District I
P.O. Box 1980, Hobbs, NM 88241-1980
District II
P.O. Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410

DEPUTY OIL & GAS INSPECTOR
DEC 03 1996

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

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 BARNES LS 4A

Location: Unit or Qtr/Qtr Sec C Sec 26 T 32 N R 11 W County SAN JUAN

Pit Type: Separator X Dehydrator X Other TANK

Land Type: BLM ___, State ___, Fee ___, Other COM. AGMT.

Pit Location: (Attach diagram)
Pit dimensions: length 45', width 45', depth 10'
Reference: wellhead X, other ___
Footage from reference: 35
Direction from reference: 45 Degrees ___ East North ___ of X West South X

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
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

RECEIVED
DEC - 3 1996
OIL CON. DIV.
DIST. 3

B0218

Dace Remediation Started: _____ **Date Completed:** 2-13-95

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 560

Landfarmed X Insitu Bioremediation ___

Other _____

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

General Description Of Remedial Action: _____

Excavation AS POSSIBLE - EQUIPMENT LIMITS LATERAL EXCAVATION.

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 6'

Sample date 2-13-95 Sample time _____

Sample Results

Benzene(ppm) _____

Total BTEX(ppm) _____

Field headspace(ppm) 1221

TPH 10,400 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 2-23-95

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: B0218
C.O.C. NO: —

FIELD REPORT: PIT CLOSURE VERIFICATION

LOCATION: NAME: BARNES LS WELL #: 4A PIT: DEHY/SEP/ MMT
QUAD/UNIT: C SEC: 26 TWP: 32 N RNG: 11W BM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: 1018' FNL, 1720' FWL CONTRACTOR: MOSS

DATE STARTED: 2-13-95
DATE FINISHED: —
ENVIRONMENTAL SPECIALIST: REJ

EXCAVATION APPROX. 45 FT. x 45 FT. x 10' FT. DEEP. CUBIC YARDS: 560
DISPOSAL FACILITY: ON SITE REMEDIATION METHOD: LANDFARM
LAND USE: RANGE LEASE: SF-078039 FORMATION: PC/MV

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 35 FEET S45°W 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: PIT DISPOSITION: ABANDONED

MOIST, BROWN, SANDY, SILTY, CLAY - SILTSTONE BOTTOM.
EXCAVATED TO HARD BOTTOM. ODOR + LIGHT STAIN REMAINS IN SIDEWALLS.
EQUIPMENT + PIPELINES PREVENTS FURTHER LATERAL EXCAVATION.

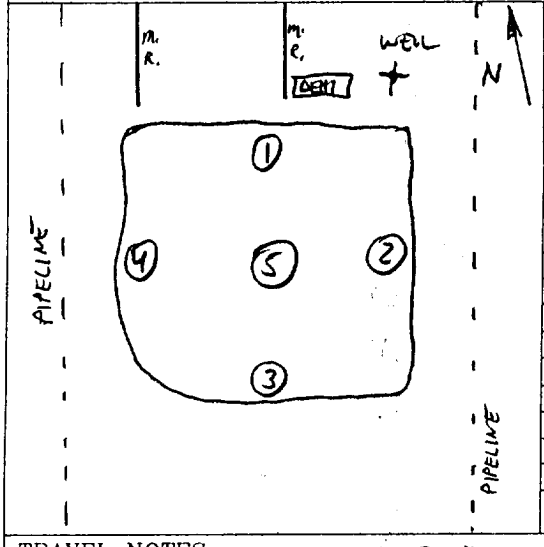
CONDITIONAL

FIELD 418.1 CALCULATIONS

SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
NS-6'	1369	10.0	20.0	10	520	10,400

SCALE
0 10 20 FT

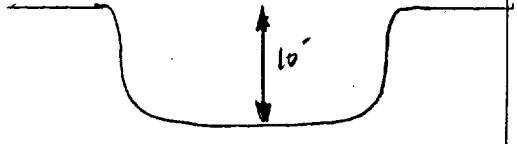
PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 NS-6'	1221
2 ES-6'	1114
3 SS-6'	974
4 WS-6'	1071
5 CB-10'	111
LAB	SAMPLES

PIT PROFILE



TRAVEL NOTES: CALLOUT: 2-12-95 ONSITE: 2-13-95 0830

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:	N. Side @ 6'	Date Analyzed:	2-13-95
Project Location:	Barnes LS 4A	Date Reported:	2-13-95
Laboratory Number:	TPH-1369	Sample Matrix:	Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	**10,400**	**100**

ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	4,760	4,400	8

*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: Separator/Dehydrator/Tank Pit - B0218

R. E. O'Neill
Analyst

Review

Well Name:	**Barnes LS #4A**
Well Site location:	Unit C, Sec. 26, T32N, R11W
Pit Type:	Dehydrator/Separator/Tank pit
Producing Formation:	Mesaverde
Pit Category:	Area III
Horizonal Distance to Surface Water:	> 1000 ft.
Vicinity Groundwater Depth:	> 100 ft.

RISK ASSESSMENT

Pit remediation activities were terminated when trackhoe encountered sandstone bedrock at 10 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 10 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 (double sidewall steel tank installed). Prior discharge into the pit is believed to be under 5 barrels per day.

4. 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 lateral impact from the earthen pit is very limited and that the sandstone bottom creates enough of a permeable 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.