3R - 118

REPORTS

DATE:

Feb. 17, 1999

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

February 17, 1999

RECEIVED
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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Mr. William C. Olson -Hydrogeologist
Environmental Bureau
New Mexico Oil Conservation Division
2040 Pacheco
State Land Building
Santa Fe, New Mexico 87505

RE: Cross Timbers Oil Co. (Amoco) Pit Closure/Groundwater Monitoring Reports
San Juan County, New Mexico

Dear Mr. Olson:

The attached reports on pit closure/groundwater monitoring at nineteen (19) previously owned Amoco well locations is being submitted for your review. These well sites have been acquired by Cross Timbers Co. as of December, 1997. The well names are listed on the following page of this correspondence. The reports for each individual well site are laid out in the following order;

1) Pit Closure documentation and/or a brief description of all activities which occurred during the investigation, sampling procedures, and/or interpretations, conclusions, and possible recommendations.
2) A summary spreadsheet (when applicable) containing laboratory BTEX, general chemistry (if applicable), and any other pertinent information.
3) When applicable: site and groundwater gradient maps, boring logs, and monitor well detail schematics.
4) Laboratory reports for each sampling event.
5) Quality Assurance/Quality Control data.

A copy of this report is also being submitted to Mr. Denny Foust at the Aztec NMOCD office. If you have any questions or comments concerning this report, please contact Blagg Engineering at 632-1199.

Respectfully submitted,
Blagg Engineering, Inc.

Nelson Velez.
Staff Geologist

Attachments: Pit Closure/Groundwater Monitoring Reports

xc: Denny Foust, NMOCD Aztec Office; Nina Hutton, Cross Timbers Oil Co.

NJV/njv FEB99-PC.COV

Cross Timbers Oil Company
Pit Closure/Groundwater Monitoring Reports
Well Sites being submitted, February 1999

1)	Abrams GC C # 1	Unit F, Sec. 25, T29N, R10W
2)	Abrams L # 1A	Unit I, Sec. 26, T29N, R10W
3)	Anderson GC A # 1	Unit C, Sec. 28, T29N, R10W
4)	Armenta GC A # 1	Unit D, Sec. 27, T29N, R10W
5)	Baca GC A # 1	Unit H, Sec. 26, T29N, R10W
6)	Baca GC A # 1A	Unit F, Sec. 26, T29N, R10W
7)	Chavez GC C # 1R	Unit J, Sec. 23, T29N, R10W
8)	Federal GC 3-1	Unit N, Sec. 23, T29N, R10W
9)	Garcia GC B # 1E	Unit M, Sec. 21, T29N, R10W
10)	Haney GC B # 1E	Unit M, Sec. 20, T29N, R10W
11)	Hare GC C # 1	Unit M, Sec. 25, T29N, R10W
12)	Hare GC C # 1E	Unit F, Sec. 25, T29N, R10W
13)	Hare GC F # 1	Unit G, Sec. 23, T29N, R11W
14)	Lefkovitz GC B # 1	Unit A, Sec. 25, T29N, R10W
15)	Masden GC # 1	Unit A, Sec. 28, T29N, R11W
16)	Romero GC A # 1	Unit K, Sec. 27, T29N, R10W
17)	Stedje GC # 1	Unit F, Sec. 27, T30N, R12W
18)	Stedje GC # 1E	Unit A, Sec. 27, T30N, R12W
19)	Trujillo GC A # 1	Unit C, Sec. 28, T29N, R10W

NJV/njv

FEB99-PC.COV

District I
P.O. Box 1980, Hobbs, NM
District II
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

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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

APPROVED
C4514

PIT REMEDIATION AND CLOSURE REPORT

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

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name LEFKOVITZ GC B 1

Location: Unit or Qtr/Qtr Sec A Sec 25 T 29N R 10W County SAN JUAN

Pit Type: Separator ___ Dehydrator ___ Other BLOW

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

Pit Location: (Attach diagram)
Pit dimensions: length 80', width 60', depth 37'
Reference: wellhead X, other ___
Footage from reference: 240
Direction from reference: 20 Degrees X East North ___ of ___ 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)	20
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):	20

Date Remediation Started: _____ **Date Completed:** 3/16/94

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 6800

Landfarmed X Insitu Bioremediation ___

Other _____

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

General Description Of Remedial Action: _____

Ground Water Encountered: No ___ Yes X Depth 37'

Final Pit:
Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location REFER TO "CLOSURE VERIFICATION" SHEET

Sample depth _____

Sample date _____ Sample time _____

Sample Results

Benzene(ppm) _____

Total BTEX(ppm) _____

Field headspace(ppm) _____

TPH _____

Ground Water Sample: Yes X No ___ (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE B[illegible] OF MY KNOWLEDGE AND BELIEF

DATE 4/29/94

SIGNATURE B J Shaw

PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

LEFKOVITZ GC B # 1 - Blow Pit
Ne/4 Ne/4 Sec. 25, T29N, R10W

Site Assessment Date:	**September 14, 1992 (Documentation Included)**
Pit closure Date:	**March 16, 1994 (Documentation Included)**
Monitor Well Installation Date:	**May 31, 1996**
Monitor Well Sampling Date:	**June 11, 1996**

Groundwater Monitor Well Sampling Procedures:

Groundwater samples were collected from site monitor wells following USEPA: SW-846 protocol. The samples were collected using new disposable bailers and placed in new laboratory supplied 40 ml glass vials with teflon septa caps. Samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) per USEPA Method 8020. When applicable, additional groundwater was collected and place in laboratory supplied 250 or 500 ml plastic containers and analyzed for general water quality per USEPA Method 600/4-79-020. The samples were preserved cool (BTEX samples also preserved with mercuric chloride) and hand delivered to a qualified laboratory for testing. Waste generated during monitor well sampling and development was disposed of utilizing the separator tank pit located on the well site.

Water Quality Information:

The BTEX results for all three (3) monitor wells during the June 11, 1996 sampling event were non detectable or below 25% of the New Mexico Water Quality Control Commission's allowable concentration for groundwater. The general water quality results revealed total dissolved solids within the blow pit area (MW #2) to be above the apparent background level (MW #1). However, the background level itself exceed the allowable concentration for domestic consumption. Groundwater from all monitor wells appear to be statistically equivalent for all general water quality parameters.

Summary and/or Recommendations:

Based on the enclosed documentation, the groundwater within the blow pit area appears to meet all the criteria for permanent closure. All aspects of the Amoco groundwater plan dated October 22, 1996 (approved by NMOCD with letter dated February 7, 1997) has been adhered to. Therefore, Amoco is requesting permanent closure status for this pit. Amoco acknowledges that it is not supplicating closure for the entire site.

94514

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

1847 / 1842

FIELD REPORT: SITE ASSESSMENT

JOB No: 92140
PAGE No: 1 of 1

PROJECT: PIT ASSESSMENTS & CLOSURE
CLIENT: AMOCO PRODUCTION COMPANY
CONTRACTOR: ENVIROTECH, INC.
EQUIPMENT USED: EXTENDAHOE

Fed. Lse No. SF-081061

DATE STARTED: 9-14-92
DATE FINISHED: 9-15-92
ENVIRO. SPCLT: JW
OPERATOR: BW
ASSISTANT: TC

LOCATION: LSE: Lefkovitz Gas Com. B WELL: No. 1 QD: SW 1/4 NE 1/4 G
SEC: 25 TWP: 29N RNG: 10W PM: NM CNTY: S.J ST: NM PIT: Blow

LAND USE: BLM
SURFACE CONDITIONS: EARTHEN PIT APPROX 3' DEEP

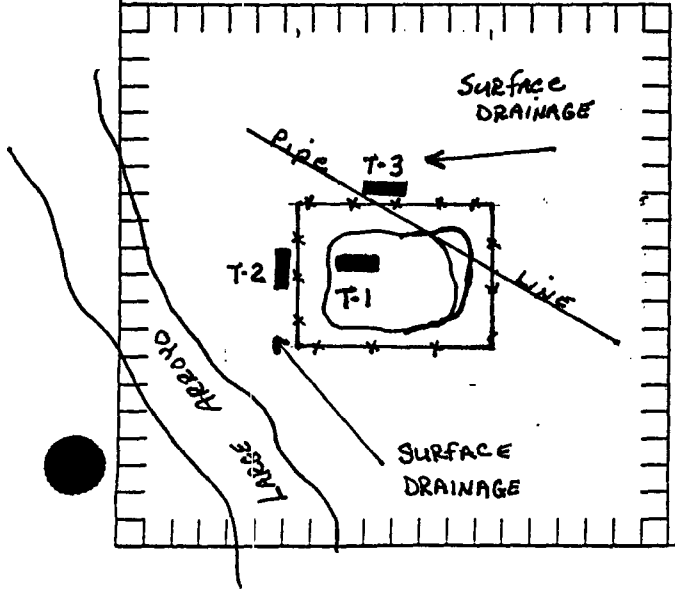
FIELD NOTES & REMARKS: PIT IS LOCATED APPROX. 300' SOUTH-EAST OF WELL HEAD. T-1 SOIL ~~WAS~~ STAINED ~~DARK~~ BLACK FROM SURFACE TO T.D. OF TH. T-2 SOIL IS SANDY BROWN FROM SURFACE TO T.D. T-3 IS SANDY BROWN FROM SURFACE TO T.D. SOIL STARTED SMELLING AT APPROX. 9' DOWN. NO DISCOLORATION OF SOIL. NORTH OF T-3 GROUND ELEV. RAISES APPROX 8' TO 10'. ELEV. DIFF ON EAST AND SOUTH OF PIT AREA ALSO.

SAMPLE INVENTORY:

SMPL ID:	SMPL TYPE:	LABORATORY ANALYSIS:
T-1 @ 15'	SOIL	TPH
T-3 @ 15	SOIL	TPH + BTEX

SCALE
0 10' 20' FEET

SITE DIAGRAM



TEST HOLE LOGS:

TH#: 1 SOIL TYPE:	SMPL TYPE:	OVM/TPH
SW	SOIL	212
SW	SOIL	175
SW	SOIL	191
T.D.	15'	

TH#: 2 SOIL TYPE:	SMPL TYPE:	OVM/TPH
SW	SOIL	0
SW	SOIL	0
SW	SOIL	0
TD	14'	

TH#: 3 SOIL TYPE:	SMPL TYPE:	OVM/TPH
SW	SOIL	6.7
SW	SOIL	200
SW	SOIL	214
TD	15'	

TH#: SOIL TYPE:	SMPL TYPE:	OVM/TPH

SOIL TYPE: C - Clay, M - Silt, S - Sand, G - Gravel Plasticity: L - None, H - Plastic Grading: P - Poorly, W - Well

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	T1 @ 15'	Date Reported:	09-21-92
Laboratory Number:	2583	Date Sampled:	09-14-92
Sample Matrix:	Soil	Date Received:	09-14-92
Preservative:	Cool	Date Analyzed:	09-16-92
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	387	5.0

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments: Lefkovitz Gas Com. B1 Blow Pit. 94514

Analyst

Review

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	T3 @ 15'	Date Reported:	10-01-92
Laboratory Number:	3009	Date Sampled:	09-15-92
Sample Matrix:	Soil	Date Received:	09-15-92
Preservative:	Cool	Date Analyzed:	10-01-92
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	12.2	5.0

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments: Lefkovitz Gas Com. B1 Blow Pit. 94514

Analyst

Review

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	T3 @ 15'	Date Reported:	10-06-92
Laboratory Number:	3009	Date Sampled:	09-15-92
Sample Matrix:	Soil	Date Received:	09-15-92
Preservative:	Cool	Date Extracted:	10-01-92
Condition:	Cool & Intact	Date Analyzed:	10-03-92
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	29.2
Toluene	ND	58
Ethylbenzene	ND	29.2
p,m-Xylene	346	97
o-Xylene	186	48.6

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	105 %
Bromfluorobenzene	100 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Lefkovitz Gas Com B No.1---Blow Pit---94514

Analyst

Review

R 80

ENVIROTECH Inc.

C4514

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

COCR 3431

FIELD REPORT: CLOSURE VERIFICATION

JOB No: 92140
PAGE No: 1 of 1

LOCATION: LEASE: LEFROUIT 2 GC WELL: 8 1 QD: NE 1/4 NE 1/4 (A)
SEC: 25 TWP: 29 N RNG: 10W BM: NM CNTY: SAN JUAN ST: NM PIT: BLOW.
CONTRACTOR: P. VELASQUEZ
EQUIPMENT USED: TRACKHOE

DATE STARTED: 3/16/94
DATE FINISHED: 3/16/94
ENVIRONMENTAL SPECIALIST: NV

SOIL REMEDIATION: QUANTITY: 80 X 60 X 37' ~~8~~
DISPOSAL FACILITY: LANDFARMED ON-SITE
LAND USE: RANGE
SURFACE CONDITIONS: UNKNOWN (SEE SITE ASSESSMENT FIELD REPORT).

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 80 YARDS S 20° E FROM WELLHEAD.

DEPTH TO GROUNDWATER: < 50'
NEAREST WATER SOURCE: > 2000'
NEAREST SURFACE WATER: > 2000'

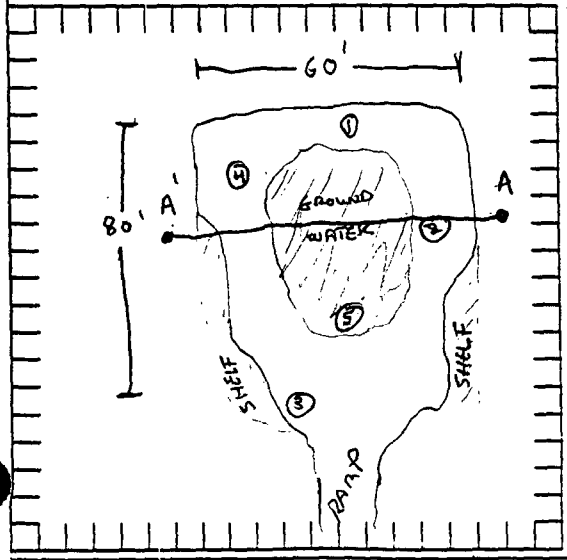
LAB SAMPLES
⑤ @ GW BTEX (8020)
③ @ 32' TPH (418.1) BTEX (8020)

FIELD 418.1 CALCULATIONS

SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SCALE
0 FEET
N

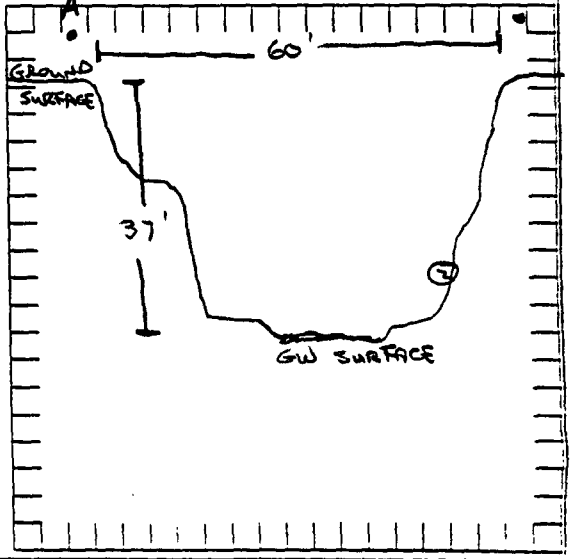
PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
① @ 31'	52.7
② @ 33'	17.5
③ @ 32'	709
④ @ 30'	3.9

PIT PROFILE



TRAVEL NOTES: CALLOUT: 3/16/94 ONSITE: 3/16/94

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	3 @ 32'	Date Reported:	03-18-94
Laboratory Number:	7061	Date Sampled:	03-16-94
Sample Matrix:	Soil	Date Received:	03-16-94
Preservative:	Cool	Date Extracted:	03-18-94
Condition:	Cool & Intact	Date Analyzed:	03-18-94
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	19.8
Toluene	124	49.5
Ethylbenzene	445	19.8
p,m-Xylene	6,300	29.7
o-Xylene	1,620	19.8

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99 %
Bromofluorobenzene	99 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Lefkovitz GC B1 Blow Pit C4514

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	3 @ 32'	Date Sampled:	03-16-94
Laboratory Number:	7061	Date Received:	03-16-94
Sample Matrix:	Soil	Date Analyzed:	03-27-94
Preservative:	Cool	Date Reported:	03-27-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	1,110	10.0

ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: Lefkovitz GC B1 Blow Pit C4514

Tony Tristano
Analyst

Review

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	5 @ GW (37')	Date Reported:	03-18-94
Laboratory Number:	7062	Date Sampled:	03-16-94
Sample Matrix:	Water	Date Received:	03-16-94
Preservative:	HgCl and Cool	Date Analyzed:	03-18-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	148	1.0
Toluene	570	2.5
Ethylbenzene	83	1.0
p,m-Xylene	1,410	1.5
o-Xylene	245	1.0

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	97 %
Bromofluorobenzene	99 %

Method: Method 5030A, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Lefkovitz GC B1 Blow Pit C4514

Analyst

Review

3431

CHAIN OF CUSTODY RECORD

C4514

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
Amoco 92140	BLOW PIT LEFKOVITZ GC 81	

Sampler: (Signature) Nelson Velez

Chain of Custody Tape No.

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (418.1)	BTEX (8020)					Remarks
(3) @ 32'	3/16/94	1040	7061	SOIL	1	✓	✓					
(5) @ GW (37')	3/16/94	1005	7062	WATER	2		✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	3/16/94	1309	Aleen L. Ojeman	3-16-94	1309
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615

AMOCO GROUNDWATER MONITOR WELL LABORATORY RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

LEFKOVITZ GC B # 1 – BLOW PIT
UNIT A, SEC. 25, T29N, R10W

REVISED DATE: JANUARY 13, 1997

FILENAME: (LE-2Q-96.WK3) NJV

								BTEX EPA METHOD 8020 (PPB)			
SAMPLE DATE	MONITOR WELL No:	D.T.W. (ft)	T.D. (ft)	TDS mg/L	COND. umhos	pH	PRODUCT (in)	Benzene	Toluene	Ethyl Benzene	Total Xylene
11-Jun-96	MW #1	30.98	35.39	4440	3400	6.9		ND	ND	ND	1.09
11-Jun-96	MW #2	29.84	35.39	5900	4800	6.9		ND	ND	ND	ND
11-Jun-96	MW #3	28.29	31.81	4420	3600	7.0		ND	2.63	ND	ND

GENERAL WATER QUALITY

AMOCO PRODUCTION COMPANY

LEFKOVITZ GC B # 1

SAMPLE DATE : JUNE 11, 1996

PARAMETERS		MW # 1	MW # 2	MW # 3	Units
GENERAL	LAB pH	7.3	7.4	7.3	s. u.
	LAB CONDUCTIVITY (25 DEG. CELCIUS)	5,920	8,410	6,210	umhos cm
	TOTAL DISSOLVED SOLIDS (180 DEG. CELCIUS)	4,440	5,900	4,420	mg / L
	TOTAL DISSOLVED SOLIDS (CALCULATED)	4,130	5,880	4,190	mg / L
ANIONS	TOTAL ALKALINITY AS CaCO3	215	287	239	mg / L
	BICARBONATE ALKALINITY (AS CaCO3)	215	287	239	mg / L
	CARBONATE ALKALINITY (AS CaCO3)	NA	NA	NA	mg / L
	HYDROXIDE ALKALINITY (AS CaCO3)	NA	NA	NA	mg / L
	CHLORIDE	20.0	42.5	90.0	mg / L
	SULFATE	2,770	3,670	2,720	mg / L
	NITRATE + NITRITE – N	NA	NA	NA	
	NITRATE – N	NA	NA	NA	
	NITRITE – N	NA	NA	NA	
CATIONS	TOTAL HARDNESS AS CaCO3	1,440	1,300	1,410	mg / L
	CALCIUM	550	435	508	mg / L
	MAGNESIUM	16.9	42	35.1	mg / L
	POTASSIUM	6.00	6.00	6.00	mg / L
	SODIUM	640	1,500	680	mg / L
DATA VALIDATION					ACCEPTANCE LEVEL
	CATION/ANION DIFFERENCE	4.71	4.67	4.98	+/– 5 %
	TDS (180):TDS (CALCULATED)	1.1	1.0	1.1	1.0 – 1.2

FIGURE 1

WELL HEAD

FENCE

PROD TANK

SEP

FENCE

TANK PIT

MW #3

MW #2

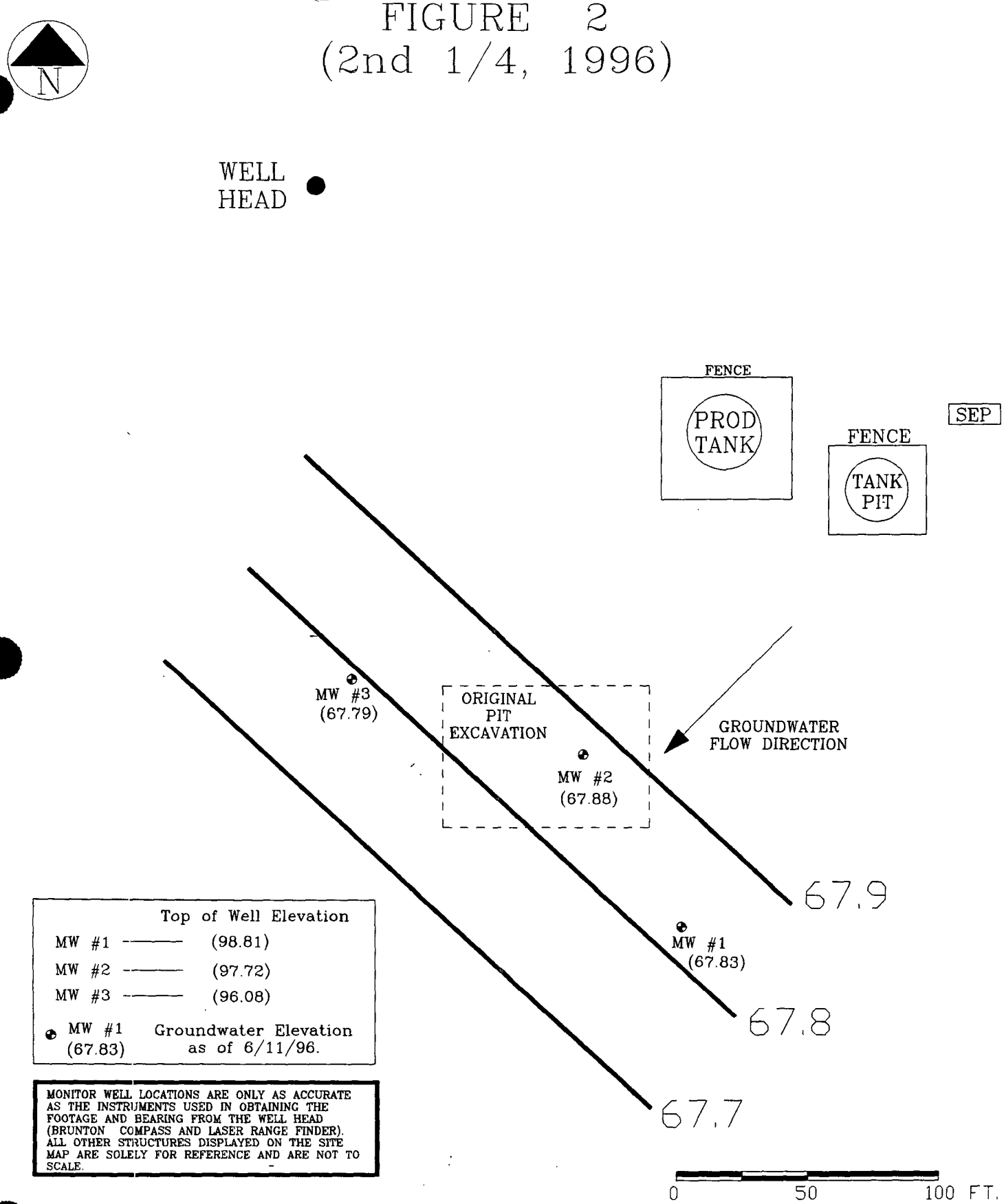
MW #1

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND ARE NOT TO SCALE.

0 50 100 FT.

AMOCO PRODUCTION COMPANY LEFKOVITZ GC B1 NE/4 NE/4 SEC. 25, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: MW INSTALL. DRAWN BY: NJV FILENAME: LEFKOV-B1	SITE MAP 6/96

FIGURE 2
(2nd 1/4, 1996)



Top of Well Elevation	
MW #1	(98.81)
MW #2	(97.72)
MW #3	(96.08)

MW #1 (67.83) Groundwater Elevation as of 6/11/96.

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND ARE NOT TO SCALE.

AMOCO PRODUCTION COMPANY LEFKOVITZ GC B1 NE/4 NE/4 SEC. 25, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: 1/4ly MONITOR. DRAWN BY: NJV FILENAME: LEFKOV-B1 REVISED: 2/10/97 NJV	GROUNDWATER GRADIENT MAP 6/96

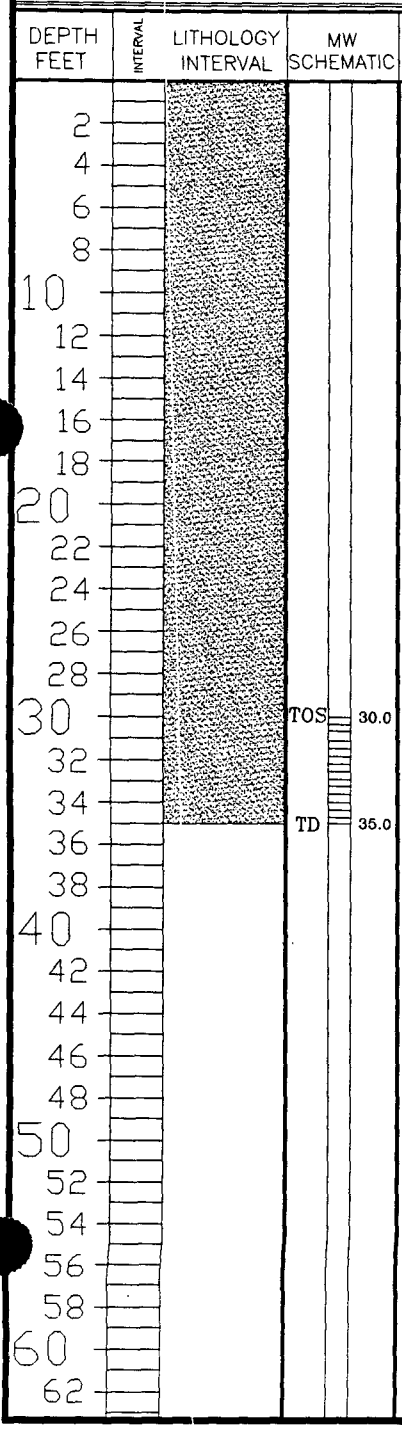
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

LOCATION NAME:	LEFKOVITZ GC B # 1
CLIENT:	AMOCO PRODUCTION COMPANY
CONTRACTOR:	BLAGG ENGINEERING, INC.
EQUIPMENT USED:	MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION:	S26E, 312 FEET FROM WELL HEAD.

BORING #.....	BH - 1
MW #.....	1
PAGE #.....	1
DATE STARTED	5/31/96
DATE FINISHED	5/31/96
OPERATOR.....	JCB
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 3.50 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SAND TO SILTY SAND CONTINUOUS THROUGHOUT ENTIRE BORING, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 35.0 FT. INTERVAL).

▼ GW DEPTH ON 6/11/96 = 30.98 FT. (APPROX.)

NOTES: ▒ - SAND TO SILTY SAND.
TOS - TOP OF SCREEN FROM GROUND SURFACE.
TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
GW - GROUND WATER.

DRAWING: LEF-B1-1	DATE: 1/28/97	DWN BY: NJV

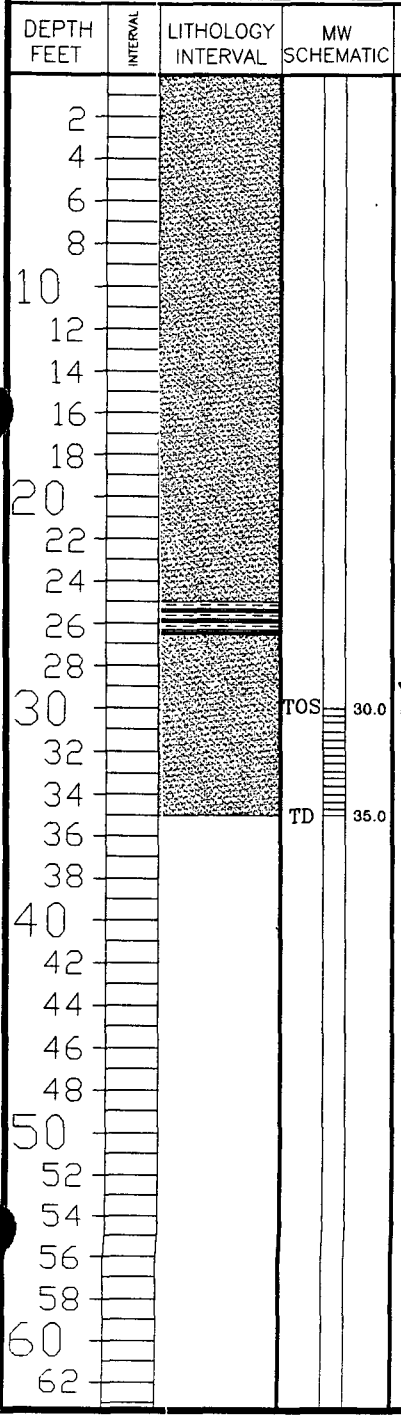
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

LOCATION NAME:	LEFKOVITZ GC B # 1
CLIENT:	AMOCO PRODUCTION COMPANY
CONTRACTOR:	BLAGG ENGINEERING, INC.
EQUIPMENT USED:	MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION:	S25E, 237 FEET FROM WELL HEAD.

BORING #.....	BH - 2
MW #.....	2
PAGE #.....	2
DATE STARTED	5/31/96
DATE FINISHED	5/31/96
OPERATOR.....	JCB
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING FLUSH WITH GROUND SURFACE.

DARK YELLOWISH BROWN SAND TO SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 25.0 FT. INTERVAL).

DARK YELLOWISH BROWN SILTY CLAY TO CLAY, COHESIVE TO PLASTIC, SLIGHTLY MOIST, FIRM TO VERY STIFF, NO APPARENT HYDROCARBON ODOR OBSERVED (25.0 - 26.5 FT. INTERVAL).

▼ GW DEPTH ON 6/11/96 = 29.84 FT. (APPROX.)

DARK YELLOWISH BROWN SAND TO SILTY SAND, NON COHESIVE, SATURATED, FIRM, NO APPARENT HYDROCARBON ODOR OBSERVED (26.5 - 35.0 FT. INTERVAL).

NOTES:
- SAND TO SILTY SAND.
- SILTY CLAY TO CLAY.
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

DRAWING: LEF-B1-2	DATE: 1/28/97	DWN BY: NJV

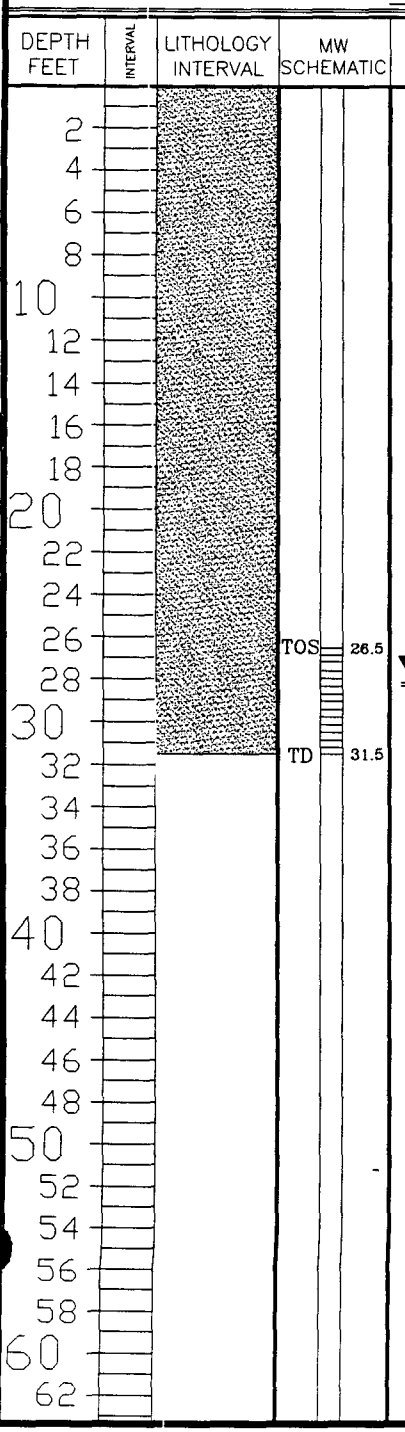
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

LOCATION NAME:	LEFKOVITZ GC B # 1
CLIENT:	AMOCO PRODUCTION COMPANY
CONTRACTOR:	BLAGG ENGINEERING, INC.
EQUIPMENT USED:	MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION:	S4E, 186 FEET FROM WELL HEAD.

BORING #.....	BH - 3
MW #.....	3
PAGE #.....	3
DATE STARTED	5/31/96
DATE FINISHED	5/31/96
OPERATOR.....	JCB
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 3.50 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SAND TO SILTY SAND CONTINUOUS THROUGHOUT ENTIRE BORING, NON COHESIVE, SLIGHTLY MOIST TO SATURATED (WATER TABLE), FIRM, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 31.5 FT. INTERVAL).

▼ GW DEPTH ON 6/11/96 = 28.00 FT. (APPROX.)

NOTES:
- SAND TO SILTY SAND.
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

DRAWING: LEF-B1-3	DATE: 1/28/97	DWN BY: NJV

MONITOR WELL #1

AMOCO PRODUCTION COMPANY

LEFKOVITZ GC B # 1

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE RIG

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

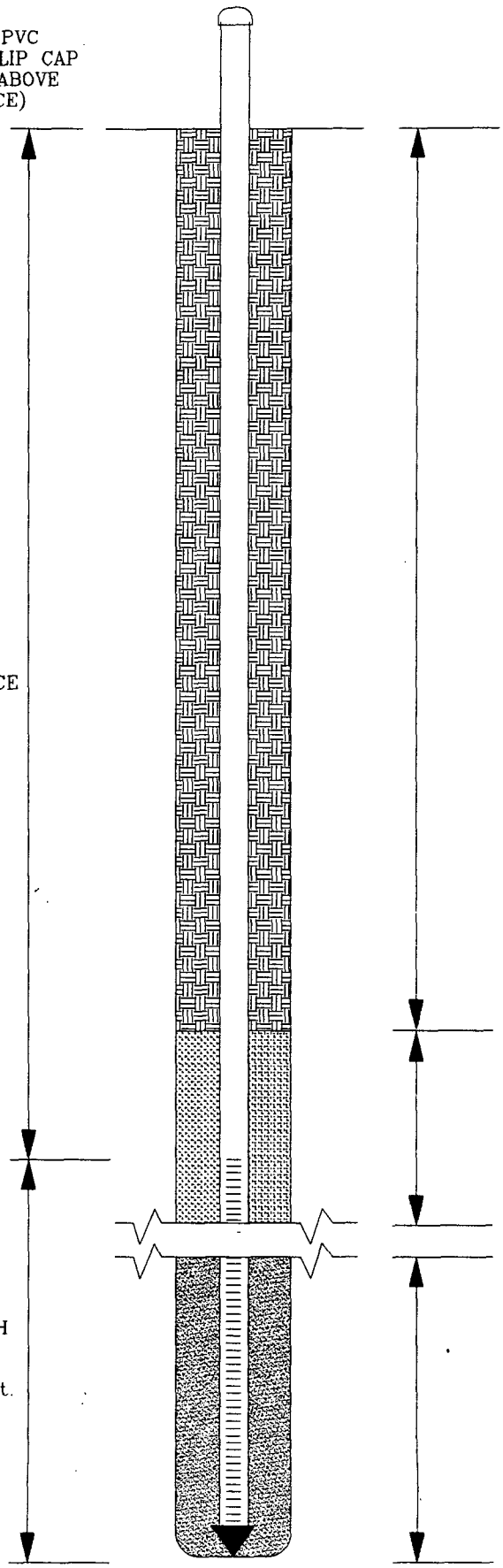
PHONE: (505) 632-1199

MONITOR WELL SCHEMATIC

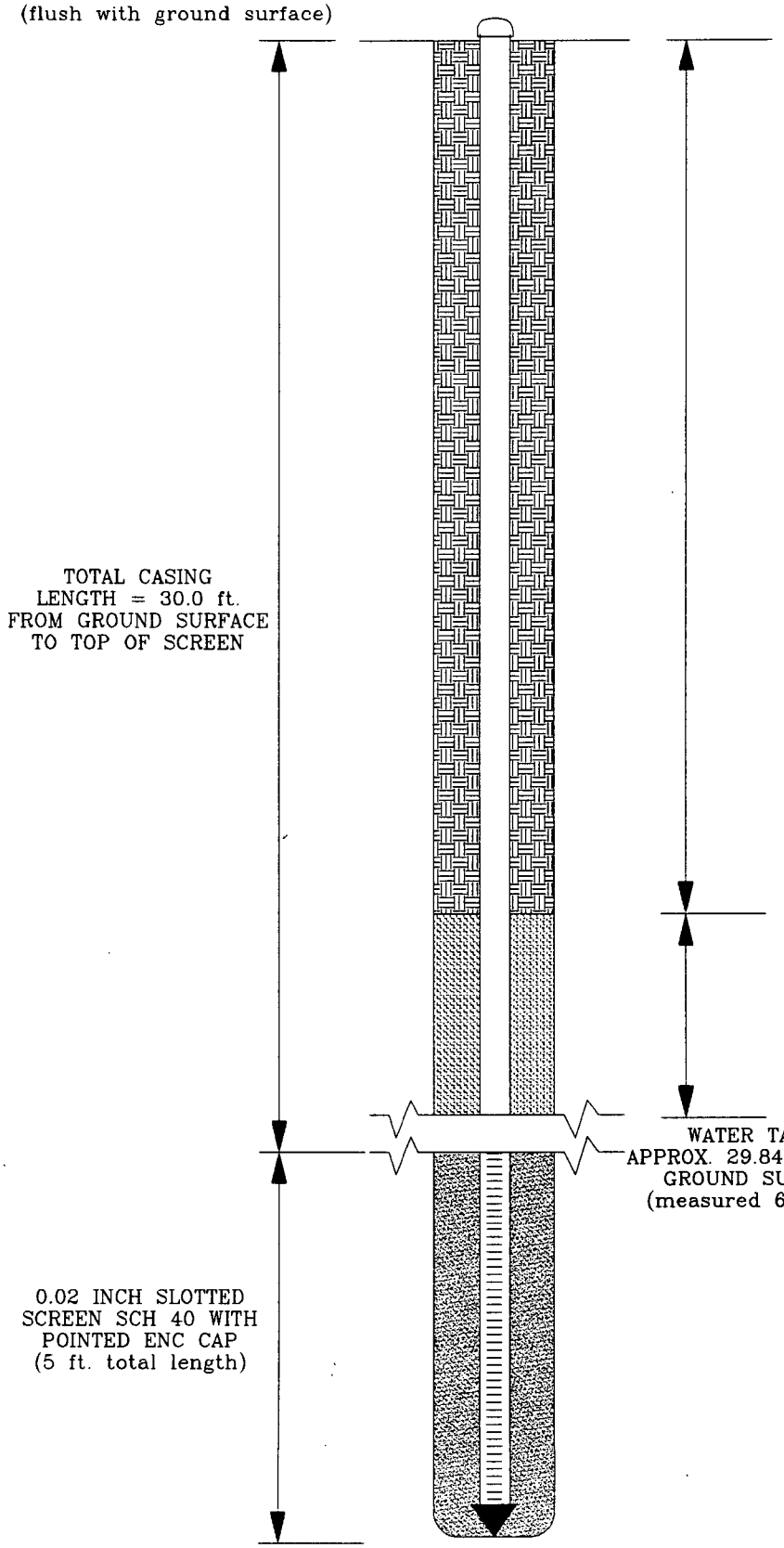
DRAFTED BY: NJV

DATE: MAR. '97

FILENAME: MW-



MONITOR WELL #2



AMOCO PRODUCTION COMPANY

LEFKOVITZ GC B # 1

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE RIG

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

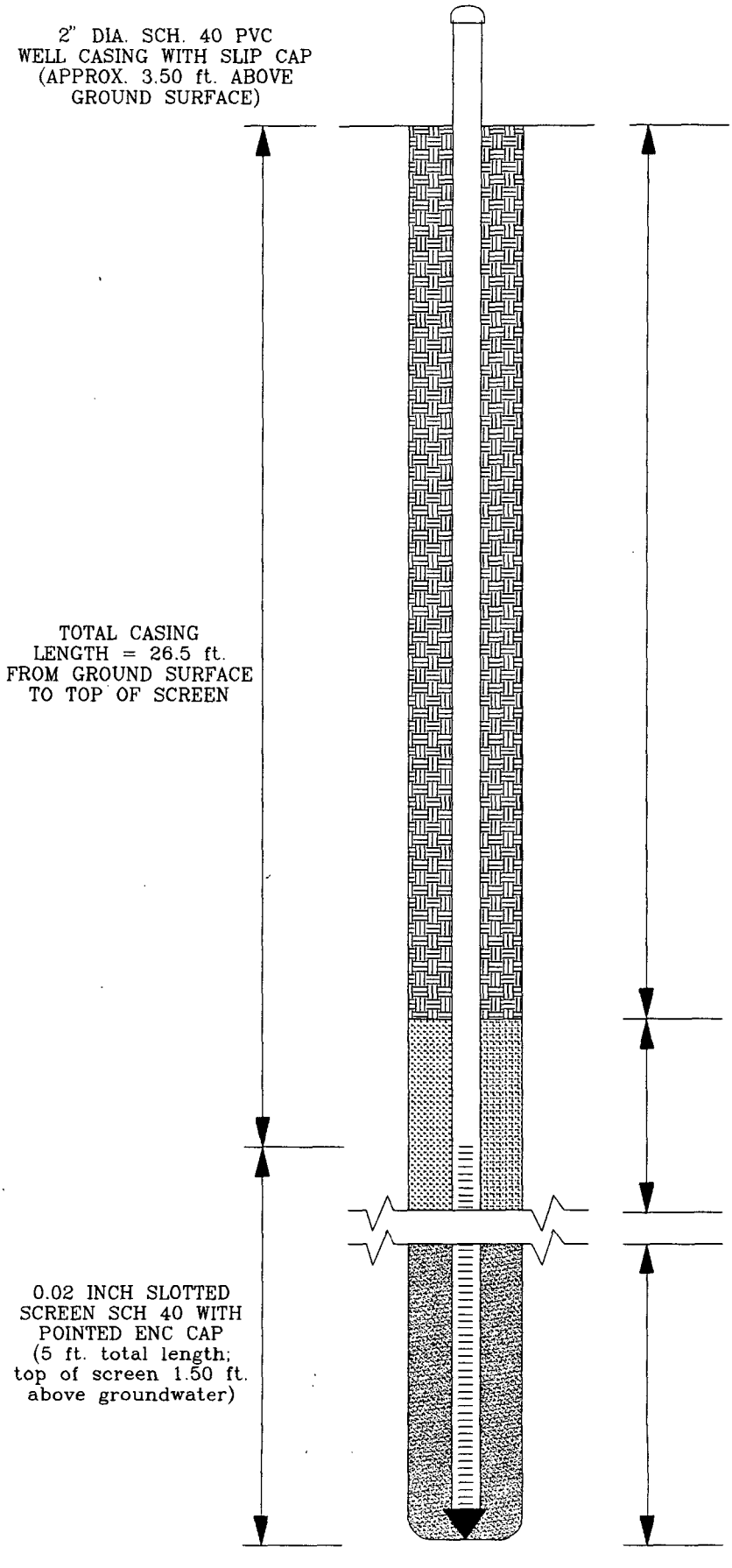
MONITOR WELL SCHEMATIC

DRAFTED BY: NJV

DATE: MAR. '97

FILENAME: MW-

MONITOR WELL #3



AMOCO PRODUCTION COMPANY

LEFKOVITZ GC B # 1

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH MOBILE RIG

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

MONITOR WELL SCHEMATIC

DRAFTED BY: NJV

DATE: MAR. '97

FILENAME: MW-

BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : AMOCO PRODUCTION CO.

CHAIN-OF-CUSTODY # : 2488

LEFKOVITZ GC B # 1 - BLOW PIT
UNIT A, SEC. 25, T29N, R10W

LABORATORY (S) USED : ANAITAS

Date : June 11, 1996

SAMPLER : REO

Filename : 06-11-96.WK3

PROJECT MANAGER : REO

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
1	98.81	67.83	30.98	35.39	1015	6.9	3,400	2.00	-
2	97.72	67.88	29.84	35.39	1040	6.9	4,800	2.00	-
3	96.08	67.79	28.29	31.81	1110	7.0	3,600	1.00	-

NOTES : Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)

Ideally a minimum of three (3) wellbore volumes:

1.25 " well diameter = 0.19 gallons per foot of water (or 24 oz.).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

2.00 " well diameter = 0.49 gallons per foot of water.

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

ANAITAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	Lefkovitz GC B1	Report Date:	06/24/96
Sample ID:	MW - 1	Date Sampled:	06/11/96
Lab ID:	3902	Date Received:	06/11/96
Sample Matrix:	Water	Date Analyzed:	06/21/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	1.09	1.00
o-Xylene	ND	0.50

Total BTEX	1.09

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	96	88 - 110%
Bromofluorobenzene	98	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

ANAITAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	Lefkovitz GC B1	Report Date:	06/24/96
Sample ID:	MW - 2	Date Sampled:	06/11/96
Lab ID:	3903	Date Received:	06/11/96
Sample Matrix:	Water	Date Analyzed:	06/21/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50
Total BTEX	ND	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	94	88 - 110%
Bromofluorobenzene	97	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

ANAITAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	Lefkovitz GC B1	Report Date:	06/24/96
Sample ID:	MW- 3	Date Sampled:	06/11/96
Lab ID:	3904	Date Received:	06/11/96
Sample Matrix:	Water	Date Analyzed:	06/21/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	2.63	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50
Total BTEX	2.63	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	91	88 - 110%
Bromofluorobenzene	95	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

ANAITAS ENVIRONMENTAL LABS

General Water Quality
Blagg Engineering, Inc.

Project ID:	Lefkovitz GC B1	Date Reported:	06/24/96
Sample ID:	MW - 1	Date Sampled:	06/11/96
Laboratory ID:	3902	Time Sampled:	10:15
Sample Matrix:	Water	Date Received:	06/11/96

Parameter		Analytical Result	Units
General	Lab pH	7.3	s.u.
	Lab Conductivity @ 25° C	5,920	µmhos/cm
	Total Dissolved Solids @ 180°C	4,440	mg/L
	Total Dissolved Solids (Calc)	4,130	mg/L
Anions	Total Alkalinity as $CaCO_3$	215	mg/L
	Bicarbonate Alkalinity as $CaCO_3$	215	mg/L
	Carbonate Alkalinity as $CaCO_3$	NA	mg/L
	Hydroxide Alkalinity as $CaCO_3$	NA	mg/L
	Chloride	20.0	mg/L
	Sulfate	2,770	mg/L
	Nitrate + Nitrite - N	NA	
	Nitrate - N	NA	
	Nitrite - N	NA	
Cations	Total Hardness as $CaCO_3$	1,440	mg/L
	Calcium	550	mg/L
	Magnesium	16.9	mg/L
	Potassium	6.00	mg/L
	Sodium	640	mg/L

Data Validation			Acceptance Level
	Cation/Anion Difference	4.71	+/- 5 %
	TDS (180):TDS (calculated)	1.1	1.0 - 1.2

Reference U.S.E.P.A. 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, 1983.
Standard Methods For The Examination Of Water And Wastewater, 18th ed., 1992.

Review

ANAITAS ENVIRONMENTAL LABS

General Water Quality
Blagg Engineering, Inc.

Project ID:	Lefkovitz GC B1	Date Reported:	06/24/96
Sample ID:	MW - 2	Date Sampled:	06/11/96
Laboratory ID:	3903	Time Sampled:	10:40
Sample Matrix:	Water	Date Received:	06/11/96

Parameter		Analytical Result	Units
General	Lab pH	7.4	s.u.
	Lab Conductivity @ 25° C	8,410	µmhos/cm
	Total Dissolved Solids @ 180°C	5,900	mg/L
	Total Dissolved Solids (Calc)	5,880	mg/L
Anions	Total Alkalinity as $CaCO_3$	287	mg/L
	Bicarbonate Alkalinity as $CaCO_3$	287	mg/L
	Carbonate Alkalinity as $CaCO_3$	NA	mg/L
	Hydroxide Alkalinity as $CaCO_3$	NA	mg/L
	Chloride	42.5	mg/L
	Sulfate	3,670	mg/L
	Nitrate + Nitrite - N	NA	
	Nitrate - N	NA	
	Nitrite - N	NA	
Cations	Total Hardness as $CaCO_3$	1,300	mg/L
	Calcium	453	mg/L
	Magnesium	42.3	mg/L
	Potassium	6.00	mg/L
	Sodium	1,500	mg/L

Data Validation			Acceptance Level
	Cation/Anion Difference	4.67	+/- 5 %
	TDS (180):TDS (calculated)	1.0	1.0 - 1.2

Reference U.S.E.P.A. 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, 1983.
Standard Methods For The Examination Of Water And Wastewater, 18th ed., 1992.

Review

ANAITAS ENVIRONMENTAL LABS

General Water Quality
Blagg Engineering, Inc.

Project ID:	Lefkovitz GC B1	Date Reported:	06/24/96
Sample ID:	MW - 3	Date Sampled:	06/11/96
Laboratory ID:	3904	Time Sampled:	11:10
Sample Matrix:	Water	Date Received:	06/11/96

Parameter		Analytical Result	Units
General	Lab pH	7.3	s.u.
	Lab Conductivity @ 25° C	6,210	µmhos/cm
	Total Dissolved Solids @ 180°C	4,420	mg/L
	Total Dissolved Solids (Calc)	4,190	mg/L
Anions	Total Alkalinity as $CaCO_3$	239	mg/L
	Bicarbonate Alkalinity as $CaCO_3$	239	mg/L
	Carbonate Alkalinity as $CaCO_3$	NA	mg/L
	Hydroxide Alkalinity as $CaCO_3$	NA	mg/L
	Chloride	90.0	mg/L
	Sulfate	2,720	mg/L
	Nitrate + Nitrite - N	NA	
	Nitrate - N	NA	
	Nitrite - N	NA	
Cations	Total Hardness as $CaCO_3$	1,410	mg/L
	Calcium	508	mg/L
	Magnesium	35.1	mg/L
	Potassium	6.00	mg/L
	Sodium	680	mg/L
Data Validation			Acceptance Level
	Cation/Anion Difference	4.98	+/- 5 %
	TDS (180):TDS (calculated)	1.1	1.0 - 1.2

Reference U.S.E.P.A. 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, 1983.
Standard Methods For The Examination Of Water And Wastewater, 18th ed., 1992.

Review

ANAITAS
ENVIRONMENTAL LABS

June 24, 1996

Bob O'Neill
Blagg Engineering, Inc.
PO Box 87
Bloomfield, NM 87413

Dear Mr. O'Neill:

Enclosed are the results for the analysis of the samples received June 11, 1996. The samples were from the Lefkovitz GC B1 site. Analyses for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) and general water quality parameters were performed on the samples, as per the accompanying chain of custody form.

Analysis was performed on the samples according to EPA Method 602, using a Hewlett-Packard 5890 gas chromatograph equipped with an OI Analytical purge and trap (model 4560) and a photoionization detector. Detectable levels of btex analytes were found in the samples, as reported.

Water parameters were determined for the samples according to the appropriate methodologies as outlined in Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992.

Quality control reports appear at the end of the analytical package and can be identified by title. Should you have any questions regarding the analysis, feel free to call.

Sincerely,

Denise A. Bohemier
Lab Director

807 SOUTH CARLTON • FARMINGTON, NM 87401• (505) 326-2395 PH • 326-2486 FAX

PURGEABLE AROMATICS

Quality Control Report

Method Blank Analysis

Sample Matrix:	Water	Report Date:	06/24/96
Lab ID:	MB35237	Date Analyzed:	06/21/96

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	99	88 - 110%
Bromofluorobenzene	99	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

Purgeable Aromatics

Duplicate Analysis

Lab ID:	3813Dup	Report Date:	06/24/96
Sample Matrix:	Water	Date Sampled:	06/07/96
Preservative:	Cool, $HgCl_2$	Date Received:	06/07/96
Condition:	Intact	Date Analyzed:	06/21/96

Target Analyte	Original Conc. (ug/L)	Duplicate Conc. (ug/L)	Acceptance Range (ug/L)
Benzene	9,940	9,930	8,150 - 11,700
Toluene	24,260	24,350	19,930 - 28,700
Ethylbenzene	962	957	632 - 1,290
m,p-Xylenes	8,070	8,110	NE
o-Xylene	2,180	2,140	NE

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.
NE - Duplicate acceptance range not established by the EPA.

	Surrogate	Percent Recovery	Acceptance Limits
Quality Control:	Trifluorotoluene	96	88 - 110%
	Bromofluorobenzene	99	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

Purgeable Aromatics

Matrix Spike Analysis

Lab ID:	3883Spk	Report Date:	06/24/96
Sample Matrix:	Water	Date Sampled:	06/10/96
Preservative:	Cool, $HgCl_2$	Date Received:	06/10/96
Condition:	Intact	Date Analyzed:	06/21/96

Target Analyte	Spike Added (ug/L)	Original Conc. (ug/L)	Spiked Sample Conc. (ug/L)	% Recovery	Acceptance Limits (%)
Benzene	10	ND	10.1	101%	39 -150
Toluene	10	0.58	10.4	98%	46 - 148
Ethylbenzene	10	ND	10.7	104%	32 - 160
m,p-Xylenes	20	ND	20.4	100%	NE
o-Xylene	10	ND	10.2	99%	NE

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.
NE - Spike acceptance range not established by the EPA.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	96	88 - 110%
Bromofluorobenzene	99	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

General Water Quality

Quality Control Report

Blagg Engineering, Inc.

Report Date: 6/24/96

Parameter	Analytical Result	Certified Value	Acceptance Range	Units
Laboratory pH	9.07	9.09	8.89 - 9.29	s.u.
Conductivity	1295	1220	1040 - 1400	µmhos/cm
Total Dissolved Solids	960	913	794 - 1030	mg/L
Total Alkalinity	191	180	160 - 200	mg/L
Chloride	135	138	128 - 148	mg/L
Sulfate	115	124	107 - 141	mg/L
Total Hardness	254	254	218 - 290	mg/L
Calcium	57.8	54.6	47.0 - 62.2	mg/L
Magnesium	NA	NA	NA	mg/L
Potassium	120	123	105 - 141	mg/L
Sodium	170	173	147 - 199	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983. Standard Methods For The Examination Of Water And Wastewater, 18th ed., 1992.

Comments:

Review

ANAITAS ENVIRONMENTAL LABS

807 S. CARLTON • FARMINGTON, NM 87401 • (505) 326-2395

CHAIN OF CUSTODY

6188

Page 1 of 1

PROJECT MANAGER:
Anaitas Lab I.D.:

Company: BLAGG
Address:

Phone: 632-1199
Fax:

Bill To: SAME
Company:
Address:

Sample ID	Date	Time	Matrix	Lab ID	Petroleum Hydrocarbons (418.1)	Gasoline / Diesel (mod. 8015)	Gasoline (GRO)	Aromatic HCs BTEX/MTBE (602 / 8020)	Chlorinated Hydrocarbons (8010)	SDWA Volatiles (502.1 / 503.1)	Chlorinated Pesticides / PCBs (608 / 8080)	Herbicides (615 / 8150)	Volatiles GC/MS (624 / 8240 / 8260)	Base / Neutral / Acid GC/MS (625 / 8270)	Polynuclear Aromatic Hydrocarbons (8100)	TCLP Extraction	Other (specify):	Cation / Anion	Specific Cations (specify):	Specific Anions (specify):	BOD / Fecal / Total Coliform	Solids: TDS / TSS / SS	Nutrients: NH4+ / NO2– / NO3– / TKN	Oil and Grease	Other (specify):	Priority Pollutants	RCRA Metals (Total)	RCRA Metals TCLP (1311)	Other (specify):	COMMENTS
MW-1	6-11	1015	WATER					✓										✓											
MW-2	"	1040	"					✓										✓											
MW-3	"	1110	"					✓										✓											

Project Information	Sample Receipt
Proj. #:	No. Containers:
Proj. Name: Amoco	Custody Seals: Y / N / NA
P. O. No:	Received Intact:
Shipped Via: DEL'D	Received Cold:

Required Turnaround Time (Prior Authorization Required for Rush)

LEFKOVITZ GC B1

Sampled By:	Relinquished By:	Relinquished By:
Signature: REG	Signature: REG	Signature:
Date: 6-11-96	Date: 6-11-96	Date:
Company: BEI	Company: BEI	Company:
Time: —	Time: 1430	Time:
Received By:	**Received By:**	**Received By:**
Signature:	Signature:	Signature: [signature]
Date:	Date:	Date: 6/11/96
Company:	Company:	Company: Anaitas
Time:	Time:	Time: 14:30

Please Fill Out Thoroughly.

Shaded areas for lab use only.

White/Yellow: Anaitas
Pink: Client

District I
P.O. Box 1980, Hobbs, NM
District II
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

RECEIVED
FEB 19 1999
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

APPROVED

PIT REMEDIATION AND CLOSURE REPORT

C4520

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

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name: LEFKOVITZ GC B 1

Location: Unit or Qtr/Qtr Sec A Sec 25 T 29N R 10W County SAN JUAN

Pit Type: Separator X Dehydrator ___ Other ___

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

Pit Location: (Attach diagram)
Pit dimensions: length 25', width 25', depth 14'
Reference: wellhead X, other ___
Footage from reference: 210'
Direction from reference: 56 Degrees X East North ___ of ___ 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)	20
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):	20

Date Remediation Started: _____ **Date Completed:** 3/17/94

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 325

Landfarmed X Insitu Bioremediation ___

Other _____

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

General Description Of Remedial Action: RISK ASSESSED.

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 REFER TO "CLOSURE VERIFICATION" SHEET

Sample depth _____

Sample date _____ Sample time _____

Sample Results

Benzene(ppm) _____

Total BTEX(ppm) _____

Field headspace(ppm) _____

TPH _____

Ground Water Sample: Yes ___ No X (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE B[illegible] OF MY KNOWLEDGE AND BELIEF

DATE 4/29/94

SIGNATURE BD Shaw

PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

R80

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

C4520
COCR 3434 3/17/94
COCR 3432 3/16/94

FIELD REPORT: CLOSURE VERIFICATION

JOB No: 92140
PAGE No: 1 of 1

LOCATION: LEASE: LEFKOVITZ GC WELL: 8 1 QD: NE/4 NE/4 (A)
SEC: 25 TWP: 29N RNG: 10W BM: NM CNTY: SAN JUAN ST: NM PIT: SEP
CONTRACTOR: P. VELASQUEZ
EQUIPMENT USED: TRACKHOE

DATE STARTED: 3/16/94
DATE FINISHED: 3/17/94
ENVIRONMENTAL SPECIALIST: NV

SOIL REMEDIATION: QUANTITY: 25' X 25' X 14' FED. LSE. SF-081061
DISPOSAL FACILITY: LANDFARMED ON-SITE
LAND USE: RANGE
SURFACE CONDITIONS: UNKNOWN (SEE SITE ASSESSMENT FIELD REPORT 94520).

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 70 YARDS S56°E FROM WELLHEAD.

DEPTH TO GROUNDWATER: < 50'
NEAREST WATER SOURCE: > 2000'
NEAREST SURFACE WATER: > 2000'

VENT PIPE PLACED AGAINST NORTH SIDEWALL. DUE TO SEP. EQUIP. CONTAMINATION ON NORTH SIDEWALL LEFT IN PLACE.

LAB SAMPLES:
① @ 9' TPH (418.1) & BTEX (8020)
⑤ @ 14' TPH (418.1)

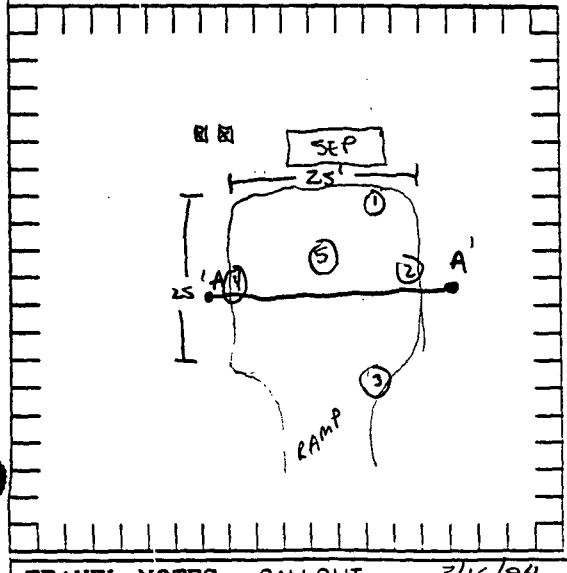
FIELD 418.1 CALCULATIONS

SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SCALE
0 FEET

N

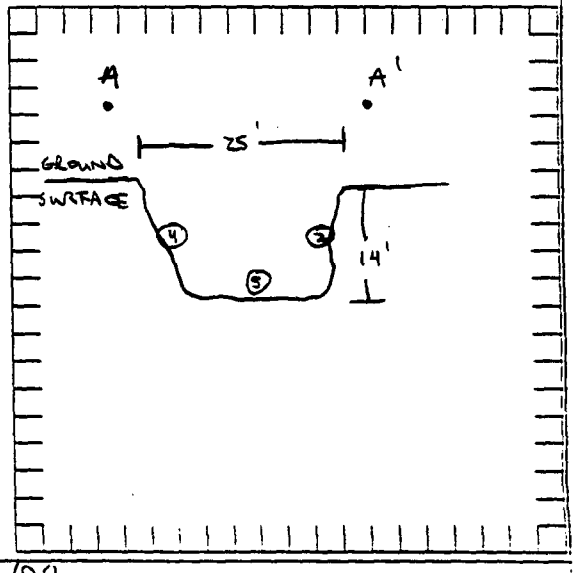
PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
① @ 9'	1115
② @ 8'	16.5
③ @ 8'	2.9
④ @ 8'	6.3
⑤ @ 14'	172.7

PIT PROFILE



TRAVEL NOTES: CALLOUT: 3/16/94 ONSITE: 3/16/94

A1

Well Name:	**Lefkovitz GC B # 1**
Well Site location:	Unit A, Sec. 25, T29N, R10W
Pit Type:	Separator pit
Producing Formation:	Basin Dakota
Pit Category:	Vulnerable Area
Horizonal Distance to Surface Water:	> 1000 ft.
Vicinity Groundwater Depth:	< 50 ft.

RISK ASSESSMENT

Pit remediation activities were terminated when trackhoe reached practical extent at 14 feet below grade.

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

1. Vertical extent was established by using lab analysis (North sidewall BTEX results and pit bottom TPH results). Sidewalls except north perimeter revealed OVM levels below 100 ppm. Extent of TPH contamination contained within the north sidewall appears to be limited in quantity.

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.

Based upon the information given, we conclude that the subsurface lateral impact from the earthen pit is limited. In addition, the below standards for the BTEX and TPH results of the north sidewall and pit bottom, respectively, also demonstrates the low probability of groundwater impact from the contamination remaining in place. AMOCO requests pit closure approval on this location.

ENVIROTECH LABS
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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	1 @ 9'	Date Reported:	03-18-94
Laboratory Number:	7063	Date Sampled:	03-16-94
Sample Matrix:	Soil	Date Received:	03-16-94
Preservative:	Cool	Date Extracted:	03-18-94
Condition:	Cool & Intact	Date Analyzed:	03-18-94
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	20.0
Toluene	1,490	50.0
Ethylbenzene	960	20.0
p,m-Xylene	14,700	30.0
o-Xylene	3,420	20.0

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99 %
Bromofluorobenzene	96 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Lefkovitz GC B1 Separator Pit C4520

Analyst

Review

ENVIROTECH LABS
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EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	1 @ 9'	Date Sampled:	03-16-94
Laboratory Number:	7063	Date Received:	03-16-94
Sample Matrix:	Soil	Date Analyzed:	03-27-94
Preservative:	Cool	Date Reported:	03-27-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	184	10.0

ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: Lefkovitz GC B1 Sep Pit C4520

Tony Tristano
Analyst

David D Young
Review

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	5 @ 14'	Date Sampled:	03-17-94
Laboratory Number:	7065	Date Received:	03-17-94
Sample Matrix:	Soil	Date Analyzed:	03-27-94
Preservative:	Cool	Date Reported:	03-27-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	10.1	10.0

ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: Lefkovitz GC Bl Sep Pit C4520

Tony Tristano
Analyst

Review

3432

C4520

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
Amoco 92140	SEP. PIT LEFKOVITZ GC B1	
Sampler: (Signature) Nelson Velez	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8020)	TPH (418.1)					Remarks
① @ 9'	3/16/94	1155	7063	SOIL	1	✓	✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	3/16/94	1310	Denise L. Ojeman	3-16-94	1310
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615

3434

CHAIN OF CUSTODY RECORD

C4520

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
AMOCO 92140	SEP. PIT LEFROUITZ GC 81	
Sampler: (Signature) Nelson Velez	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (418.1)						Remarks
(5) @ 14'	3/17/94	0845	7065	SOIL	1	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	3/17/94	1315	Jessica L. Gleason	3-42-94	1315
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615

CLIENT: AMOCO

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

LOCATION NO: C4520
C.O.C. NO: 5609

FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: LEFKOVITZ GC B WELL #: 1 PITS: SEP, BLOW
QUAD/UNIT: A SEC: 25 TWP: 29 RNG: 10 PM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: NE/4 NE/4 CONTRACTOR: P&S

DATE STARTED: 11/22/97
DATE FINISHED:
ENVIRONMENTAL SPECIALIST: NV

SOIL REMEDIATION:

REMEDIATION SYSTEM: LANDFARM
APPROX. CUBIC YARDAGE: 1100
LAND USE: RANGE
LIFT DEPTH (ft): 12"-18"

FIELD NOTES & REMARKS:

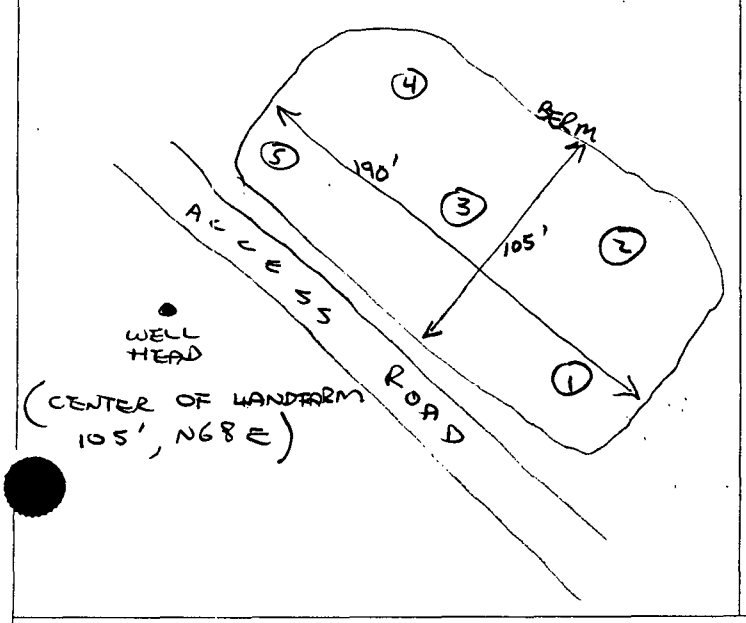
DEPTH TO GROUNDWATER: <50' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'
NMOCD RANKING SCORE: 20 NMOCD TPH CLOSURE STD: 100 PPM

SOIL CONSIST OF MOSTLY DK. YELL. BROWN SAND W/ SMALL AMOUNT OF GRAVEL, SLIGHTLY MOIST, FIRM, BLACKISH DISCOLORATION OBSERVED W/IN SAND @ EACH SAMPLE PT., NO HC ODOR OBSERVED, COLLECTED 5 PT. COMPOSITE FOR LAB ANALYSIS.

FIELD 418.1 CALCULATIONS

SAMP. TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SKETCH/SAMPLE LOCATIONS N



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
LF-1	0.0

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME	RESULTS
LF-1	TPH (8015)	1330	ND

SCALE
0 FT

TRAVEL NOTES: CALLOUT: NA ONSITE: 11/22/97

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	LF - 1	Date Reported:	11-26-97
Laboratory Number:	C566	Date Sampled:	11-22-97
Chain of Custody No:	5609	Date Received:	11-24-97
Sample Matrix:	Soil	Date Extracted:	11-24-97
Preservative:	Cool	Date Analyzed:	11-25-97
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**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: **Lefkovitz GC B #1 Landfarm. 5 Pt. Composite.**

Analyst

Review

5796 U.S. Highway 64-3014 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

5609

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
BLAGG / AMOCO	LANDFARM LEFKOVITZ GC B #1	
Sampler: (Signature) Nelson Velez	Chain of Custody Tape No. 04034-10	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015)						Remarks
												PRESERV. - COOL
LF-1	11/22/97	1330	C566	SOIL	1	✓						5 PT. COMPOSITE

Sample received cool & Intact

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	11/24/97	0805	Dawn L. Ogburn	11-24-97	0805
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Ref COC's 5575 → 5584
5605 → 5615

ENVIROTECH INC.
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Farmington, New Mexico 87401
(505) 632-0615

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	11-25-PM-TPH QA/QC	Date Reported:	11-26-97
Laboratory Number:	C561	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	11-25-97
Condition:	N/A	Analysis Requested:	TPH

Calibration	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	10-28-97	7.1898E-04	7.1469E-04	0.60%	0 - 15%
Diesel Range C10 - C28	10-28-97	6.1170E-04	6.1109E-04	0.10%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%
Diesel Range C10 - C28	1.4	1.3	5.0%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	248	99%	75 - 125%
Diesel Range C10 - C28	1.4	250	250	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Wast SW-846, USEPA, December 1996.

Comments: **QA/QC for samples C561 - C570.**

Analyst

Review

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C7547
C4520

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.: SW 250

6. If Indian, Allottee or Tribe Name:

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation: COM. AGMT.

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: LEFKOVITZ GC B #1

2. Name of Operator: Amoco Production Company

9. API Well No.: 3004507897

3. Address and Telephone No.: 200 Amoco Court, Farmington, N.M. 87401 Tel: (505) 326-9200

10. Field and Pool, or Exploratory Area: DAKOTA

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): NE-NE S-25 T29N R10W NMPM

11. County or Parish, State: SAN JUAN, N.M.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Pit closure	☐ Dispose Water
		(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Pit closure verification - see attached documentation.

(1) BLOW PIT - ABANDONED, GW IMPACTED, MONITORED, CLOSED UNDER SECTION 2.3 AMOCO'S GW PLAN - REVISED 5/11/98

(2) SEPARATOR PIT - ABANDONED, RISK ASSESSED, (VERTICAL EXTENT ESTABLISHED)

14. I hereby certify that the foregoing is true and correct

Signed R.A. Shaw Title ENVIRO. COORDINATOR Date 4/29/99

5/24/98

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statemen or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side