3R - 23

REPORTS

DATE:

JAN. 10, 1995

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

January 10, 1995

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 (K) #162, Sec. 36-T29N-R12W
San Juan County, New Mexico

Dear Mr. Olson:

Amoco Production Company has retained Blagg Engineering, Inc. to continue environmental monitoring of groundwater reclamation at Gallegos Canyon Unit (K) Well No. 162 (Appendix A, 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 groundwater reclamation system at the site has been in operation since the last quarterly reported filed on June 29, 1994, except for a temporary shut-down between November 1 - December 7, 1994 for system winterization. A gas fired separator was placed into operation for heating produced water to prevent freezing. The air stripper effluent was sampled in October and December to determine water quality; BTEX analytical results have not exceeded applicable standards on any sample event. Quarterly sampling of groundwater monitor system wells was performed on December 7, 1994. Following are summary laboratory analytical results and monitoring data concerning product thickness, water table elevations, recovery volumes and infiltration volumes.

Summary Laboratory Analytical Results

A summary of laboratory analytical results for groundwater monitor wells and system effluent is included in Table 1 on the following page. Laboratory data reports are included in Appendix B.

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
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
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
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
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
Stripper Effluent																
5/11/94	710	920	116	846	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/17/94	37.5	93	3.6	61.9	ND	ND	698.1	1,513	ND	ND	ND	ND	ND	ND	ND	ND
7/8/94	ND	ND	ND	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8/11/94	1.8	8.9	0.1	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/29/94	0.9	3.9	ND	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/13/94	1.4	0.9	0.3	3.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12/17/94	0.8	0.7	ND	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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 and Product Thickness Measurements

The depth to water and product thickness measurements in groundwater monitor wells was measured during sample events. Table 2 includes water depth measurements, surface casing relative elevations, groundwater elevations and product thickness measurements for the December 7, 1994 sample event. A contour map of relative water table elevations for this sample event is included in Figure 2.

TABLE 2

Relative Groundwater Elevations
Amoco Production Company GCU Com "F" No. 162
December 7, 1994

Monitor Well	Total Depth (feet)	Depth to Fluid (feet)	Relative Casing Elevation (feet)	Relative Groundwater Elevation (feet)	Product Thickness (inches)
MW-1	22.6	na	100.00	na	7
MW-2	23.1	na	100.16	na	9
MW-3	24.6	21.01	99.10	78.09	0
MW-4	25.0	20.85	98.87	78.02	0
MW-5	24.8	21.67	102.50	81.83	0
MW-6	26.8	20.11	98.68	78.57	0
MW-7	25.3	na	97.39	na	10
MW-8	24.1	na	99.03	na	5
MW-9	19.6	12.10	88.50	76.40	0
MW-10	20.3	15.45	91.58	76.13	0

na = water table elevation not applicable due to floating product

Fluid Recovery Rates and Infiltration Volumes

Groundwater contaminated with dissolved phase and free phase hydrocarbon is pumped from monitor wells RW-2, RW-3, RW-4, RW-5 and RW-6 (Note: RW-1 is out of service). The total volume of water pumped from these wells from initial start-up on May 9, 1994 to December 30, 1994 was 198,931 gallons. No free product recovery was observed during well testing performed

on December 9, 1994. Based on this test data, only dissolved phase hydrocarbons are currently being recovered by the ground water treatment system. Recovered water is treated through an air stripping tower and then diverted to the on-site separator pit for infiltration. Table 3 summarizes the approximate volumes of water recovered from the system during the previous quarter:

TABLE 3

Recovery Well Fluid Volumes (Approximate)
Amoco Production Company GCU Com "F" No. 162
September 21, 1994 through December 30, 1994

Recovery Well	Water Recovery (gallons)	Water Reinjected (gallons)
RW-2	11,190	11,190
RW-3	11,190	11,190
RW-4	11,190	11,190
RW-5	5,600	5,600
RW-6	16,795	16,795
System Total	55,965	55,965

Proposed Activities

Amoco is presently evaluating use of excavation and landfarming/composting as a method to expedite reclamation of the GCU Com "F" No. 162 site. Details of this proposed process, if available, will be included in the first quarter 1995 report due in April, 1995.

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.

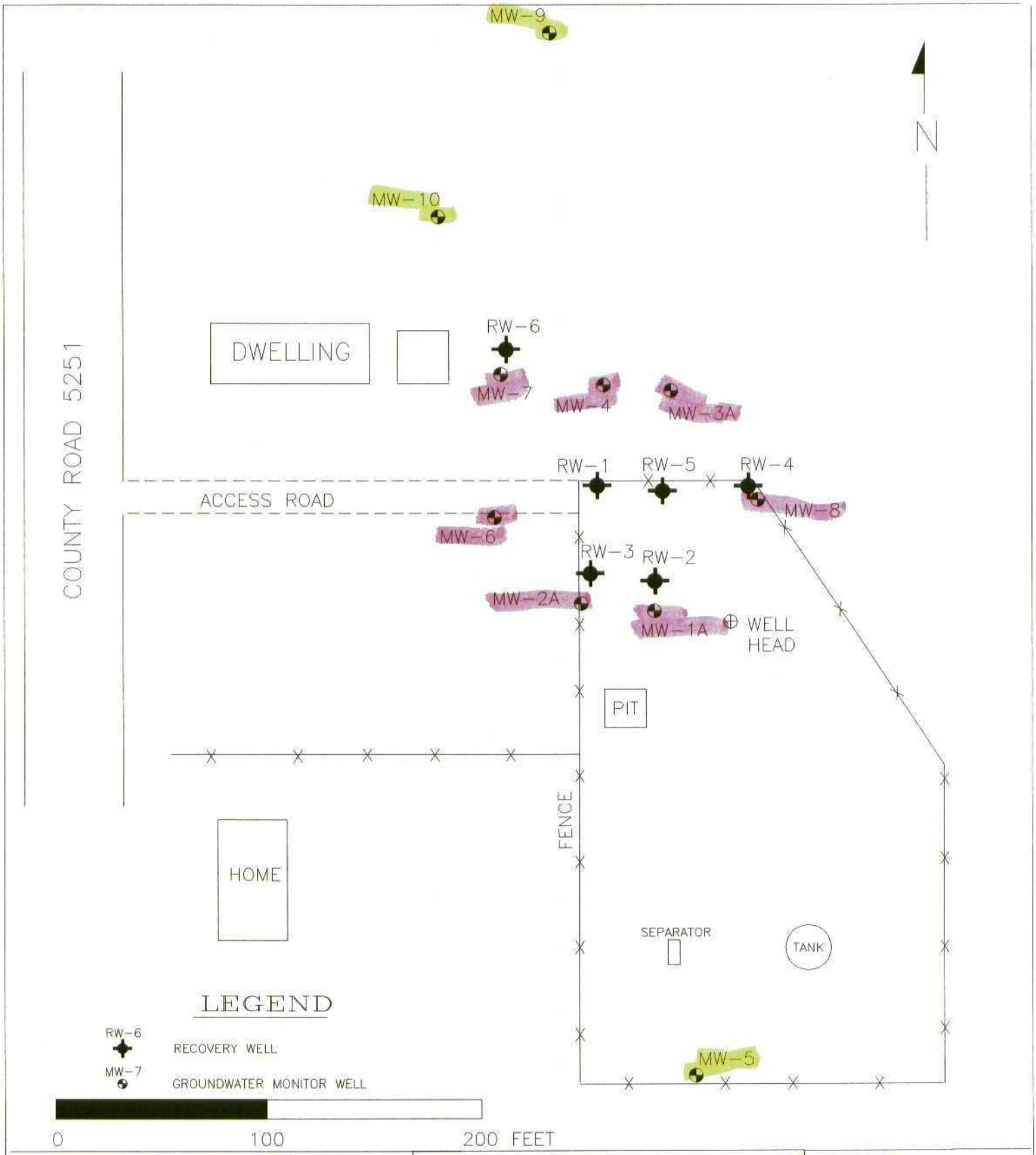
Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.
President

cc: Denny Foust, NMOCD
Buddy Shaw, Amoco

APPENDIX A

FIGURES



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

DECEMBER, 1994

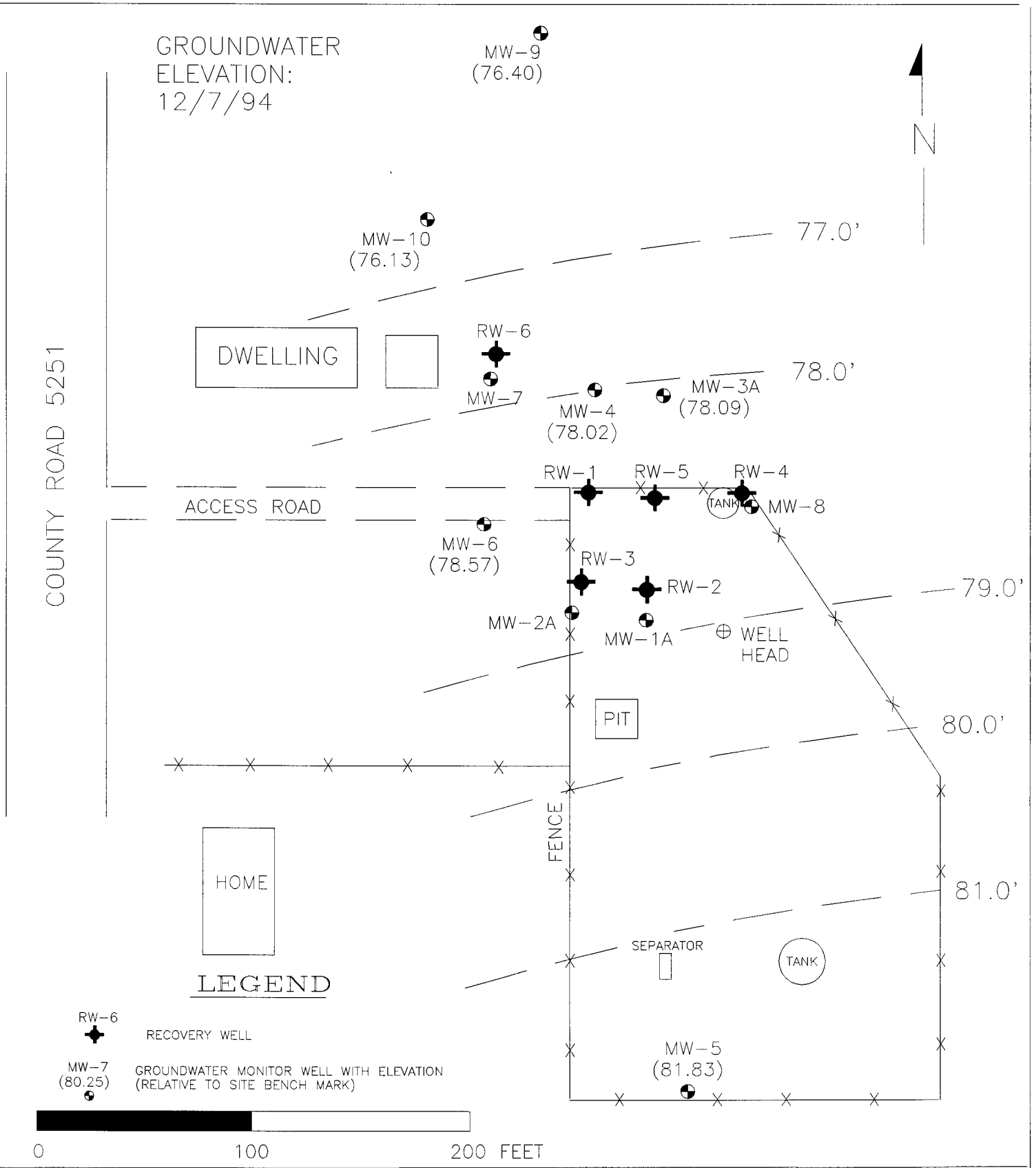
BLAGG ENGINEERING, INC.
CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

SITE MAP

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



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GCU 162 WELL SITE
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DECEMBER, 1994

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P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

GROUNDWATER CONTOUR

FIGURE 2	DRWN BY: JCB
162GWE	PROJ MGR: JCB

APPENDIX B

LABORATORY DATA REPORTS

CHAIN OF CUSTODY RECORD

2332

ON SITE TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 12-16-94

Page 1 of 1

Purchase Order No.:	Reference No.:		
SEND INVOICE TO: Name	Jeff Blagg	REPORT RESULTS TO: Name	Title
Company	Blagg Engineering	Company	
Dept.		Mailing Address	same
Address	P.O. Box 87	City, State, Zip	
City, State, Zip	Bloomfield, NM 87413	Telephone No.	Telefax No.

Special Instructions:
Amoco

Sampler: Jeff Blagg

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	ANALYSIS REQUESTED: BTEX	ANALYSIS REQUESTED: 4420	Remarks (matrix)
GCU #162 Stripper Effluent	1207 12/16/94	Grab	Cool, H_2SO_4	2	X	4420 - 2332	Water

Relinquished by: J. C. Blagg	Date/Time 12/16/94 1516	Received by: Nelson Velez	Date/Time 12/16/94 1516
Relinquished by: Nelson Velez	Date/Time 12/16/94 1625	Received by: Dean L. Chacon	Date/Time 12/16/94 1625
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: J. C. Blagg Date 12-16-94
(Client Signature Must Accompany Request)

Rush	5 Working Days	10 Working Days	Sampling Location:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	Jeff Blagg	Date:	12/17/94
Company:	Blagg Engineering	Lab ID:	2332
Address:	P.O. Box 87	Sample ID:	4420
City, State:	Bloomfield, NM 87413	Job No.	2-1000

Project Name:	Amoco				
Project Location:	GCU #162	Stripper Effluent			
Sampled by:	JB	Date:	12/16/94	Time:	12:07
Analyzed by:	DLA	Date:	12/17/94		
Sample Matrix:	Water				

Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
Benzene	0.8	0.2
Toluene	0.7	0.2
Ethylbenzene	ND	0.2
m,p-Xylene	0.9	0.2
o-Xylene	ND	0.2
	TOTAL 2.4 ug/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: [signature]
Date: 12/19/94

P. O. BOX 2606 • FARMINGTON, NM 87499

– TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT –

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 12/17/94

Internal QC No.: 0222-STD
Surrogate QC No.: 0223-STD
Reference Standard QC No.: 0300-STD

Method Blank

Analytes in Blank	*Amount*
Average Amount of All Analytes In Blank	<0.1 ppb

Calibration Check

Calibration Standards	*Units of Measure*	**True Value*	*Analyzed Value*	*% Diff*	*Limit*
Benzene	ppb	20	20	2	15%
Toluene	ppb	20	19	4	15%
Ethylbenzene	ppb	20	19	5	15%
m,p-Xylene	ppb	40	38	4	15%
o-Xylene	ppb	20	19	5	15%

Spike Results

Analyte	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Benzene	97	101	(39-150)	2	20%
Toluene	100	96	(46-148)	3	20%
Ethylbenzene	98	100	(32-160)	2	20%
m,p-Xylene	98	99	(35-145)	0	20%
o-Xylene	100	99	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*S3 Percent Recovered*
Limits	(70-130)		
4420-2332	100		

S1: *Flourobenzene*

CHAIN OF CUSTODY RECORD

2216

ON SITE TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: OCT 13, 1994

Page 1 of 1

ECU 162

Purchase Order No.:	Reference No.:		
SEND INVOICE TO: Name	Jeff Blagg	REPORT RESULTS TO: Name	Title
Company	Blagg Engineering / Dept.	Company	SAME
Address	P.O. Box 87	Mailing Address	
City, State, Zip	Bloomfield 87413	City, State, Zip	
		Telephone No.	Telefax No.

Special Instructions:

Sampler: J. C. Clagg

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX									Remarks (matrix)
ECU 162 Stripper Effluent	1137	~~Comp~~	Cool →	2	X		8259-2216							Water
	10-13-94	GRAB	HgCl2											

Relinquished by:	Date/Time 10-13-94 1210	Received by:	Date/Time 10/13/94 12:12
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Rush	5 Working Days	10 Working Days	Sampling Location:

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Jeff Blagg*	Date:	10/14/94
Company:	*Blagg Engineering*	*Lab ID:*	*2216*
Address:	*P.O. Box 87*	*Sample ID:*	*3559*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 162***				
Project Location:	***GCU 162 Stripper Effluent***				
Sampled by:	JCB	Date:	10/13/94	Time:	11:37
Analyzed by:	DLA	Date:	10/13/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	1.4	*0.2*
Toluene	0.9	*0.2*
Ethylbenzene	0.3	*0.2*
m,p-Xylene	2.4	*0.2*
o-Xylene	0.8	*0.2*
	TOTAL *5.8 ug/L*	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: DLA

Date: 10/14/94

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 10/13/94

Internal QC No.: 0222-STD
Surrogate QC No.: 0223-STD
Reference Standard QC No.: 0300-STD

Method Blank

Analytes in Blank	Amount
Average Amount of All Analytes In Blank	<0.1 ppb

Calibration Check

Calibration Standards	Units of Measure	*True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20	20	1	15%
Toluene	ppb	20	19	4	15%
Ethylbenzene	ppb	20	19	7	15%
m,p-Xylene	ppb	40	36	11	15%
o-Xylene	ppb	20	19	7	15%

Spike Results

Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	101	100	(39-150)	0	20%
Toluene	103	103	(46-148)	0	20%
Ethylbenzene	100	99	(32-160)	1	20%
m,p-Xylene	97	101	(35-145)	3	20%
o-Xylene	103	100	(35-145)	3	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	S3 Percent Recovered
Limits	(70-130)		
3559-2216	99		

S1: Flourobenzene

CHAIN OF CUSTODY RECORD

2321

ON SITE TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 12/7/94

Page 1 of 1

Purchase Order No.:		Reference No.:	
SEND INVOICE TO	Name		
	Company	BLAGG ENGINEERING	Dept.
	Address	P.O. BOX 87	
	City, State, Zip	BLOOMFIELD NM 87413	
REPORT RESULTS TO	Name	NELSON VELEZ	Title PG
	Company	SAME	
	Mailing Address	SAME	
	City, State, Zip	SAME	
	Telephone No.	632-1199	Telefax No.

Special Instructions:

GCU com "F" 162

Sampler: Nelson Velez

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION		DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX (8020)									Remarks (matrix)
MW # 3	12/7/94	1140	GRAB	HgCl	2	✓			4303	–	2321				WATER
MW #4	12/7/94	1200	GRAB	HgCl	2	✓			4304	–					WATER
MW #5	12/7/94	1025	GRAB	HgCl	2	✓			4305	–					WATER
MW #6	12/7/94	1115	GRAB	HgCl	2	✓			4306	–					WATER
MW #9	12/7/94	1305	GRAB	HgCl	2	✓			4307	–					WATER
MW #10	12/7/94	1235	GRAB	HgCl	2	✓			4308	–	✓				WATER

Relinquished by: Nelson Velez	Date/Time 12/8/94 0734	Received by: Lori L. Queen	Date/Time 12/8/94 0734
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date _____

(Client Signature Must Accompany Request)

Rush	5 Working Days	10 Working Days	Sampling Location:

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	12/8/94
Company:	*Blagg Engineering*	*Lab ID:*	*2321*
Address:	*P.O. Box 87*	*Sample ID:*	*4303*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU Com "F" 162***				
Project Location:	***MW # 3***				
Sampled by:	NV	Date:	12/7/94	Time:	11:40
Analyzed by:	DLA	Date:	12/8/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	241.5	*0.2*
Toluene	101.1	*0.2*
Ethylbenzene	12.7	*0.2*
m,p-Xylene	174.5	*0.2*
o-Xylene	48.6	*0.2*
	TOTAL 578.4 ug/L	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: DLA
Date: 12/8/94

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	12/8/94
Company:	*Blagg Engineering*	*Lab ID:*	*2321*
Address:	*P.O. Box 87*	*Sample ID:*	*4304*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU Com "F" 162***				
Project Location:	***MW # 4***				
Sampled by:	NV	Date:	12/7/94	Time:	12:00
Analyzed by:	DLA	Date:	12/8/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	1694.6	*0.2*
Toluene	7.6	*0.2*
Ethylbenzene	241.3	*0.2*
m,p-Xylene	1527.1	*0.2*
o-Xylene	47.9	*0.2*
	TOTAL 3518.4 ug/L	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: DaL

Date: 12/8/94

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 12/8/94

Internal QC No.: 0222-STD
Surrogate QC No.: 0223-STD
Reference Standard QC No.: 0300-STD

Method Blank

Analytes in Blank	Amount
Average Amount of All Analytes In Blank	<0.1 ppb

Calibration Check

Calibration Standards	Units of Measure	*True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20	20	1	15%
Toluene	ppb	20	19	6	15%
Ethylbenzene	ppb	20	18	9	15%
m,p-Xylene	ppb	40	36	9	15%
o-Xylene	ppb	20	18	10	15%

Spike Results

Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	110	111	(39-150)	1	20%
Toluene	113	111	(46-148)	1	20%
Ethylbenzene	108	106	(32-160)	1	20%
m,p-Xylene	94	86	(35-145)	6	20%
o-Xylene	97	94	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	S3 Percent Recovered
Limits	(70-130)		
4303-2321	98		

S1: Flourobenzene

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	12/8/94
Company:	*Blagg Engineering*	*Lab ID:*	*2321*
Address:	*P.O. Box 87*	*Sample ID:*	*4305*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU Com "F" 162***				
Project Location:	***MW # 5***				
Sampled by:	NV	Date:	12/7/94	Time:	10:25
Analyzed by:	DLA	Date:	12/8/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	0.8	*0.2*
Toluene	ND	*0.2*
Ethylbenzene	ND	*0.2*
m,p-Xylene	ND	*0.2*
o-Xylene	ND	*0.2*
	TOTAL *0.8 ug/L*	

ND - Not Detectable

Method - *SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: JaG

Date: 12/8/94

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	12/8/94
Company:	*Blagg Engineering*	*Lab ID:*	*2321*
Address:	*P.O. Box 87*	*Sample ID:*	*4306*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU Com "F" 162***				
Project Location:	***MW # 6***				
Sampled by:	NV	Date:	12/7/94	Time:	11:15
Analyzed by:	DLA	Date:	12/8/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	154.8	*0.2*
Toluene	44.9	*0.2*
Ethylbenzene	0.2	*0.2*
m,p-Xylene	194.9	*0.2*
o-Xylene	17.3	*0.2*
	TOTAL 412.1 ug/L	

ND - Not Detectable

Method - *SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: DA

Date: 12/8/94

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	12/8/94
Company:	*Blagg Engineering*	*Lab ID:*	*2321*
Address:	*P.O. Box 87*	*Sample ID:*	*4307*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU Com "F" 162***				
Project Location:	***MW # 9***				
Sampled by:	NV	Date:	12/7/94	Time:	13:05
Analyzed by:	DLA	Date:	12/8/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	ND	*0.2*
Toluene	ND	*0.2*
Ethylbenzene	ND	*0.2*
m,p-Xylene	ND	*0.2*
o-Xylene	ND	*0.2*
	TOTAL *0.0 ug/L*	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: JA
Date: 12/8/94

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	12/8/94
Company:	*Blagg Engineering*	*Lab ID:*	*2321*
Address:	*P.O. Box 87*	*Sample ID:*	*4308*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU Com "F" 162***				
Project Location:	***MW # 10***				
Sampled by:	NV	Date:	12/7/94	Time:	12:35
Analyzed by:	DLA	Date:	12/8/94		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	ND	*0.2*
Toluene	ND	*0.2*
Ethylbenzene	ND	*0.2*
m,p-Xylene	ND	*0.2*
o-Xylene	ND	*0.2*
	TOTAL *0.0 ug/L*	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by:
Date: 12/8/94

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 12/8/94

Internal QC No.: 0222-STD
Surrogate QC No.: 0223-STD
Reference Standard QC No.: 0300-STD

Method Blank

Analytes in Blank	Amount
Average Amount of All Analytes In Blank	<0.1 ppb

Calibration Check

Calibration Standards	Units of Measure	*True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20	20	1	15%
Toluene	ppb	20	19	6	15%
Ethylbenzene	ppb	20	18	9	15%
m,p-Xylene	ppb	40	36	9	15%
o-Xylene	ppb	20	18	10	15%

Spike Results

Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	98	102	(39-150)	3	20%
Toluene	95	98	(46-148)	3	20%
Ethylbenzene	93	96	(32-160)	2	20%
m,p-Xylene	96	99	(35-145)	2	20%
o-Xylene	92	97	(35-145)	4	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	S3 Percent Recovered
Limits	(70-130)		
4305-2321	101		

S1: Flourobenzene