAD/UNIT: L SEC: 14 TWP: 28N RNG: 9W BE: NM CNTY: SJ ST: NM
QTR/FOOTAGE: 1850'FSL x 1090'FWL CONTRACTOR: FRC x Son

DATE STARTED: 1-9-95
DATE FINISHED: _____
ENVIRONMENTAL SPECIALIST: JCB

EXCAVATION APPROX: 60 FT. x 60 FT. x 30 FT. DEEP. CUBIC YARDS: 3700

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: IN-SITU BIOREMED.

LAND USE: BLM Range LEASE: NM-04208 FORMATION: Ape/MV

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 15 FEET N20°E FROM WELLHEAD.

DEPTH TO GROUNDWATER: >100' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER >1000'

NMOCD RANKING SCORE: 0 NMOCD TPH CLOSURE STD: 5000 PPM

SOIL AND EXCAVATION DESCRIPTION: Unconsolidated, sand.

PIT DISPOSITION: TANK INSTALLED

IN SITU WORK CONDUCTED BY T. FINNEY BETWEEN 1/16 & 1/20/95, W/IN EXCAVATED PIT & EXCAVATED MATERIAL. (NV)

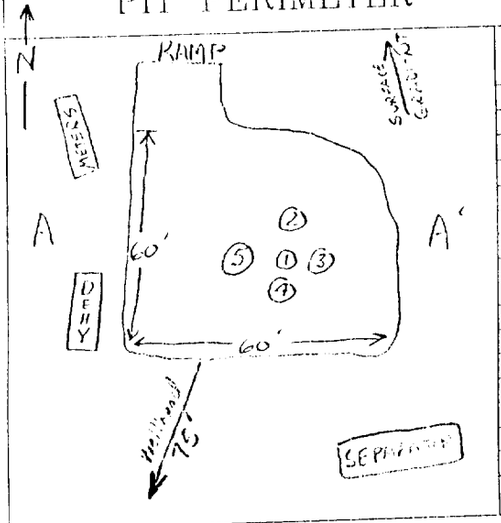
CONDITIONAL CLOSURE

FIELD 418 CALCULATIONS

SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
①@30'	TPH-13345	5	20	10:1	325	13,000

SCALE
0 FT

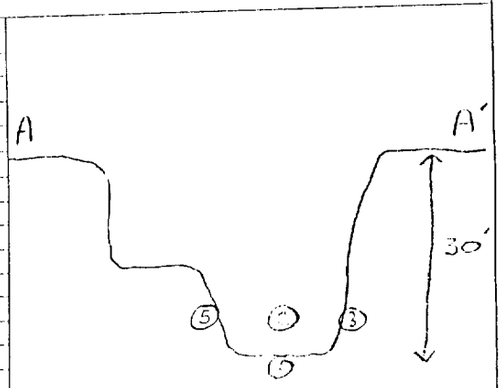
PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 Bottom @ 30'	5660
2 N Wall @ 25'	655
3 E Wall @ 25'	233
4 S Wall @ 20'	3.4
5 W Wall @ 25'	1408
LAB	SAMPLES

PIT PROFILE



TRAVEL NOTES: CALLOUT: 9:00 AM 1/9/95 ONSITE: 11:00 AM 1/9/95

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:	1 @ 30'	Date Analyzed:	01-09-95
Project Location:	McCulley LS 2	Date Reported:	01-09-95
Laboratory Number:	TPH-1345	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	13,000	200

ND = Not Detectable at stated detection limits.

QA/QC:

QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
512	472	8.13

*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: Dehydrator Pit - B0204

Nelson Velez
Analyst

R. L. O'Neill
Review

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

July 25, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. P-269-269-178

Mr. B.D. Shaw
Amoco Production Company
200 Amoco Court
Farmington, New Mexico 87401

RE: FINAL SAN JUAN BASIN PIT CLOSURE REPORTS

Dear Mr. Shaw:

The New Mexico Oil Conservation Division (OCD) has completed a review of Amoco Production Company's (Amoco) February 24, 1995 "AMOCO PRODUCTION COMPANY PIT CLOSURE VERIFICATIONS" which were submitted on behalf of Amoco by their consultant Blagg Engineering, Inc. This document contains "PIT REMEDIATION AND CLOSURE REPORTS" for 34 unlined pits in the San Juan Basin of Northwestern New Mexico.

The OCD's review of the above referenced document is addressed below:

A. The pit closure/soil remediation activities conducted at the sites listed below are approved as meeting the standards in effect at the time of closure.

1.	Allen A #1 (Tank pit)	Unit D, Sec. 01, T29N, R12W.
2.	A.L. Elliott D#2A (Separator pit)	Unit J, Sec. 11, T29N, R09W.
3.	A.L. Elliott D#2A (Tank pit)	Unit J, Sec. 11, T29N, R09W.
4.	Fred Feasel B#1 (Blow pit)	Unit A, Sec. 32, T28N, R10W.
5.	GCU #154 E (Separator pit)	Unit E, Sec. 27, T29N, R12W.
6.	R.P. Hargrave H#1 (Blow pit)	Unit B, Sec. 09, T27N, R10W.
7.	R.P. Hargrave H#1 (Separator pit)	Unit B, Sec. 09, T27N, R10W.
8.	E.J. Johnson C#1E (Tank pit)	Unit C, Sec. 21, T27N, R10W.
9.	Johnston LS #7 (Dehy pit)	Unit N, Sec. 11, T28N, R09W.
10.	C.A. McAdams C#1E (Separator pit)	Unit B, Sec. 05, T27N, R10W.
11.	Neal #2E (Dehy pit)	Unit F, Sec. 04, T31N, R11W.
12.	Neil A #8R (Dehy pit)	Unit H, Sec. 04, T31N, R11W.
13.	Neil LS #7A (Dehy pit)	Unit D, Sec. 33, T32N, R11W.
14.	Sullivan GC B#1 (Tank pit)	Unit B, Sec. 21, T32N, R10W.
15.	Sullivan GC B#1 (Separator pit)	Unit B, Sec. 21, T32N, R10W.

Please be advised that OCD approval does not relieve Amoco of liability if, in the future, remaining contaminants are found to pose a threat to surface water, ground water, human health or the environment. In addition, OCD approval does not relieve Amoco of responsibility for compliance with any other federal, state or local laws and/or regulations.

B. The pit remedial activities conducted at the sites listed below are satisfactory. However, according to the reports, onsite landfarming and/or composting actions are still continuing at the sites. Subsequently, the OCD cannot issue final closure approval at this time and approval of closure actions at these sites is denied. Please resubmit the closure report for these sites upon completion of the landfarming and/or composting activities. The final reports will include the results of the soil remediation levels achieved and the disposition of the remediated soils.

1.	Cole GC A#1 (Separator pit)	Unit K, Sec. 15, T29N, R09W.
2.	Cole GC A#1 (Blow pit)	Unit K, Sec. 15, T29N, R09W.
3.	Ealum GC #1A (Blow pit)	Unit E, Sec. 33, T32N, R10W.
4.	A.L. Elliott A#4 (Dehy pit)	Unit F, Sec. 11, T29N, R09W.
5.	A.L. Elliott D#2A (Separator pit)	Unit J, Sec. 11, T29N, R09W.
6.	Fred Feasel A#1 (Blow pit)	Unit I, Sec. 32, T28N, R10W.
7.	Federal A#1 (Separator pit)	Unit K, Sec. 32, T28N, R10W.
8.	Kutz Deep GC D#1 (Blow pit)	Unit A, Sec. 27, T28N, R10W.
9.	McDaniel GC A#1 (Dehy pit)	Unit H, Sec. 26, T29N, R10W.

C. The final pit remedial contaminant levels at the sites listed below are in excess of the OCD's recommended remediation levels. Subsequently, the OCD cannot issue final closure approval and approval of closure actions at these sites is denied. The OCD requests that Amoco submit a plan to address the remaining contamination at these sites. The plan will be submitted to the OCD Santa Fe Office by September 1, 1996 with a copy supplied to the OCD Aztec Office.

1.	Allen A#1 (Separator pit)	Unit D, Sec. 01, T29N, R12W.
2.	Barnes LS #4A (Tank pit)	Unit C, Sec. 26, T32N, R11W.
3.	GCU #163 (Blow pit)	Unit O, Sec. 26, T29N, R13W.
4.	GCU #163 (Separator pit)	Unit O, Sec. 26, T29N, R13W.

D. The final pit remedial contaminant levels at the sites listed below are in excess of the OCD's recommended remediation levels and onsite landfarming and/or composting actions are still continuing at the sites. Subsequently, the OCD cannot issue final closure approval and approval of closure actions at these sites is denied. The OCD requests that Amoco address the remaining contamination at these sites prior to resubmitting the reports for these sites upon completion of landfarming activities.

1.	Fred Feasel E#1 (Blow pit)	Unit K, Sec. 32, T28N, R10W.
2.	Fred Feasel L#1E (Blow/tank pit)	Unit I, Sec. 32, T28N, R10W.
3.	Fred Feasel L#1E (Separator pit)	Unit I, Sec. 32, T28N, R10W.
4.	Federal GC D#1 (Separator pit)	Unit A, Sec. 28, T28N, R10W.
5.	McCulley LS #2 (Dehy pit)	Unit L, Sec. 14, T28N, R09W.

E. Ground water at the site listed below is contaminated with petroleum related constituents in excess of New Mexico Water Quality Control Commission ground water standards and the extent of ground water contamination at the site has not been determined. Therefore, approval of this pit closure form is denied. The OCD requests that Amoco investigate the extent of contamination and, if necessary, remediate contaminated ground water pursuant to Amoco's November 21, 1995 ground water investigation/remediation work plan which was approved by the OCD on November 29, 1995.

1. Valencia GC B#1M (Separator pit) Unit K, Sec. 18, T29N, R09W.

To simplify the approval process for both Amoco and OCD, the OCD requests that Amoco submit all future pit closure reports only upon completion of all closure activities including onsite landfarming or composting of contaminated soils. The results of final remediation levels achieved during landfarming or composting and the disposition of the remediated soils should be included in the report.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Aztec District Office
Bill Liess, BLM Farmington District Office
Robert O'Neill, Blagg Engineering, Inc.

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

September 11, 1996

Mr. William C. Olson
State of New Mexico Oil Conservation Division
2040 South Pacheco
State Land Office Building
Santa Fe, NM 87505

RE: AMOCO Site Assessment Plan for the McCulley LS #2 Well site. Responding to NMOCD Letter dated July 25, 1996.

Dear Mr. Olson:

On behalf of Amoco Production Company, Blagg Engineering, Inc. respectfully submits the plan you requested concerning the pit closure of the following well site.

1. **McCulley LS #2 - Dehydrator pit**

If you have any questions regarding the information given, please contact us. Thank you for your cooperation and assistance.

Sincerely,
BLAGG ENGINEERING, INC.

Nelson Velez
Staff Geologist

Reviewed by:

Jeffrey C. Blagg, P.E.
President

Attachments: **Site Assessment Plan**

cc: Denny Foust, NMOCD, District Office, Aztec, NM
Buddy Shaw, Amoco Production Company, Farmington, NM

McCull-2.CVL

NV/nv

Well Name:	**McCulley LS 2**
Well Site location:	Unit L, Sec. 14, T28N, R09W
Pit Type:	Dehydrator Pit
Producing Formation:	Picture Cliff / Mesa Verde
Pit Category:	Area III
Horizonal Distance to Surface Water:	> 1000 ft.
Vicinity Groundwater Depth:	> 100 ft.

SITE ASSESSMENT PLAN

Pit remediation activities were terminated when practical vertical extent was reached with a trackhoe. Horizontal extent was ceased due to surrounding equipment and piping.

The following activities are intended to address vertical extent of contamination.

1. **Establish vertical extent of contamination at the pit center area utilizing a mobile drill rig. Samples will be collected for OVM headspace and TPH analysis. If OVM headspace is greater than 100 ppm and the TPH analysis is below 5000 ppm (closure standard for the well site), then a sample will be collected for benzene, toluene, ethylbenzene, and total xylenes (BTEX) analysis. TPH and/or BTEX analyses will utilize appropriate EPA methods and quality assurance / quality control.**

2. **At a minimum, soil samples from the boring will be taken at 5 foot intervals and/or at the change in soil type. Sampling will commence at 30 feet below ground surface at the pit center (total depth of the excavation during the original pit closure activity).**

3. **A boring log will be completed showing sampling depths and lithology.**

4. **The borehole will be properly plugged and abandoned upon completion by grouting the hole to the surface with cement containing 5% bentonite.**

5. **Submit a report of the findings. The report will contain:**

   a. **A description of all activities which occurred during the investigation including conclusions and/or recommendations.**

   b. **Summary tables listing all soil laboratory analytic results including copies of the laboratory analyses and quality assurance / quality control data.**

6. **Amoco will notify the OCD at least one week in advance of all tentative scheduled activities such that an OCD representative has the opportunity to witness the event(s) and/or split samples.**

7. **All documents submitted for approval will be submitted to the OCD Santa Fe Office with copies provided to the OCD Aztec District Office.**

Following completion of the site assessment, a pit closure plan will be prepared. This plan may include closure based on risk assessment or further remedial actions.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

November 12, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. P-269-269-214

Mr. B.D. Shaw
Amoco Production Company
200 Amoco Court
Farmington, New Mexico 87401

RE: SITE INVESTIGATION
MCCULLEY LS #2 PIT CLOSURE

Dear Mr. Shaw:

The New Mexico Oil Conservation Division (OCD) has completed a review of Amoco Production Company's (Amoco) September 11, 1996 "AMOCO SITE ASSESSMENT PLAN FOR THE MCCULLEY LS #2 WELL SITE. RESPONDING TO NMOCD LETTER DATED JULY 25, 1996." which was submitted on behalf of Amoco by their consultant Blagg Engineering, Inc. This document contains Amoco's work plan for determining the extent of contamination related to disposal of separator wastes in an unlined pit at the McCulley LS #2 well site in the San Juan Basin of Northwestern New Mexico.

The above referenced work plan is approved.

Please be advised that OCD approval does not relieve Amoco of liability if contamination exists which is beyond the scope of the work plan or; if the investigation fails to adequately define the extent of contamination related to Amoco's activities. In addition, OCD approval does not relieve Amoco of responsibility for compliance with any other federal, state or local laws and/or regulations.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Aztec District Office
Bill Liess, BLM Farmington District Office
Nelson Velez, Blagg Engineering, Inc.

Well Name:	**McCulley LS #2**
Well Site location:	Unit L Sec. 14, T28N, R9W
Pit Type:	Dehydrator Pit
Producing Formation:	Pictured Cliffs / Mesa Verde
Pit Category:	Non Vulnerable
Horizonal Distance to Surface Water:	> 1000 ft.
Vicinity Groundwater Depth:	> 100 ft.

RISK ASSESSMENT (non-vulnerable area)

Pit remediation activities were terminated when practical vertical extent was reached with a trackhoe. Horizontal extent was ceased due to surrounding equipment and piping.

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

1. Groundwater levels located on or close to the well pad are estimated to be at a much greater depth below presumed shallow sandstone bedrock based on topographic information.

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 **non-vulnerable area** and is approximately 1.75 miles southwest of the nearest vulnerable area boundary (Largo Canon Wash).

   (Refer to Blanco Quadrangle, New Mexico - San Juan County, 7.5 Minute Series (Topographic), provisional edition, 1985, (vulnerable area boundary developed by Mr. William C. Olson, Hydrogeologist, Environmental Bureau, New Mexico Oil Conservation Division).

5. Field headspace readings (OVM/PID) on Mesaverde type locations do not reflect direct correlation to total BTEX per USEPA Method 8020 concentrations. Listed below are a few typical AMOCO Mesaverde pit soil analyses comparing headspace to Benzene and total BTEX results.

LOCATION	HEADSPACE (ppm)	BENZENE (ppm)	TOTAL BTEX (ppm)
L.C. Kelly #6A	833	0.033	2.857
Johnston LS 7	998	0.017	24.985
Neil LS 7A	819	0.282	0.440

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

Based upon the information given, we conclude that the subsurface vertical impact to groundwater is very unlikely. AMOCO requests pit closure approval on this location.