3R - 23

REPORTS

DATE:

JAN. 16, 1997

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

January 16, 1997

Mr. William C. Olson, Hydrologist
New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco
Santa Fe, New Mexico 87505

Re: Annual 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 annual 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 and revised with an area wide plan submitted on October 22, 1996.

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 at the site, is effectively remediating hydrocarbon contamination at the site.

Summary Laboratory Analytical Results

Groundwater monitor wells at the site were sampled in March, June, September and December, 1996. A summary of laboratory analytical results for these and previous sample events are 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 beginning in December 1995 and continuing to the current monitoring 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
Abandon																
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												
6/27/96	141	63.4	65.9	867												
9/6/96	188	54.6	142	1,387												
12/24/96	42.3	14.6	39.2	430												
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												
6/27/96	ND	ND	ND	ND												
9/6/96	ND	ND	ND	ND												
12/24/96	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												
6/27/96	1.53	1.83	ND	5.77												
9/6/96	1.64	ND	ND	84.7												
12/24/96	0.67	ND	ND	1.24												
MW-7																
12/11/95	85.7	522	144	2,422												
3/7/96	95.0	421	226	4,075												
6/27/96	223	150	165	2,353												
9/6/96	142	104	132	1,728												
12/24/96	34.3	15.3	14.5	159.8												
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												
6/27/96	ND	ND	ND	ND												
9/6/96	ND	ND	ND	ND												
12/24/96	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												
6/27/96	ND	ND	ND	ND												
9/6/96	ND	ND	ND	ND												
12/24/96	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 each monitor well was measured during each quarterly sample event. Table 2 includes water depth measurements, surface casing relative elevations and groundwater elevations for the December 24, 1996 sample event. 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
December 24, 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	21.56	98.87	77.31
MW-5	25.1	22.50	102.50	80.00
MW-6	26.8	20.83	98.68	77.85
MW-7	25.3	20.16	97.39	77.23
MW-8	Well	abandoned	during	excavation
MW-9	19.6	12.65	88.50	75.85
MW-10	16.3	13.97	90.25	76.28

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 has apparently enhanced the remediation of contaminated groundwater. Further enhanced insitu bioremediation is proposed by introduction of a catalyst in one or more monitoring points at the site (documentation attached). The results of this treatment will be presented in the next annual monitoring report for this site presently being evaluated.

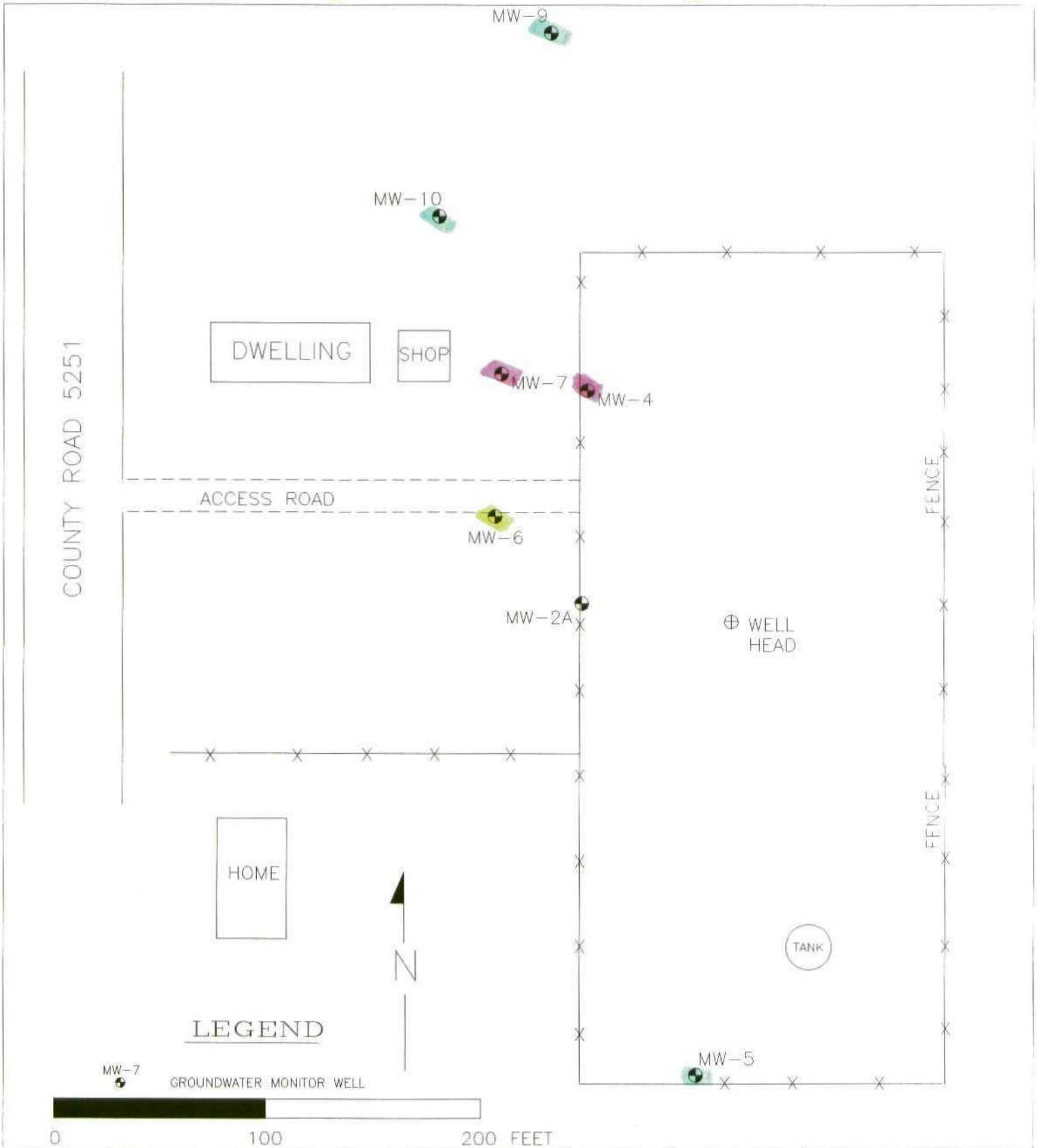
Summary

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



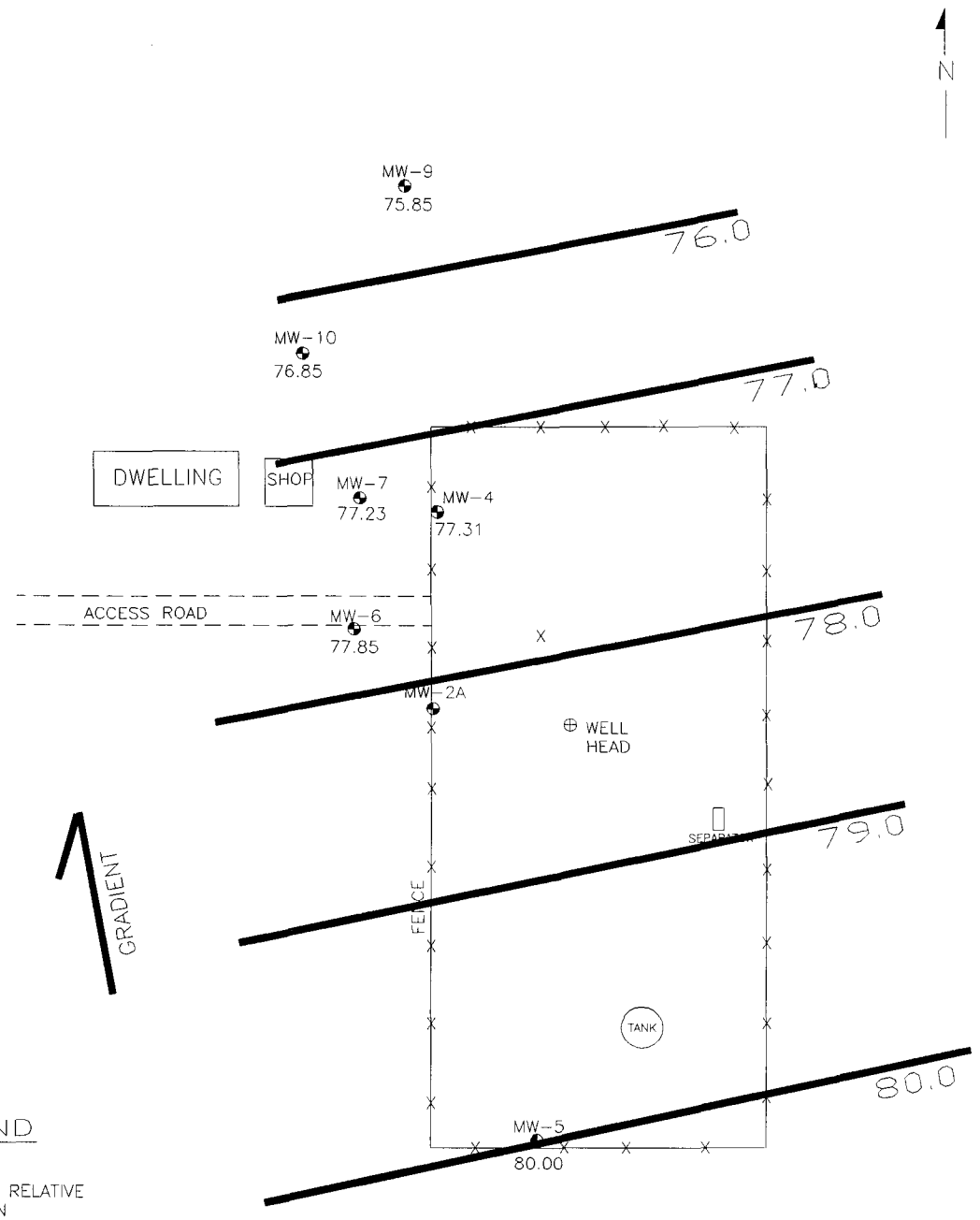
AMOCO PRODUCTION CO.
GCU 162 WELL SITE
SAN JUAN CO., NEW MEXICO

December 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 December 1996	BLAGG ENGINEERING, INC. CONSULTING ENGINEERING SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE:(505)632-1199	GW SURFACE CONTOUR 12/24/96 FIGURE 2 | DRWN BY: JCB 162SITE6 | PROJ MANG: JCB

ALPHA BIOSCIENCE COMPANY

December 26, 1996

Mr. Jeffrey C. Blagg, P.E.
Blagg Engineering, Inc.
Post Office Box 87
Bloomfield, New Mexico 87413

Dear Jeff:

As I mentioned to you the other day, I would like to test a new idea for enhancing insitu bioremediation of hydrocarbon contaminated groundwater.

One of our current treatment methods is to inject Alpha's microbial solution directly into the contaminated area by utilizing a high pressure "wand probe." Part of the microbial solution is Alpha's biocatalyst, which has proven it can stimulate and enhance natural bacteria to multiply rapidly and cleanse polluted water and soils. I would like to utilize the wellbore of an existing monitor or treatment well to produce biocatalyst insitu.

I propose filling a 1-1/2" x 5' joint of slotted PVC pipe with approximately 8 ounces of our dry catalyst material and lowering it down the wellbore into groundwater. The resulting fermentation process should produce biocatalyst continuously. Testing in Alpha's labs has shown that biocatalyst can be produced insitu.

I would expect to see lower BTEX and TPH reading as a direct result of the continuous production of Alpha's biocatalyst but, as you know, there are many factors that influence bioremediation. This biocatalyst is intended to supplement any current bioremediation technology being used. I can add media that our microbes are packaged in and also a slow release nitrogen fertilizer within the slotted PVC to make it a total bioremediation treatment. This passive treatment would greatly enhance the clean up of any site and possibly may be used with other types of treatments.

Should you have any site that we could use to test this technology, BTEX and TPH levels should be tested quarterly as well as the general chemistry of the groundwater.

I have included for your review a Material Safety Data Sheet on Alpha's Catalyst, Envirotech's analysis of the biocatalyst and Prague's Institute of Hygiene and Epidemiology microbiological and pathological analysis. This data has previously been submitted to the New Mexico Groundwater Bureau. Also attached is the test results obtained by the National Environmental Technology Applications Corporation (NETAC) and a letter dated August 11, 1989 from the EPA to Alpha Environmental.

Should you have any questions, please don't hesitate to give me a call.

Sincerely,

Bob Durbin

Bob Durbin

BD:cod

1119 Farmington Ave • Farmington, New Mexico 87401 • (505) 325-5036 • Fax (505) 326-2555

MATERIAL SAFETY DATA SHEET

ALPHA ENVIRONMENTAL BIOSYSTEMS, INC.
1600 S.W. Market
Lee's Summit, MO 64081

DATE: 04/01/96

EMERGENCY TELEPHONE: (816) 524-8811
FAX: (816) 525-5027

SECTION 1 - IDENTITY

Name:	AEB Catalyst
D.O.T.:	Class not regulated
Formula:	Proprietary
Chemical Family:	Aqueous solution of various natural extracts of Grasses.

SECTION 2 - PHYSICAL & CHEMICAL CHARACTERISTICS FIRE AND EXPLOSION DATA

Boiling Point	100C	Fire Extinguisher Media	N/A
Specific Gravity	1.00 +/- .01	Melting Point	N/A
Percent Volatile by Vol	N/A	Vapor Pressure mm/Hg	N/A
Flammable Limit	N/A	Vapor Density Air =1	N/A
Reactivity with water	No	Solubility in Water	Complete
Auto-Ignite Temperature	N/A	Flash Point	N/A
Evaporation Rate	Same as water		
Appearance	Clear, odorless, colorless		
Odor	None		

Special Fire Fighting Procedures:

Special Fire Fighting Procedures	N/A
Unusual Fire and Explosion Hazards	None

SECTION III - PHYSICAL HAZARDS

Stability	Stable	Incompatible Substance	None known
Polymerization	No	Hazardous Decomposition	No

SECTION IV - HEALTH HAZARDS

Health Hazards, Acute and Chronic	None
Conditions Aggravated by Exposure	None
Carcinogenicity	None

NOT FOR HUMAN CONSUMPTION

Emergency First Aid Procedures	None

SECTION V - SPECIAL PROTECTION

Respiratory Protection	None
Ventilation Required	None
Exhaust Required	None
Protective Clothing	None

SECTION VI - PRECAUTIONS FOR HANDLING AND USE

Precautions to be taken in handling	None - not for human consumption
Precautions to be taken in case of spill	None
Disposal procedures	None - Environmentally compatible to living Organisms, soil, and water. Follow all Federal, State, and Local regulations for non-hazardous waste disposal

THE INFORMATION ON THIS MATERIAL SAFETY SHEET REFLECTS THE LATEST INFORMATION AND DATA THAT WE HAVE ON HAZARDS, PROPERTIES, AND HANDLING OF THIS PRODUCT UNDER THE RECOMMENDED CONDITIONS OF USE. THIS MATERIAL SAFETY DATA SHEET WAS PREPARED TO COMPLY WITH 29 CFR 1910.1200.

Prepared by
Alpha Environmental Biosystems, Inc.
catalyst.msd

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 11, 1989

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Mr. H. Eugene Douglas, President
Alpha Environmental
7748 Highway 290 West
Austin, Texas 78736

Dear Mr. Douglas:

You are hereby notified that the technical product data submission on the biological additive "AE BioSea Process" has been received by the U.S. Environmental Protection Agency (EPA) and satisfies the data submission requirements contained in Section 300.86 of Subpart H of the National Contingency Plan (NCP) as amended July 18, 1984. In accordance with the provisions in Section 300.83, the technical product data will be maintained on file by the Emergency Response Division. Finally, pursuant to Section 300.86, we will be listing "AE BioSea Process" on the NCP Product Schedule under biological additives. The On-Scene Coordinator may authorize the use of the biological additive on releases of oil into navigable waters on a case-by-case basis.

The listing of "AE BioSea Process" on the NCP Product Schedule does not constitute approval, certification, authorization, licensing, or promotion of the product; nor does it imply compliance with any criteria or minimum standards for such agents. Therefore, to avoid possible misinterpretation or misrepresentation, any label, advertisement or technical literature that refers to the placement of the product on the NCP Product Schedule must either reproduce in its entirety this letter of notification or include the disclaimer provided in Section 300.86(e) of Subpart H. Failure to comply with these restrictions or any improper reference to EPA in an attempt to demonstrate approval or acceptance of the product will constitute grounds for removal of the product from the Schedule.

You are required to notify EPA of any changes in composition or in the formulation or handling procedures for your product. On the basis of this notice, EPA may require retesting of the product.

If you have any questions concerning this letter, please contact Mr. John Cunningham of my staff on (202) 382-4130.

Sincerely,

Timothy Fields (for H.L.)

Henry L. Longest II
Director
Office of Emergency and Remedial Response

BLAGG ENGINEERING INC.

MONITOR WELL QUARTERLY MONITORING DATA

DATE: 9/6/96 PROJECT NO: _____

CLIENT: AMOCO CHAIN-OF-CUSTODY NO: ANAITAS 2265

LOCATION: GCU COM F 162

PROJECT MANAGER: JCB SAMPLER: NTV

MONITOR WELL DATA

WELL #	OVM (PPM)	pH	COND. (µMHO)	TEMP (°F)	D.T.W. (FT.)	T.D. (FT.)	BAILED (GAL.)	PRODUCT (IN.)	SAMPL TIME
4	–	7.1	1700	62	21.40	24.09	1.50	–	1115
5	–	6.9	1800	61	22.31	2508	1.50	–	1035
6	–	7.2	1800	65	20.57	26.77	3.25	–	1300
7	–	7.1	1700	65	19.90	25.30	2.75	–	1340
9	–	7.3	1800	63	12.08	19.60	3.75	–	1215
10	–	7.2	1500	63	13.62	16.29	1.50	–	1145

Notes: DTW = Depth to water
TD = Total depth
Bailed = Volume of water bailed from well prior to sampling.
Ideally a minimum of 3 well volumes:
1.25" well = 0.76 quarts per foot of water.
2" well = 0.49 gallons per foot of water.
4" well = 1.95 gallons per foot of water.
Note well diameter if not standard 2".

ANAITAS
ENVIRONMENTAL LABS

September 10, 1996

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

Dear Mr. Velez:

Enclosed are the results for the analysis of the samples received on September 6, 1996. The samples were from the GCU Com F 162 location. Analysis for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)was 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.

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

2265

ANAITAS ENVIRONMENTAL LABS

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

CHAIN OF CUSTODY

Page 1 of 1

PROJECT MANAGER:
Anaitas Lab I.D.:

Company: BLAGG
Address:

Phone:
Fax:

Bill To: SAME AS ABOVE
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):
MW # 5	9/6/96	1035	WATER					✓																				
MW # 9	9/6/96	1215	WATER					✓																				
MW #10	9/6/96	1145	WATER					✓																				
MW # 6	9/6/96	1300	WATER					✓																				
MW # 4	9/6/96	1115	WATER					✓																				
MW # 7	9/6/96	1340	WATER					✓																				

COMMENTS: PRESERV. - $HgCl_2$ & COOL

Project Information	Sample Receipt
Proj. #:	No. Containers:
Proj. Name: Gucom F	Custody Seals: Y / N / NA
P. O. No: #162	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: 9/6/96	Date: 9/6/96	Date:
Company: BLAGG	Company: BLAGG	Company:
Time: SEE SAMPLE ID	Time: 1436	Time:

Received By:	Received By:	Received By:
Signature:	Signature:	Signature: Lourdes Flores
Date:	Date:	Date: 9/6/96
Company:	Company:	Company: Anaitas
Time:	Time:	Time: 14:36

Please Fill Out Thoroughly.

Shaded areas for lab use only.

White/Yellow: Anaitas
Pink: Client

ANAITAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Report Date:	09/10/96
Sample ID:	MW - 5	Date Sampled:	09/06/96
Lab ID:	4923	Date Received:	09/06/96
Sample Matrix:	Water	Date Analyzed:	09/09/96
Preservative:	Cool, $HgCl_2$		
Condition:	+		

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	102	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:	GCU Com F 162	Report Date:	09/10/96
Sample ID:	MW - 9	Date Sampled:	09/06/96
Lab ID:	4924	Date Received:	09/06/96
Sample Matrix:	Water	Date Analyzed:	09/09/96
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	97	88 - 110%
Bromofluorobenzene	99	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:	GCU Com F 162	Report Date:	09/10/96
Sample ID:	MW - 10	Date Sampled:	09/06/96
Lab ID:	4925	Date Received:	09/06/96
Sample Matrix:	Water	Date Analyzed:	09/09/96
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	101	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:	GCU Com F 162	Report Date:	09/10/96
Sample ID:	MW - 6	Date Sampled:	09/06/96
Lab ID:	4926	Date Received:	09/06/96
Sample Matrix:	Water	Date Analyzed:	09/09/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	1.64	1.25
Toluene	ND	1.25
Ethylbenzene	ND	1.25
m,p-Xylenes	84.7	2.50
o-Xylene	ND	1.25

Total BTEX	**86.3**

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	119	88 - 110%
Bromofluorobenzene	116	86 - 115%

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

Comments: High surrogate recoveries are due to hydrocarbon interferences at their respective retention times.

Analyst

Review

ANAITAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Report Date:	09/10/96
Sample ID:	MW - 4	Date Sampled:	09/06/96
Lab ID:	4927	Date Received:	09/06/96
Sample Matrix:	Water	Date Analyzed:	09/09/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	188	10.0
Toluene	54.6	10.0
Ethylbenzene	142	10.0
m,p-Xylenes	1,100	20.0
o-Xylene	287	10.0

Total BTEX	**1,780**

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	97	88 - 110%
Bromofluorobenzene	96	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:	GCU Com F 162	Report Date:	09/10/96
Sample ID:	MW - 7	Date Sampled:	09/06/96
Lab ID:	4928	Date Received:	09/06/96
Sample Matrix:	Water	Date Analyzed:	09/09/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	142	25.0
Toluene	104	25.0
Ethylbenzene	132	25.0
m,p-Xylenes	1,300	50.0
o-Xylene	428	25.0

Total BTEX	**2,110**

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	96	88 - 110%
Bromofluorobenzene	95	86 - 115%

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 hydrocarbon: Water
Lab ID: MB35317

Report Date: 09/10/96
Date Analyzed: 09/09/96

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	100	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:	4927Dup	Report Date:	09/10/96
Sample Matrix:	Water	Date Sampled:	09/06/96
Preservative:	Cool, HgCl2	Date Received:	09/06/96
Condition:	Intact	Date Analyzed:	09/09/96

Target Analyte	Original Conc. (ug/L)	Duplicate Conc. (ug/L)	Acceptance Range (ug/L)
Benzene	188	182	151 - 220
Toluene	54.6	52.4	42.9 - 64.1
Ethylbenzene	142	136	90.8 - 187
m,p-Xylenes	1,100	1,070	NE
o-Xylene	287	277	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	97	88 - 110%
	Bromofluorobenzene	94	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:	4923Spk	Report Date:	09/10/96
Sample Matrix:	Water	Date Sampled:	09/06/96
Preservative:	Cool, HgCl2	Date Received:	09/06/96
Condition:	Intact	Date Analyzed:	09/09/96

Target Analyte	Spike Added (ug/L)	Original Conc. (ug/L)	Spiked Sample Conc. (ug/L)	% Recovery	Acceptance Limits (%)
Benzene	10	ND	10.3	102%	39 -150
Toluene	10	ND	10.3	101%	46 - 148
Ethylbenzene	10	ND	10.1	101%	32 - 160
m,p-Xylenes	20	ND	20.0	99%	NE
o-Xylene	10	ND	9.93	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	107	88 - 110%
Bromofluorobenzene	102	86 - 115%

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

Comments:

Analyst

Review

BLAGG ENGINEERING INC.

MONITOR WELL QUARTERLY MONITORING DATA

DATE: 12/24/96 PROJECT NO: _____

CLIENT: Amoco CHAIN-OF-CUSTODY NO: ANAITAS 2116

LOCATION: GCU Com F 162

PROJECT MANAGER: JCB SAMPLER: NJV

MONITOR WELL DATA

WELL #	OVM (PPM)	pH	COND. (μMHO)	TEMP (°F)	D.T.W. (FT.)	T.D. (FT.)	BAILED (GAL.)	PRODUCT (IN.)	SAMP Time
4	-	6.9	2100	-	21.56	24.09	1.25	-	0910
5	-	7.0	1700	-	22.50	25.08	1.50	-	0845
6	-	7.0	2000	-	20.83	26.77	3.00	-	0940
7	-	7.1	1800	-	20.16	25.30	2.50	-	1005
9	-	7.3	2200	-	12.65	17.60	3.50	-	1115
10	-	7.0	1500	-	13.77	16.29	1.25	-	1045

Notes: DTW = Depth to water
TD = Total depth
Bailed = Volume of water bailed from well prior to sampling.
Ideally a minimum of 3 well volumes:
1.25" well = 0.76 quarts per foot of water.
2" well = 0.49 gallons per foot of water.
4" well = 1.95 gallons per foot of water.
Note well diameter if not standard 2".

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ANAITAS ENVIRONMENTAL LABS

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CHAIN OF CUSTODY

Page ____ of ____

PROJECT MANAGER:
Analytica Lab I.D.:

Company:
Address:

Phone:
Fax:

Bill To: Blagg Engn.
Company:
Address:

Sample ID	Date	Time	Matrix	Lab ID	ORGANIC ANALYSES: NH3	WATER ANALYSES	METALS	COMMENTS
MW-4	12/24/96		H2O		X			NH3
MW-6	12/24/96		"		X			
MW-7	12/24/96		"		X			

Gc with Blagg's GCU Com F162 per BoB

Project Information	Sample Receipt
Proj. #: GCU #162	No. Containers:
Proj. Name: Amoco	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 / Date:	Signature / Date: BOB	Signature / Date:
Company: / Time:	Company: / Time:	Company: / Time:
Received By:	**Received By:**	**Received By:**
Signature / Date:	Signature / Date:	Signature / Date: 12/31/96
Company: / Time:	Company: / Time:	Company: Anadrill / Time:

Please Fill Out Thoroughly.

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White/Yellow: Analytica
Pink: Client

ANAITAS ENVIRONMENTAL LABS.

General Water Quality

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Date Reported:	01/16/97
Sample ID:	MW - 4	Date Sampled:	12/24/96
Laboratory ID:	6078	Time Sampled:	NA
Sample Matrix:	Water	Date Received:	12/31/96

Parameter	Analytical Result	Units
General		
Ammonia - N.....	0.45	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.

Review

ANAITAS ENVIRONMENTAL LABS

General Water Quality
Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Date Reported:	01/16/97
Sample ID:	MW - 6	Date Sampled:	12/24/96
Laboratory ID:	6079	Time Sampled:	NA
Sample Matrix:	Water	Date Received:	12/31/96

Parameter	Analytical Result	Units
General		
Ammonia - N.....	0.66	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.

Review

ANAITAS ENVIRONMENTAL LABS

General Water Quality

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Date Reported:	01/16/97
Sample ID:	MW - 7	Date Sampled:	12/24/96
Laboratory ID:	6080	Time Sampled:	NA
Sample Matrix:	Water	Date Received:	12/31/96

Parameter	Analytical Result	Units
General		
Ammonia - N.....	0.60	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.

Review

ANAITAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Report Date:	01/03/97
Sample ID:	MW #5	Date Sampled:	12/24/96
Lab ID:	6063	Date Received:	12/27/96
Sample Matrix:	Water	Date Analyzed:	12/31/96
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	105	88 - 110%
Bromofluorobenzene	89	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:	GCU Com F 162	Report Date:	01/03/97
Sample ID:	MW #9	Date Sampled:	12/24/96
Lab ID:	6064	Date Received:	12/27/96
Sample Matrix:	Water	Date Analyzed:	12/31/96
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	104	88 - 110%
Bromofluorobenzene	90	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:	GCU Com F 162	Report Date:	01/03/97
Sample ID:	MW #10	Date Sampled:	12/24/96
Lab ID:	6065	Date Received:	12/27/96
Sample Matrix:	Water	Date Analyzed:	12/31/96
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	100	88 - 110%
Bromofluorobenzene	99	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:	GCU Com F 162	Report Date:	01/03/97
Sample ID:	MW #6	Date Sampled:	12/24/96
Lab ID:	6066	Date Received:	12/27/96
Sample Matrix:	Water	Date Analyzed:	12/31/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	0.67	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	1.24	1.00
o-Xylene	ND	0.50

Total BTEX	**1.91**

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	103	88 - 110%
Bromofluorobenzene	100	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:	GCU Com F 162	Report Date:	01/03/97
Sample ID:	MW #7	Date Sampled:	12/24/96
Lab ID:	6067	Date Received:	12/27/96
Sample Matrix:	Water	Date Analyzed:	12/31/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	34.3	2.50
Toluene	15.3	2.50
Ethylbenzene	14.5	2.50
m,p-Xylenes	113	5.00
o-Xylene	46.8	2.50

Total BTEX	**224**

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	103	88 - 110%
Bromofluorobenzene	104	86 - 115%

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

Comments:

Analyst

Review

ANALYTAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	GCU Com F 162	Report Date:	01/03/97
Sample ID:	MW #4	Date Sampled:	12/24/96
Lab ID:	6068	Date Received:	12/27/96
Sample Matrix:	Water	Date Analyzed:	12/31/96
Preservative:	Cool, $HgCl_2$		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	42.3	5.00
Toluene	14.6	5.00
Ethylbenzene	39.2	5.00
m,p-Xylenes	332	10.0
o-Xylene	98.2	5.00

Total BTEX	**526**

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	94	88 - 110%
Bromofluorobenzene	93	86 - 115%

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

Comments:

Analyst

Review

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ANAITAS ENVIRONMENTAL LABS

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CHAIN OF CUSTODY

Page 1 of 1

PROJECT MANAGER:
Anaitas Lab I.D.:

Company: BLAGG
Address:

Phone:
Fax:

Bill To: SAME AS ABOVE
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 #5	12/24/96	0845	WATER					✓																					PRESERV. - cool & HgCl2
MW #9	12/24/96	1115	WATER					✓																					" " "
MW #10	12/24/96	1045	WATER					✓																					" " "
MW #6	12/24/96	0940	WATER					✓																					" " "
MW #7	12/24/96	1005	WATER					✓																					" " "
MW #4	12/24/96	0910	WATER					✓																					" " "

Project Information	Sample Receipt
Proj. #:	No. Containers:
Proj. Name: ECM COM F162	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 / Date: Nelson Velez 12/24/96	Signature / Date: Nelson Velez 12/27/96	Signature / Date:
Company: BLAGG Time: SEE SAMPLE ID	Company: BLAGG Time: 1317	Company: Time:
Received By:	**Received By:**	**Received By:**
Signature / Date:	Signature / Date:	Signature / Date: 12/27/96
Company: Time:	Company: Time:	Company: Time: 12:17

Please Fill Out Thoroughly.

Shaded areas for lab use only.

White/Yellow: Anaitas
Pink: Client

ANAITAS ENVIRONMENTAL LABS

January 3, 1997

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

Dear Mr. Velez:

Enclosed are the results for the analysis of the samples received December 27, 1996. The samples were from the GCU Com F 162 location. Analysis for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) was 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.

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 ID:	Water	Report Date:	01/06/97
Lab ID:	MB35430	Date Analyzed:	12/31/96

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	96	88 - 110%
Bromofluorobenzene	94	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:	6067Dup	Report Date:	01/03/97
Sample Matrix:	Water	Date Sampled:	12/24/96
Preservative:	Cool, $HgCl_2$	Date Received:	12/27/96
Condition:	Intact	Date Analyzed:	12/31/96

Target Analyte	Original Conc. (ug/L)	Duplicate Conc. (ug/L)	Acceptance Range (ug/L)
Benzene	34.3	35.8	27.5 - 42.5
Toluene	15.3	14.8	11.4 - 18.7
Ethylbenzene	14.5	14.8	8.76 - 20.6
m,p-Xylenes	113	105	NE
o-Xylene	46.8	44.2	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	102	88 - 110%
	Bromofluorobenzene	102	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:	6063Spk	Report Date:	01/03/97
Sample Matrix:	Water	Date Sampled:	12/24/96
Preservative:	Cool, HgCl2	Date Received:	12/27/96
Condition:	Intact	Date Analyzed:	12/31/96

Target Analyte	Spike Added (ug/L)	Original Conc. (ug/L)	Spiked Sample Conc. (ug/L)	% Recovery	Acceptance Limits (%)
Benzene	10	ND	9.90	97%	39 -150
Toluene	10	ND	9.70	93%	46 - 148
Ethylbenzene	10	ND	9.83	98%	32 - 160
m,p-Xylenes	20	ND	19.6	97%	NE
o-Xylene	10	ND	9.95	100%	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	92	88 - 110%
Bromofluorobenzene	93	86 - 115%

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

Comments:

Analyst

Review