3R - 23

REPORTS

DATE:

April 10, 1996

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

April 10, 1996

Mr. William C. Olson, Hydrologist
New Mexico Oil Conservation Division
Environmental Bureau
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Re: Quarterly Monitoring Report
Amoco Production Company
Gallegos Canyon Unit Com F #162, Sec. 36-T29N-R12W
San Juan County, New Mexico

Dear Mr. Olson:

Amoco Production Company has retained Blagg Engineering, Inc. to conduct environmental monitoring of groundwater reclamation at Gallegos Canyon Unit Com F Well No. 162 (Figure 1). Following are quarterly monitoring results as required by the New Mexico Oil Conservation Division (NMOCD), pursuant to reclamation plan approval by the NMOCD with letter dated January 27, 1994.

The air injection/vapor extraction system at the site has remained in continuous operation. This system is designed to treat soils and groundwater that could not be accessed by excavation or other methods. This system, in conjunction with enhanced microbial placement that occurred in the fourth quarter of 1995, is effectively remediating hydrocarbon contamination at the site.

Summary Laboratory Analytical Results

Groundwater monitor wells at the site were sampled on March 7, 1996. A summary of laboratory analytical results for this and previous sample events is included in Table 1 on the following page and laboratory data reports are included in Appendix B. Analytical data indicates that groundwater impacts in excess of NMWQCC standards has not migrated down gradient to monitor wells MW-9 or MW-10.

Monitor well MW-7 previously contained free product. Quarterly monitoring in December 1995 and March 1996 indicates this product has dissipated and water quality test data shows stable to declining values for BTEX constituents. Water quality in monitor well MW-4, a down gradient well, has shown declining values of BTEX over time. These trends will be further evaluated during quarterly monitoring periods.

TABLE 1

Summary Laboratory Analytical Results
Amoco Production Company GCU Com "F" No. 162

Sample ID	Benzene ug/L	Toluene ug/L	Ethyl Benzene ug/L	Total Xylenes ug/L	Naptha-lene ug/L	Benzo(a) pyrene ug/L	Cations meq/L	Anions meq/L	As mg/L	Ba mg/L	Cd mg/L	Cr mg/L	Pb mg/L	Hg mg/L	Se mg/L	Ag mg/L
MW-3																
2/25/94	476	0.7	ND	1.9	ND	ND	15.80	15.49	ND	3.27	0.0001	ND	0.0034	ND	0.0011	ND
6/17/94	13.6	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/94	20.9	3.4	0.9	10.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12/7/94	241.5	101.1	12.7	223.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4																
2/25/94	240	3.1	40.2	469	ND	ND	17.74	18.50	0.0022	5.09	0.0016	ND	0.0373	ND	0.0015	ND
6/17/94	273	2.2	34.7	113	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/94	355	0.7	59.4	352	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12/7/94	1694	7.6	241.3	1575	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12/11/95	549	2.9	29.5	281.6												
3/7/96	143	3.9	13.0	79.3												
MW-5																
2/25/94	ND	1.0	ND	2.2	ND	ND	34.59	33.50	0.0064	3.16	0.0034	ND	ND	ND	0.0037	ND
6/17/94	2.1	2.7	4.5	32.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/94	1.3	0.5	1.0	5.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12/7/94	0.8	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/8/95	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/12/95	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/95	ND	ND	ND	ND												
12/11/95	ND	ND	ND	ND												
3/7/96	ND	ND	ND	ND												
MW-6																
2/25/94	15.9	3.2	5.3	140	ND	ND	13.39	12.34	ND	2.68	0.0002	ND	ND	ND	0.0007	ND
6/17/94	15.3	1.9	2.6	98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/94	70.1	3.7	1.9	109	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12/7/94	154.8	44.9	0.2	212.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/8/95	7.0	ND	ND	8.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/12/95	2.38	0.86	ND	12.6												
9/27/95	12.0	ND	ND	15.33												
12/11/95	31.0	29.1	11.4	175.3												
3/7/96	42.1	4.5	3.1	51.3												

MW-7																
12/11/95	85.7	522	144	2,422												
3/7/96	95.0	421	226	4,075												
MW-9																
2/25/94	ND	1.1	ND	1.4	ND	ND	13.73	13.47	ND	1.17	0.0011	ND	ND	ND	0.0012	ND
6/17/94	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/27/94	0.8	0.4	0.6	3.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12/7/94	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/8/95	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/12/95	ND	ND	ND	ND												
9/27/95	ND	ND	ND	ND												
12/4/95	ND	ND	ND	ND												
3/7/96	ND	ND	ND	ND												
MW-10																
2/25/94	ND	0.7	ND	1.7	ND	ND	15.04	15.45	ND	2.64	0.0140	ND	0.0012	ND	0.0018	ND
6/17/94	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
9/27/94	0.8	0.3	0.2	3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12/7/94	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/8/95	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/12/95	ND	ND	ND	ND												
9/27/95	ND	ND	ND	ND												
12/4/95	ND	ND	ND	4.2												
3/7/96	ND	ND	ND	ND												
WQCC																
LIMITS	10	750	750	620	30	0.7	------	------	0.1	1.0	0.01	0.05	0.05	0.002	0.05	0.05

ug/L = micrograms per liter, equivalent to parts per billion (ppb) mg/L= milligrams per liter, equivalent to parts per million (ppm) ND=not detected NA=not analyzed

Water Table Elevations

Depth to groundwater measurements in monitor wells was measured during the March 7, 1996 sample event. Table 2 includes water depth measurements, surface casing relative elevations and groundwater elevations. A contour map of relative water table elevations for this sample event is included as Figure 2.

TABLE 2

Relative Groundwater Elevations
Amoco Production Company GCU Com "F" No. 162
March 7, 1996

Monitor Well	Total Depth (feet)	Depth to Fluid (feet)	Relative Casing Elevation (feet)	Relative Groundwater Elevation (feet)
MW-1	Well	abandoned	during	excavation
MW-2	23.1	na	100.16	na
MW-3	Well	abandoned	during	excavation
MW-4	24.1	21.69	98.87	77.18
MW-5	25.1	22.73	102.50	79.77
MW-6	26.8	21.07	98.68	77.61
MW-7	25.3	20.34	97.39	77.05
MW-8	Well	abandoned	during	excavation
MW-9	19.6	14.82	88.50	73.68
MW-10	16.3	14.11	90.25	76.14

na = water table elevation not measured

Current and Proposed Activities

Contaminated soil and groundwater at the GCU 162 site that could not be accessed by excavation is presently being remediated with the active air injection/vapor extraction system and through enhanced biodegradation. Operation of the air injection/vapor extraction system is on-going.

The effectiveness of proprietary microbe placement in and around hydrocarbon contaminated subsurface soils is presently being evaluated. Analytical results from future soil and groundwater sample events will be submitted in quarterly reports transmitted to NMOCD.

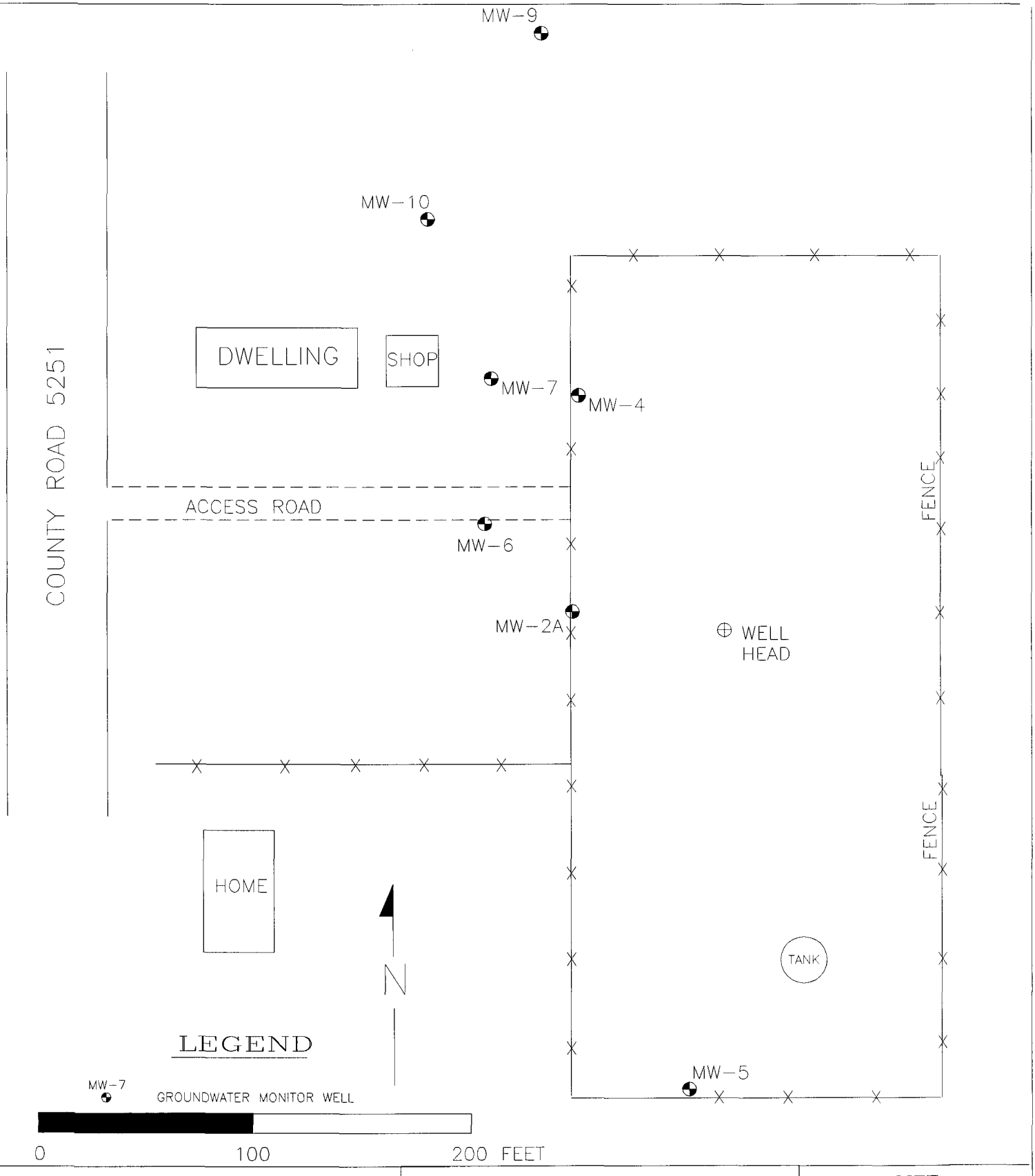
Summary

This report has been prepared by Blagg Engineering, Inc. on behalf of Amoco Production Company. Questions or comments may be directed to Jeff Blagg at (505)632-1199.

Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.
President

cc: Mr. Denny Foust, NMOCD
Mr. Buddy Shaw, Amoco Production Company



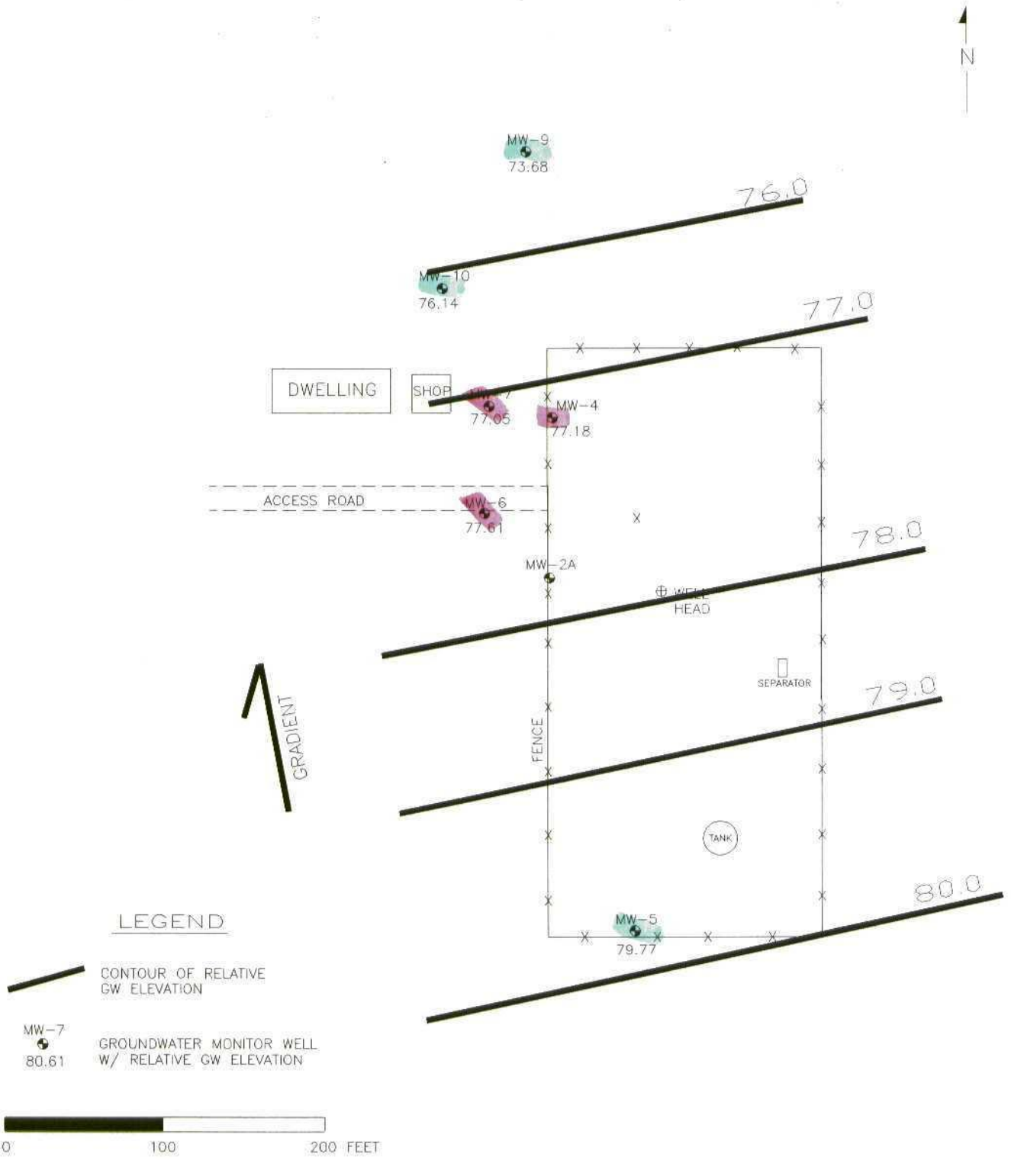
AMOCO PRODUCTION CO.
GCU 162 WELL SITE
SAN JUAN CO., NEW MEXICO

MARCH 1996

BLAGG ENGINEERING, INC.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

SITE PLAN

FIGURE 1	DRWN BY: JCB
162REV	PROJ MGR: JCB



AMOCO PRODUCTION CO. GCU 162 WELL SITE SAN JUAN CO., NEW MEXICO MARCH 1996	BLAGG ENGINEERING, INC. CONSULTING ENGINEERING SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE:(505)632-1199	GW SURFACE CONTOUR 3/7/96 FIGURE 2 — DRWN BY: JCB 162SITE6 — PROJ MANG JCB

ANALYTICA

ENVIRONMENTAL LABORATORY

March 13, 1996

Nelson Velez
Blagg Engineering, Inc.
PO Box 87
Bloomfield, NM 87413

Dear Nelson:

Enclosed are the results for the analysis of the aqueous samples received March 8, 1996. The samples were from the GCU Com F 162 site. Analysis for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) was performed on the samples, as per the accompanying chain of custody form.

BTEX 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.

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,

Dr. Denise A. Bohemier
Lab Director

807 SOUTH CARLTON • FARMINGTON, NEW MEXICO 87401 • (505) 326-2395

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

CHAIN OF CUSTODY

Page 1 of 1

PROJECT MANAGER:
Analytica Lab I.D.:

Company: BLAGG
Address:

Phone:
Fax:

Bill To: SAME AS ABOVE
Company:
Address:

Sample ID	Date	Time	Matrix	Lab ID	ORGANIC ANALYSES: 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):	WATER ANALYSES: 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):	METALS: Priority Pollutants	RCRA Metals (Total)	RCRA Metals TCLP (1311)	Other (specify):	COMMENTS
MW #4	3/7/96	1340						✓																					PRESERV. $HgCl_2$ & COOL
MW #5	3/7/96	1310						✓																					" " "
MW #6	3/7/96	1455						✓																					" " "
MW #7	3/7/96	1525						✓																					" " "
MW #9	3/7/96	1405						✓																					" " "
MW #10	3/7/96	1425						✓																					" " "

Project Information	Sample Receipt
Proj. #:	No. Containers:
Proj. Name: Gen com F 162	Custody Seals: Y / N / NA
P. O. No:	Received Intact:
Shipped Via:	Received Cold:

Required Turnaround Time (Prior Authorization Required for Rush)

Sampled By:	Relinquished By:	Relinquished By:
Signature: Nelson Velez	Signature: Nelson Velez	Signature:
Date: 3/7/96	Date: 3/8/96	Date:
Company: BLAGG	Company: BLAGG	Company:
Time: SEE SAMPLE ID'S	Time: 1205	Time:
Received By:	**Received By:**	**Received By:**
Signature:	Signature:	Signature:
Date:	Date:	Date: 3/8
Company:	Company:	Company: Analytica
Time:	Time:	Time: 1210

Please Fill Out Thoroughly.

Shaded areas for lab use only.

White/Yellow: Analytica
Pink: Client

ANALYTICA
ENVIRONMENTAL LABORATORY

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Report Date:	03/13/96
Sample ID:	MW - 4	Date Sampled:	03/07/96
Lab ID:	2857	Date Received:	03/08/96
Sample Matrix:	Water	Date Analyzed:	03/12/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	143	2.00
Toluene	3.92	2.00
Ethylbenzene	13.0	2.00
m,p-Xylenes	62.2	4.00
o-Xylene	17.1	2.00
Total BTEX	**239**	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	105	88 - 110%

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

Comments:

Analyst

Review

ANALYTICA
ENVIRONMENTAL LABORATORY

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Report Date:	03/13/96
Sample ID:	MW - 5	Date Sampled:	03/07/96
Lab ID:	2858	Date Received:	03/08/96
Sample Matrix:	Water	Date Analyzed:	03/12/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.20
Toluene	ND	0.20
Ethylbenzene	ND	0.20
m,p-Xylenes	ND	0.40
o-Xylene	ND	0.20
Total BTEX	**ND**	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	106	88 - 110%

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

Comments:

Analyst

Review

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ENVIRONMENTAL LABORATORY

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Report Date:	03/13/96
Sample ID:	MW - 6	Date Sampled:	03/07/96
Lab ID:	2859	Date Received:	03/08/96
Sample Matrix:	Water	Date Analyzed:	03/12/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	42.1	0.50
Toluene	4.53	0.50
Ethylbenzene	3.09	0.50
m,p-Xylenes	38.6	1.00
o-Xylene	12.7	0.50
Total BTEX	**101**	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	107	88 - 110%

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

Comments:

Analyst

Review

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ENVIRONMENTAL LABORATORY

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Report Date:	03/13/96
Sample ID:	MW -7	Date Sampled:	03/07/96
Lab ID:	2860	Date Received:	03/08/96
Sample Matrix:	Water	Date Analyzed:	03/12/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	95.0	10.0
Toluene	421	10.0
Ethylbenzene	226	10.0
m,p-Xylenes	3,080	100
o-Xylene	995	10.0
Total BTEX	**4,820**	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	105	88 - 110%

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

Comments:

Analyst

Review

ANALYTICA
ENVIRONMENTAL LABORATORY

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Report Date:	03/13/96
Sample ID:	MW - 9	Date Sampled:	03/07/96
Lab ID:	2861	Date Received:	03/08/96
Sample Matrix:	Water	Date Analyzed:	03/12/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.20
Toluene	ND	0.20
Ethylbenzene	ND	0.20
m,p-Xylenes	ND	0.40
o-Xylene	ND	0.20
Total BTEX	**ND**	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	106	88 - 110%

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

Comments:

Analyst

Review

ANALYTICA
ENVIRONMENTAL LABORATORY

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Report Date:	03/13/96
Sample ID:	MW - 10	Date Sampled:	03/07/96
Lab ID:	2862	Date Received:	03/08/96
Sample Matrix:	Water	Date Analyzed:	03/12/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.20
Toluene	ND	0.20
Ethylbenzene	ND	0.20
m,p-Xylenes	ND	0.40
o-Xylene	ND	0.20
Total BTEX	**ND**	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	103	88 - 110%

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

Comments:

Analyst

Review

PURGEABLE AROMATICS

Quality Control Report

Method Blank Analysis

Sample Matrix: Water
Lab ID: MB35136

Report Date: 03/13/96
Date Analyzed: 03/12/96

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.20
Toluene	ND	0.20
Ethylbenzene	ND	0.20
m,p-Xylenes	ND	0.40
o-Xylene	ND	0.20

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	106	88 - 110%

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

Comments:

Analyst

Review

Purgeable Aromatics

Duplicate Analysis

Lab ID:	2859Dup	Report Date:	03/13/96
Sample Matrix:	Water	Date Sampled:	03/07/96
Preservative:	Cool, HgCl2	Date Received:	03/08/96
Condition:	Intact	Date Analyzed:	03/12/96

Target Analyte	Original Conc. (ug/L)	Duplicate Conc. (ug/L)	Acceptance Range (ug/L)
Benzene	42.1	43.5	33.9 - 51.7
Toluene	4.53	5.35	3.09 - 6.79
Ethylbenzene	3.09	4.01	1.42 - 5.67
m,p-Xylenes	38.6	44.7	NE
o-Xylene	12.7	14.9	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	105	88 - 110%

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

Comments:

Analyst

Review

Purgeable Aromatics

Matrix Spike Analysis

Lab ID:	2863Spk	Report Date:	03/13/96
Sample Matrix:	Water	Date Sampled:	03/08/96
Preservative:	Cool, HgCl2	Date Received:	03/08/96
Condition:	Intact	Date Analyzed:	03/12/96

Target Analyte	Spike Added (ug/L)	Original Conc. (ug/L)	Spiked Sample Conc. (ug/L)	% Recovery	Acceptance Limits (%)
Benzene	10	ND	10.7	107%	39 -150
Toluene	10	0.28	10.5	102%	46 - 148
Ethylbenzene	10	ND	9.10	91%	32 - 160
m,p-Xylenes	20	ND	20.4	101%	NE
o-Xylene	10	ND	10.1	101%	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	105	88 - 110%

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

Comments:

Analyst

Review

NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

October 24, 1995

CERTIFIED MAIL
RETURN RECEIPT NO. Z-765-962-434

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

RE: AMOCO GALLEGOS CANYON UNIT F#162 WELL SITE
SAN JUAN COUNTY, NEW MEXICO

Dear Mr. Shaw:

The New Mexico Oil Conservation Division (OCD) has completed a review of Amoco Production Company's (Amoco) October 17, 1995 "PROPOSED BIO-ENHANCEMENT TREATMENT PROCEDURE, GALLEGOS CANYON UNIT (K) #162, SEC. 36-T29N-12W, SAN JUAN COUNTY, NEW MEXICO" which was submitted on behalf of Amoco by their consultant Blagg Engineering, Inc. This document contains Amoco's plan for injection of a bio-enhancement solution for remediation of contaminated soils in areas which were inaccessible during previous site excavation actions.

The above referenced proposed bio-enhancement procedure is approved with the following conditions:

1. Amoco will make observations of the surface soils overlying the proposed injection areas for evidence of hydrocompaction or settling of the soil profile. If hydrocompaction or settling is observed, Amoco will cease injection, notify the OCD of the occurrence and reevaluate the use of this technique.

2. Amoco will include a discussion of all ongoing bio-enhancement activities in each quarterly report on site remedial actions. The discussions will include information on the applications rates and locations of the applications.

Please be advised that approval of this plan does not relieve Amoco of liability should their operation result in additional pollution of surface or ground waters or the environment or should the plan fail to remediate 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 contact me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office