

3R - 381

REPORTS

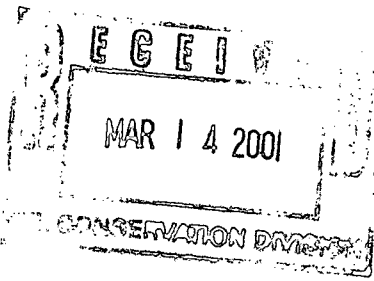
DATE:

MAR 7 2001

381

BLAGG ENGINEERING, INC.

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



March 7, 2001

Mr. William C. Olson, Hydrologist
New Mexico Oil Conservation Division-NMOCD
Environmental Bureau
1220 St. Francis Drive
Santa Fe, New Mexico 87505

**Re: BP Amoco (formerly Amoco Production Company)
Groundwater Monitoring Report
Gallegos Canyon Unit (GCU) # 170, Unit K, Sec. 35, T29N, R12W, NMPM
San Juan County, New Mexico**

Dear Mr. Olson:

BP Amoco has retained Blagg Engineering, Inc. to conduct environmental monitoring of groundwater at the GCU # 170.

Groundwater monitoring has been undertaken since the June, 1995. Since June, 1996, BP Amoco has followed its NMOCD approved groundwater work plan and continues to monitor the site on an annual basis. No permanent closure is requested at this time.

If you have any questions concerning the enclosed documentation, please contact either myself or Jeffrey C. Blagg at the address or phone number listed above. Thank you for your cooperation and assistance.

Respectfully submitted:
Blagg Engineering, Inc.

Nelson J. Velez
Staff Geologist

Attachment: Groundwater Report

cc: Mr. Denny Foust, Environmental Geologist, NMOCD District III Office, Aztec, NM
Mr. Buddy Shaw, Environmental Coordinator, BP Amoco, Farmington, NM (without lab reports)

BP Amoco - GCU # 170 - Separator Pit Ne/4 Sw/4 Sec. 35, T29N, R12W

Site Assessment Date: 5/26/92 (Documentation Included)
Pit closure Dates: 2/27/95 (blow pit) & 3/27/95 (sep. pit)
(Documentation Included)
Monitor Well Installation Date: 6/27/95
Monitor Well Sampling Dates: 6/28/95, 9/8/95, 12/7/95, 3/8/96, 6/4/96, 6/24/97, 6/8/98,
5/28/99, & 5/24/00

Groundwater Monitor Well Sampling Procedures:

Groundwater samples were collected from site monitor wells (*Figure 1*) following US EPA: 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 US EPA Method 8020 or 8021. The samples were preserved cool and with either mercuric chloride or hydrochloric acid 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 and Flow Direction Information:

The BTEX results for the 1996 through 2000 sampling events are summarized in the following table. MW #'s 1 and 2 BTEX data demonstrate levels below 25% of the New Mexico Water Quality Control Commission's (NMWQCC) groundwater allowable concentrations in four (4) out of five (5) sampling events. During the September 8, 1995 sampling event, an unexplainable anomaly occurred within those wells elevating the benzene concentration above the NMWQCC's standards. The anomaly encountered is inscrutable in nature; however, based on the previous and following sampling events, it does not appear that those anomalous values are remotely representative of the benzene concentration in those wells. Therefore, it was determined to terminate sampling of those wells until future information or evaluation suggest otherwise. Benzene, toluene, and total xylenes within MW # 3 exceeded NMWQCC standards from June, 1995 through June, 1996 sampling events. Total xylenes since June, 1998 has decreased below the NMWQCC standards while the benzene concentration, although decreasing, continues to exceed the NMWQCC standard. Toluene values reported has decreased since June, 1996, but currently appears to be in a state of fluctuation.

According to the groundwater gradient maps (*Figures 2 through 5*), the groundwater flow appears to be due west or in a slight west-northwest direction. Whereas, the flow direction during the May, 2000 sampling event (*Figure 6*) demonstrated a northwest direction.

Summary and/or Recommendations:

Based on the aforementioned and enclosed documentation, the soil and groundwater at the excavated separator pit area appears to have been remediated during the pit closure activities. However, the results from MW #3 concludes that groundwater contamination continues to exist in an untreated and undefined area on the site. Therefore, it is suggested to further investigate groundwater up and down gradient of MW #3 as well as the immediate down gradient direction of the separator pit. It is also suggested to continue annual monitoring of MW #3 to evaluate the decreasing trend observed in the BTEX values by apparent natural attenuation. Finally, the pit closure documentation for the blow pit is included within this report and it appears that its location (*Figures 2-6* - west-northwest and occasionally down gradient of MW #3) can be utilized as a background reference for the down gradient delineation of MW #3.

All aspects of the BP Amoco's groundwater work plan dated October 22, 1996 and approved by NMOCD with lettered dated February 7, 1997, has been adhered to.

AMOCO GROUNDWATER MONITOR WELL LABORATORY RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

GCU # 170 - SEPARATOR PIT
UNIT K, SEC. 35, T29N, R12W

REVISED DATE: MAY 31, 2000
FILENAME: (17-2Q-00.WK4) NJV

SAMPLE DATE	MONITOR WELL No:	D.T.W. (ft)	T.D. (ft)	TDS (mg/L)	COND. (umhos/cm)	pH	PRODUCT (ft)	BTEX EPA METHOD 8021 (PPB)			
								Benzene	Toluene	Ethyl Benzene	Total Xylene
28-Jun-95	MW #1	10.50	15.00		1400	7.4		0.2	0.2	0.3	0.9
08-Sep-95		9.56			1400	7.8		206	82.3	4.9	67.0
07-Dec-95		9.91			1700	6.8		ND	0.37	ND	ND
08-Mar-96		10.93			1200	6.6		ND	0.97	ND	ND
04-Jun-96		10.74			1300	6.7		ND	ND	ND	ND
28-Jun-95	WP #2	10.45	15.00		1600	7.4		1.9	38.3	0.2	0.8
08-Sep-95		9.35			1300	7.4		47.1	19.8	1.2	17.6
07-Dec-95		9.45			1600	7.2		ND	ND	ND	ND
08-Mar-96		10.24			1700	7.0		ND	ND	ND	ND
04-Jun-96		10.00			2100	6.9		ND	ND	ND	ND
28-Jun-95	MW #3	10.45	15.00		1500	7.4		2115.7	4485.8	318	2704.4
08-Sep-95		9.60			1700	7.8		1200	815	131	661
07-Dec-95		9.80			1800	7.0		4830	7680	294	2760
08-Mar-96		10.74			1500	6.6		5020	6410	105	2603
04-Jun-96		10.57			1600	6.6		5140	5560	116	2631
24-Jun-97		10.72			1700	6.9		1115	542	88.2	850
08-Jun-98		10.69			1600	7.3		921	1020	16.1	279.4
28-May-99		10.29			1700	7.0		69.3	78.1	3	88.7
24-May-00		10.70			1700	7.1		1100	770	19	410

FIGURE 1



MW #3

SHED

⊕ WELL
HEAD

FENCE

PROD
TANK

S
E
P

FENCE

TANK
PIT

● 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 25 50 FT.

AMOCO PRODUCTION COMPANY

GCU 170

NE/4 SW/4 SEC. 35, T29N, R12W
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: 170-SM

REVISED: 1/18/97 NJV

SITE
MAP

3/96

FIGURE 2 (2nd 1/4, 1996)



APPROXIMATE LOCATION
OF BLOW PIT TRENCH

GROUNDWATER
FLOW
DIRECTION

89

SHED

MW #3
(89.06)

90

⊕ WELL
HEAD

ORIGINAL
PIT
EXCAVATION

FENCE

PROD
TANK

S
E
P

FENCE

TANK
PIT

MW #2
(90.80)

91

MW #1
(91.09)

1 INCH = 25 FT.

0 25 50 FT.

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.

Top of Well Elevation

MW #1 ——— (101.83)

MW #2 ——— (100.80)

MW #3 ——— (99.63)

⊙ MW #1 Groundwater Elevation
(91.09) as of 6/4/96.

AMOCO PRODUCTION COMPANY

GCU 170

NE/4 SW/4 SEC. 35, T29N, R12W

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 SAMP.

DRAWN BY: NJV

FILENAME: 06-04-GW

REVISED: 1/18/97 NJV

GROUNDWATER
GRADIENT
MAP
06/96

FIGURE 3 (2nd 1/4, 1997)



APPROXIMATE LOCATION
OF BLOW PIT TRENCH

MW #3 •
(88.91)

SHED

89.50

⊕ WELL
HEAD

90.00

GROUNDWATER
FLOW
DIRECTION

90.50

ORIGINAL
PIT
EXCAVATION

FENCE

PROD
TANK

FENCE

TANK
PIT

• MW #2
(90.75)

S
E
P

• MW #1
(90.87)

1 INCH = 25 FT.

0 25 50 FT.

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.

Top of Well Elevation

MW #1 ——— (101.83)

MW #2 ——— (100.80)

MW #3 ——— (99.63)

• MW #1 Groundwater Elevation
(90.87) as of 6/24/97.

AMOCO PRODUCTION COMPANY

GCU 170

NE/4 SW/4 SEC. 35, T29N, R12W

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 SAMP.

DRAWN BY: NJV

FILENAME: 06-24-97

REVISED: 1/12/98 NJV

GROUNDWATER

GRADIENT
MAP

06/97

FIGURE 4 (2nd 1/4, 1998)



APPROXIMATE LOCATION
OF BLOW PIT TRENCH

MW #3
(88.94)

SHED

89.50

⊕ WELL
HEAD

90.00

90.50

GROUNDWATER
FLOW
DIRECTION

ORIGINAL
PIT
EXCAVATION

FENCE

PROD
TANK

FENCE

TANK
PIT

MW #2
(90.87)

MW #1
(90.85)

1 INCH = 25 FT.

0 25 50 FT.

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.

Top of Well Elevation

MW #1 (101.83)

MW #2 (100.80)

MW #3 (99.63)

MW #1 Groundwater Elevation
(90.85) as of 6/8/98.

AMOCO PRODUCTION COMPANY

GCU 170

NE/4 SW/4 SEC. 35, T29N, R12W

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 SAMP.

DRAWN BY: NJV

FILENAME: 06-08-98

REVISED: 6/10/98 NJV

GROUNDWATER

GRADIENT

MAP

06/98

FIGURE 5 (2nd 1/4, 1999)



APPROXIMATE LOCATION
OF BLOW PIT TRENCH

MW #3
(89.34)

SHED

90.00

90.50

⊕ WELL
HEAD

GROUNDWATER
FLOW
DIRECTION

91.00

ORIGINAL
PIT
EXCAVATION

FENCE

PROD
TANK

FENCE

MW #2
(91.37)

S
E
P

TANK
PIT

MW #1
(91.37)

1 INCH = 25 FT.

0 25 50 FT.

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.

Top of Well Elevation

MW #1 — (101.83)

MW #2 — (100.80)

MW #3 — (99.63)

⊕ MW #1 Groundwater Elevation
(91.37) as of 5/28/99.

AMOCO PRODUCTION COMPANY

GCU 170

NE/4 SW/4 SEC. 35, T29N, R12W

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 SAMP.

DRAWN BY: NJV

FILENAME: 05-28-99

REVISED: 6/2/99 NJV

GROUNDWATER

GRADIENT
MAP

06/99

FIGURE 6
(2nd 1/4, 2000)



APPROXIMATE LOCATION
OF BLOW PIT TRENCH

MW #3 •
(88.93)

89.00

SHED

⊕ WELL
HEAD

89.50

GROUNDWATER
FLOW
DIRECTION

90.00

ORIGINAL
PIT
EXCAVATION

FENCE

PROD
TANK

S
E
P

FENCE

TANK
PIT

• MW #2
(89.94)

• MW #1
(90.76)

1 INCH = 25 FT.

0 25 50 FT.

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.

Top of Well Elevation

MW #1 — (101.83)

MW #2 — (100.80)

MW #3 — (99.63)

• MW #1 Groundwater Elevation
(90.76) as of 5/24/00.

AMOCO PRODUCTION COMPANY

GCU 170

NE/4 SW/4 SEC. 35, T29N, R12W

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 SAMP.

DRAWN BY: NJV

FILENAME: 05-24-00

REVISED: 5/31/00 NJV

GROUNDWATER

GRADIENT

MAP

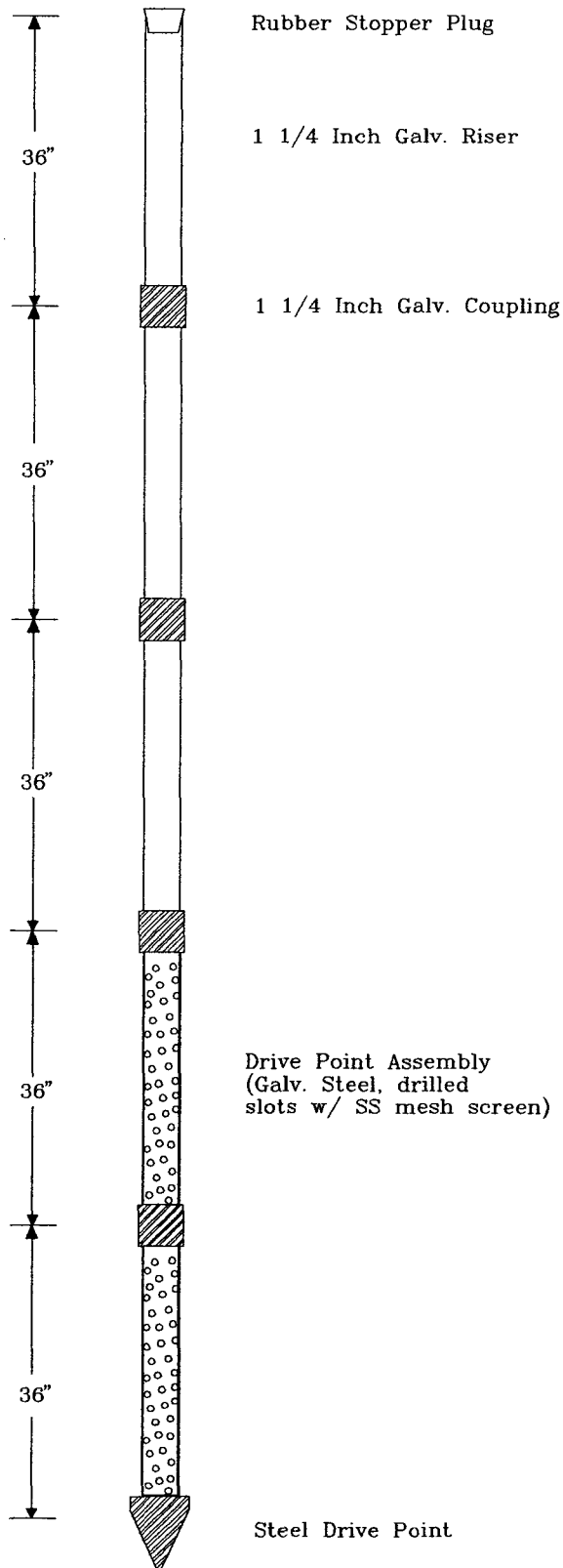
05/00

WELL POINT #1 (MW-1)

AMOCO PRODUCTION COMPANY
GCU # 170
DRIVE POINT MONITOR WELL
CONSTRUCTION & COMPLETION

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

PROJECT: 1/4ly MW Samp.
DRAFTED BY: NSV
DATE: MAY '95
FILENAME: WP-1



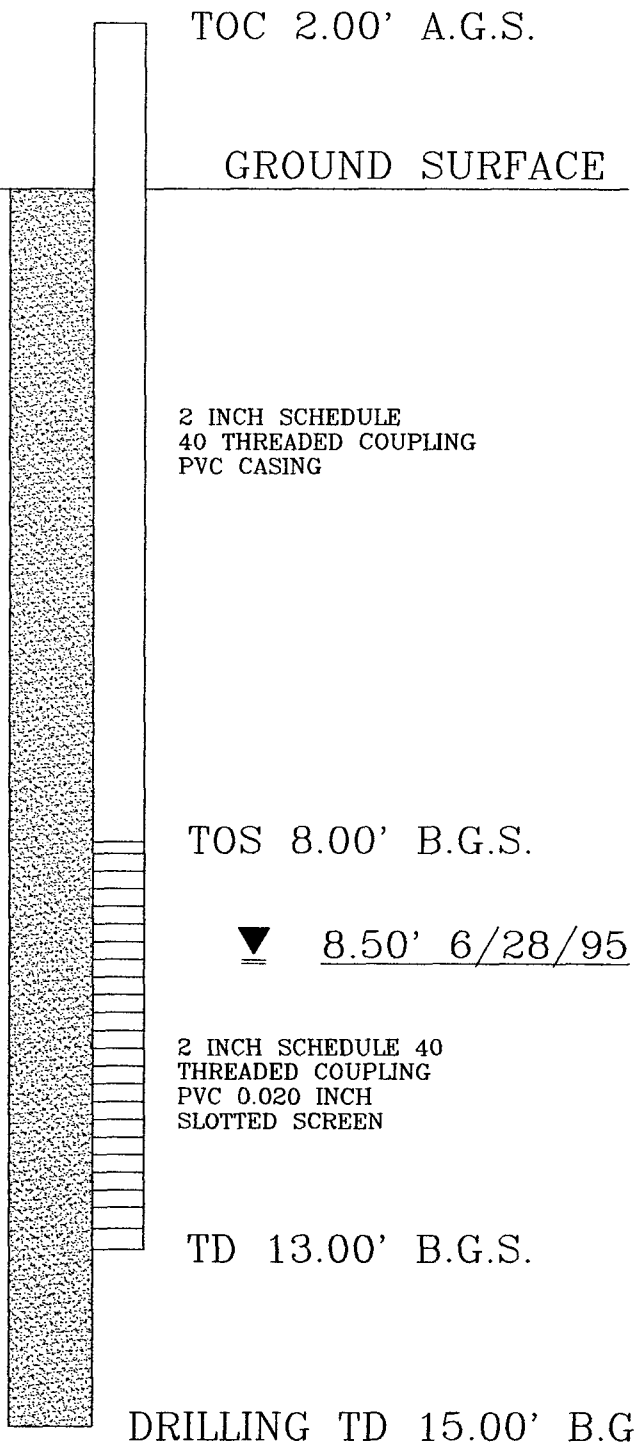
MONITOR WELL #2

AMOCO PRODUCTION COMPANY
GCU COM 1 # 181E
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: MAY '95
FILENAME: MW-2

MOSTLY DARK
YELLOWISH SAND,
NON COHESIVE,
SLIGHTLY MOIST
TO SATURATED (@
WATER TABLE),
FIRM TO SLIGHTLY
DENSE, SOME SMALL
GRAVEL NEAR AND
WITHIN GROUNDWATER,
SLIGHT HC ODOR
DETECTED PHYSICALLY
FROM TOP OF WELL
CASING.



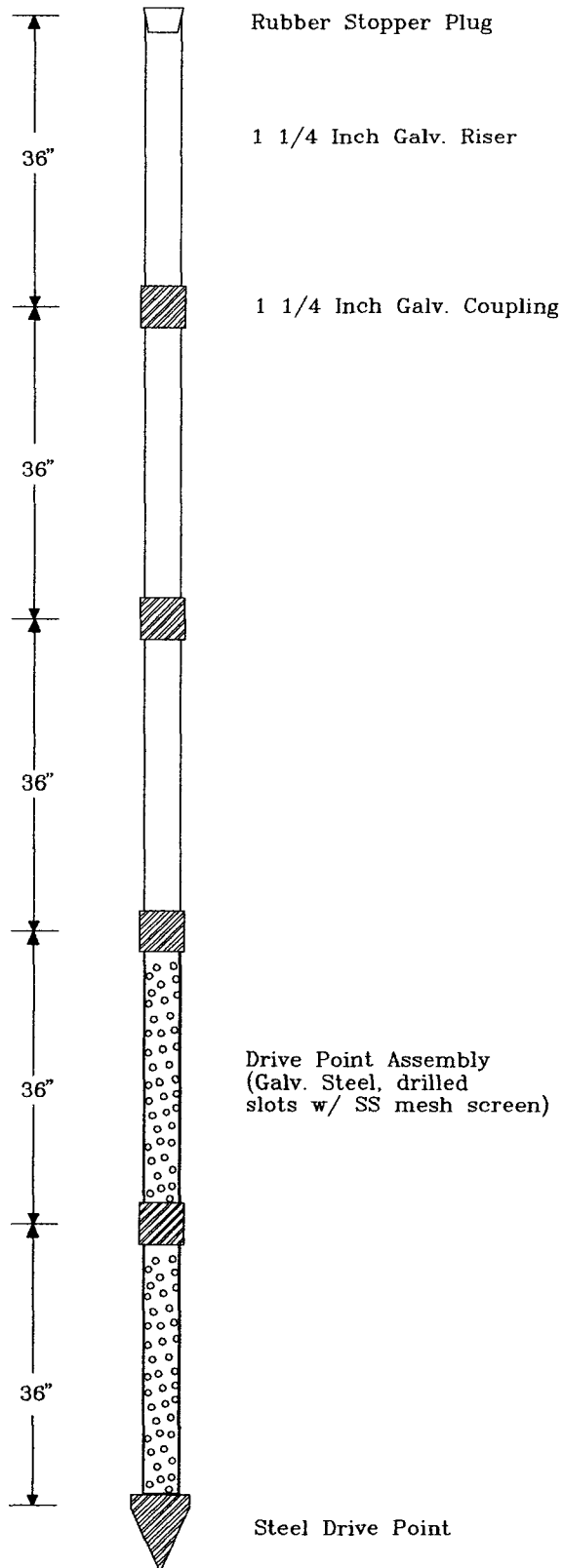
TOC	=	TOP OF CASING
TOS	=	TOP OF SCREEN
TD	=	TOTAL DEPTH
AGS	=	ABOVE GROUND SURFACE
BGS	=	BELOW GROUND SURFACE

WELL POINT #3 (MW-3)

AMOCO PRODUCTION COMPANY
GCU # 170
DRIVE POINT MONITOR WELL
CONSTRUCTION & COMPLETION

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

PROJECT: 1/4ly MW Samp.
DRAFTED BY: NJV
DATE: MAY '95
FILENAME: WP-3



BLAGG ENGINEERING INC.

MONITOR WELL QUARTERLY MONITORING DATA

DATE: 6-28-95

PROJECT NO: _____

CLIENT: Amoco

CHAIN-OF-CUSTODY NO: 3118

LOCATION: GC4 170

PROJECT MANAGER: NV

SAMPLER: REO

MONITOR WELL DATA

WELL #	WELL ELEV.	WATER ELEV.	DTW (FT)	T.D. (FT)	TEM °F	pH	COND. (uMHO)	BAILS (GAL)	PROD (IN)
WP-1	-	-	10.50	15.33	60.6	7.4	1400	5	-
WP-2	-	-	10.45	15.00	62.3	7.4	1600	6	-
WP-3	-	-	10.45	15.0	61.0	7.4	1500	5	-

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 = 24 oz. per foot of water. (2 bails)

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".

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *R.E. O'Neill*
Company: *Blagg Engineering*
Address: *P.O. Box 87*
City, State: *Bloomfield, NM 87413*

Date: *6/30/95*
COC No.: *3118*
Sample No. *7014*
Job No. *2-1000*

Project Name: *GCU 170*
Project Location: *WP-1*
Sampled by: *REO*
Analyzed by: *DC*
Type of Sample: *Water*

Date: *6/28/95* Time: *13:00*
Date: *6/29/95*

Aromatic Volatile Organics

<i>Component</i>	<i>Measured Concentration ug/L</i>	<i>Detection Limit Concentration ug/L</i>
<i>Benzene</i>	<i>0.2</i>	<i>0.2</i>
<i>Toluene</i>	<i>0.2</i>	<i>0.2</i>
<i>Ethylbenzene</i>	<i>0.3</i>	<i>0.2</i>
<i>m,p-Xylene</i>	<i>0.9</i>	<i>0.2</i>
<i>o-Xylene</i>	<i>ND</i>	<i>0.2</i>
	<i>TOTAL 1.6 ug/L</i>	

ND - Not Detectable

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

Approved by: *Da4*
Date: *6/30/95*

P. O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *R.E. O'Neill*
Company: *Blagg Engineering*
Address: *P.O. Box 87*
City, State: *Bloomfield, NM 87413*

Date: *6/30/95*
COC No.: *3118*
Sample No. *7015*
Job No. *2-1000*

Project Name: *GCU 170*
Project Location: *WP-2*
Sampled by: *REO*
Analyzed by: *DC*
Type of Sample: *Water*

Date: *6/28/95* Time: *13:20*
Date: *6/29/95*

Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
<i>Benzene</i>	<i>1.9</i>	<i>0.2</i>
<i>Toluene</i>	<i>38.3</i>	<i>0.2</i>
<i>Ethylbenzene</i>	<i>0.2</i>	<i>0.2</i>
<i>m,p-Xylene</i>	<i>0.8</i>	<i>0.2</i>
<i>o-Xylene</i>	<i>ND</i>	<i>0.2</i>
	<i>TOTAL 41.1 ug/L</i>	

ND - Not Detectable

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

Approved by: *[Signature]*
Date: *6/30/95*

P. O. BOX 2606 • FARMINGTON, NM 87499

— TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT —

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *R.E. O'Neill*
Company: *Blagg Engineering*
Address: *P.O. Box 87*
City, State: *Bloomfield, NM 87413*

Date: *6/30/95*
COC No.: *3118*
Sample No. *7016*
Job No. *2-1000*

Project Name: *GCU 170*
Project Location: *WP-3*
Sampled by: *REO*
Analyzed by: *DC*
Type of Sample: *Water*

Date: *6/28/95* Time: *13:35*
Date: *6/29/95*

Aromatic Volatile Organics

<i>Component</i>	<i>Measured Concentration ug/L</i>	<i>Detection Limit Concentration ug/L</i>
<i>Benzene</i>	<i>2115.7</i>	<i>0.2</i>
<i>Toluene</i>	<i>4485.8</i>	<i>0.2</i>
<i>Ethylbenzene</i>	<i>318.0</i>	<i>0.2</i>
<i>m,p-Xylene</i>	<i>2154.1</i>	<i>0.2</i>
<i>o-Xylene</i>	<i>550.3</i>	<i>0.2</i>
<i>TOTAL</i>	<i>9623.9 ug/L</i>	

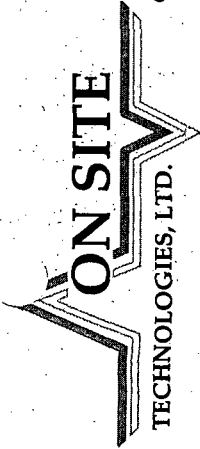
ND - Not Detectable

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

Approved by: *Ja 64*
Date: *6/30/95*

P. O. BOX 2606 • FARMINGTON, NM 87499

— TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT —



CHAIN OF CUSTODY RECORD

3118

Date: 6-28-95

Page 1 of 1

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

Purchase Order No.:		Job No.		Name		Title	
SEND INVOICE TO		Company		Company		Company	
Address		Dept.		Mailing Address		Mailing Address	
City, State, Zip				City, State, Zip		City, State, Zip	
Sampling Location:		604 170		Telephone No.		Telefax No.	
Sampler:		R. E. O'NEILL		ANALYSIS REQUESTED			
SAMPLE IDENTIFICATION		DATE		TIME		MATRIX	
wp-1		6-28		1300		WATER	
wp-2		"		1320		"	
wp-3		"		1335		"	
Number of Containers		2		2		2	
REPORT RESULTS TO		2		2		2	
LAB ID		7014		7015		7016	
Relinquished by:		R. E. O'NEILL		Date/Time		6/29/95 14:52	
Relinquished by:				Date/Time			
Relinquished by:				Date/Time			
Method of Shipment:		Rush		24-48 Hours		10 Working Days	
Authorized by:		R. E. O'NEILL		Date		6-28-95	
(Client Signature Must Accompany Request)							

BLAGG ENGINEERING INC.

MONITOR WELL QUARTERLY MONITORING DATA

DATE: 9-8-95 PROJECT NO: _____

CLIENT: Amoco CHAIN-OF-CUSTODY NO: 4390

LOCATION: GCH 170

PROJECT MANAGER: RED SAMPLER: RED

MONITOR WELL DATA

WELL #	WELL ELEV.	WATER ELEV.	DTW (FT)	T.D. (FT)	TEM °F	pH	COND. (uMHO)	BAILS (GAL)	PROD (IN)
wp-1	—	—	9.56	15.33	61.8	7.8	1400	6	—
wp-2	—	—	9.35	15.00	63.3	7.4	1300	8	—
wp-3	—	—	9.60	15.00	63.2	7.8	1700	6	—

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 = 24 oz. per foot of water. (2 bails)

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".

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client: Blagg / Amoco
Sample ID: WP - 1
Chain of Custody: 4390
Laboratory Number: 8918
Sample Matrix: Water
Preservative: HgCl & Cool
Condition: Cool & Intact

Project #: 04034
Date Reported: 09-12-95
Date Sampled: 09-08-95
Date Received: 09-08-95
Date Analyzed: 09-11-95
Analysis Requested: BTEX

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	206	1	0.4
Toluene	82.3	1	0.5
Ethylbenzene	4.9	1	0.5
p,m-Xylene	50.4	1	0.4
o-Xylene	16.6	1	0.4
Total BTEX	360		

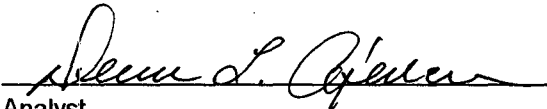
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	96 %
	Bromofluorobenzene	100 %

References: 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. 1994.

Comments: GCU 170.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Amoco	Project #:	04034
Sample ID:	WP - 2	Date Reported:	09-12-95
Chain of Custody:	4390	Date Sampled:	09-08-95
Laboratory Number:	8919	Date Received:	09-08-95
Sample Matrix:	Water	Date Analyzed:	09-11-95
Preservative:	HgCl & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	47.1	1	0.4
Toluene	19.8	1	0.5
Ethylbenzene	1.2	1	0.5
p,m-Xylene	12.5	1	0.4
o-Xylene	5.1	1	0.4
Total BTEX	85.7		

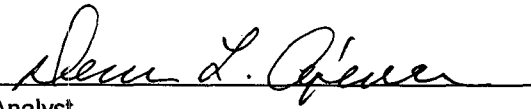
ND - Parameter not detected at the stated detection limit.

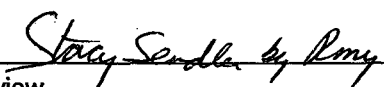
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	101 %

References: 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. 1994.

Comments: GCU 170.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Amoco	Project #:	04034
Sample ID:	WP - 3	Date Reported:	09-12-95
Chain of Custody:	4390	Date Sampled:	09-08-95
Laboratory Number:	8920	Date Received:	09-08-95
Sample Matrix:	Water	Date Analyzed:	09-11-95
Preservative:	HgCl & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	1,200	5	2.2
Toluene	815	5	2.5
Ethylbenzene	131	5	2.4
p,m-Xylene	397	5	2.0
o-Xylene	264	5	2.2
Total BTEX	2,810		

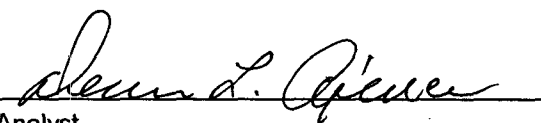
ND - Parameter not detected at the stated detection limit.

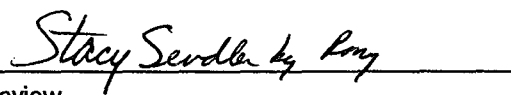
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	101 %

References: 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. 1994.

Comments: GCU 170.


Analyst


Review

BLAGG ENGINEERING INC.

MONITOR WELL QUARTERLY MONITORING DATA

DATE: 12-7-95 PROJECT NO: _____
 CLIENT: Amoco CHAIN-OF-CUSTODY NO: _____
 LOCATION: 6C4 170
 PROJECT MANAGER: PEO SAMPLER: PEO

MONITOR WELL DATA

	WELL #	WELL ELEV.	WATER ELEV.	DTW (FT)	T.D. (FT)	TEM °F	pH	COND. (uMHO)	BAILS (GAL)	PROD (IN)
1330	WP-1	—	—	9.91	15.33	56.5	6.8	1700	6	—
1340	WP-2	—	—	9.45	15.00	56.5	7.2	1600	7	—
1400	WP-3	—	—	9.80	15.00	57.6	7.0	1800	5	—

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 = 24 oz. per foot of water.(2 bails)

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".

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID: Amoco/GCU 170
Sample ID: WP - 1
Lab ID: 2139
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 12/20/95
Date Sampled: 12/07/95
Date Received: 12/07/95
Date Analyzed: 12/14/95

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.20
Toluene	0.37	0.20
Ethylbenzene	ND	0.20
m,p-Xylenes	ND	0.40
o-Xylene	ND	0.20

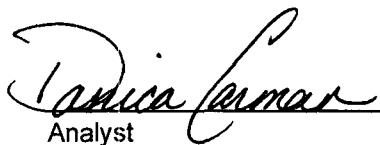
Total BTEX	0.37
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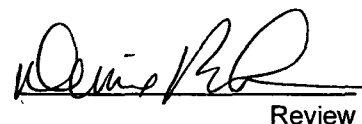
ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	100	88 - 110%

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

Comments:


Analyst


Review

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID: Amoco/GCU 170
Sample ID: WP - 2
Lab ID: 2140
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 12/20/95
Date Sampled: 12/07/95
Date Received: 12/07/95
Date Analyzed: 12/14/95

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
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ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	100	88 - 110%

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

Comments:


Analyst


Review

MONITOR WELL QUARTERLY MONITORING DATA

PROJECT NO: _____

CHAIN-OF-CUSTODY NO: Amurza

PROJECT MANAGER: Reo

SAMPLER: Red

[illegible]

~~Ideally~~ a minimum of 3 well volumes:

= 2 bails per foot - ~~small teflon bailer~~

= 3 bails per foot - 3/4" disposable bailer

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".

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID: GCU 170
Sample ID: WP - 1
Lab ID: 2872
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 03/22/96
Date Sampled: 03/08/96
Date Received: 03/08/96
Date Analyzed: 03/19/96

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	0.97	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50

Total BTEX	0.97
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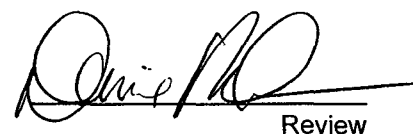
ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	93	88 - 110%

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

Comments:


Analyst


Review

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID: GCU 170
Sample ID: WP - 2
Lab ID: 2873
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 03/22/96
Date Sampled: 03/08/96
Date Received: 03/08/96
Date Analyzed: 03/19/96

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

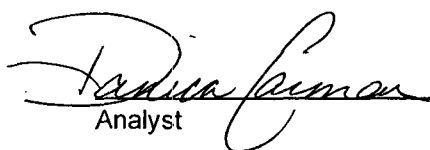
Total BTEX	ND
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ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	99	88 - 110%

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

Comments:


Analyst


Review

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID: GCU 170
Sample ID: WP - 3
Lab ID: 2874
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 03/22/96
Date Sampled: 03/08/96
Date Received: 03/08/96
Date Analyzed: 03/19/96

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	5,020	250
Toluene	6,410	250
Ethylbenzene	105	25.0
m,p-Xylenes	2,080	500
o-Xylene	523	25.0

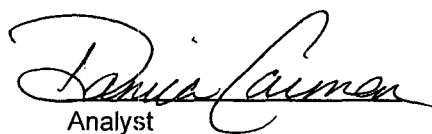
Total BTEX	14,100
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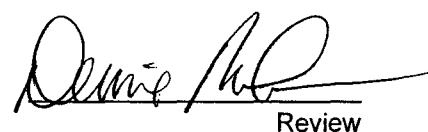
ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	100	88 - 110%

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

Comments:


Analyst


Review



March 27, 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 aqueous samples received on March 8, 1996 from the Amoco GCU 170 site. The samples were received cool and intact. Analysis for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) was performed on the samples, as per the chain of custody.

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 btx analytes found in the samples are 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,

A handwritten signature in black ink, appearing to read "Denise A. Bohemier".

Denise A. Bohemier
Lab Director

PURGEABLE AROMATICS

Quality Control Report

Method Blank Analysis

Sample Matrix: Water
Lab ID: MB35143

Report Date: 03/22/96
Date Analyzed: 03/19/96

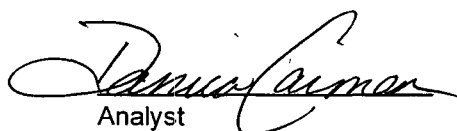
Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50

ND - Analyte not detected at the stated detection limit.

Quality Control: Surrogate Percent Recovery Acceptance Limits
Trifluorotoluene 96 88 - 110%

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

Comments:


Analyst


Review

Purgeable Aromatics

Duplicate Analysis

Lab ID: 2866Dup
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 03/22/96
Date Sampled: 03/08/96
Date Received: 03/08/96
Date Analyzed: 03/19/96

Target Analyte	Original Conc. (ug/L)	Duplicate Conc. (ug/L)	Acceptance Range (ug/L)
Benzene	775	776	634 - 916
Toluene	169	165	136 - 198
Ethylbenzene	259	251	168 - 343
m,p-Xylenes	2,100	2,070	NE
o-Xylene	380	379	NE

ND - Analyte not detected at the stated detection limit.

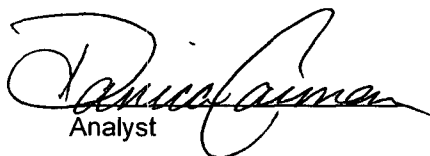
NA - Not applicable or not calculated.

NE - Duplicate acceptance range not established by the EPA.

	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
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: 2871Spk
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 03/22/96
Date Sampled: 03/08/96
Date Received: 03/08/96
Date Analyzed: 03/19/96

Target Analyte	Spike Added (ug/L)	Original Conc. (ug/L)	Spiked Sample Conc. (ug/L)	% Recovery	Acceptance Limits (%)
Benzene	10	ND	9.69	97%	39 - 150
Toluene	10	ND	9.76	97%	46 - 148
Ethylbenzene	10	ND	9.65	95%	32 - 160
m,p-Xylenes	20	ND	19.2	95%	NE
o-Xylene	10	ND	9.69	97%	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.

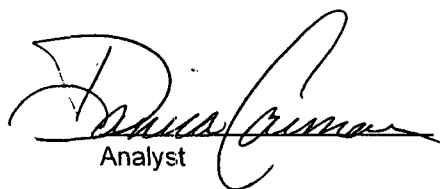
Quality Control: Surrogate
Trifluorotoluene

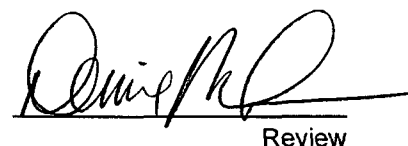
Percent Recovery
98

Acceptance Limits
88 - 110%

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

Comments:


Analyst


Review

MONITOR WELL QUARTERLY MONITORING DATA

PROJECT NO:

CHAIN-OF-CUSTODY NO: AMALTA

PROJECT MANAGER: pco

SAMPLER: RF0

MONITOR WELL DATA

[illegible]

Ideally a minimum of 3 well volumes:

= 2 bails per foot - small teflon bailer

= 3 bails per foot - 3/4" disposable bailer

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".

PURGEABLE AROMATICS**Blagg Engineering, Inc.**

Project ID: GCU 170
Sample ID: WP - 1
Lab ID: 3788
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 06/17/96
Date Sampled: 06/04/96
Date Received: 06/05/96
Date Analyzed: 06/13/96

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

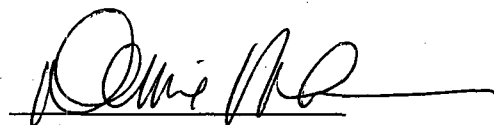
Total BTEX	ND
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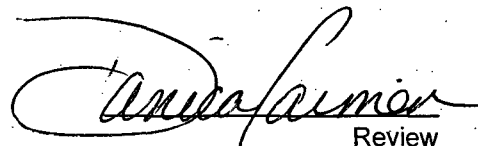
ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	103	88 - 110%
	Bromofluorobenzene	97	86 - 115%

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

Comments:


Analyst


Review

PURGEABLE AROMATICS**Blagg Engineering, Inc.**

Project ID: GCU 170
Sample ID: MW - 2
Lab ID: 3789
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 06/17/96
Date Sampled: 06/04/96
Date Received: 06/05/96
Date Analyzed: 06/13/96

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

Total BTEX	ND
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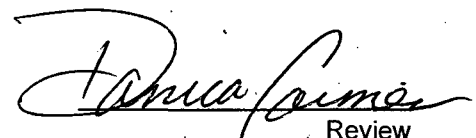
ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	100	88 - 110%
	Bromofluorobenzene	97	86 - 115%

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

Comments:


Analyst


Review



PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID: GCU 170
Sample ID: WP - 3
Lab ID: 3790
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 06/17/96
Date Sampled: 06/04/96
Date Received: 06/05/96
Date Analyzed: 06/13/96

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	5,140	100
Toluene	5,560	100
Ethylbenzene	116	2.50
m,p-Xylenes	2,090	200
o-Xylene	541	100

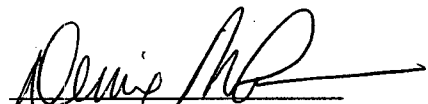
Total BTEX	13,400
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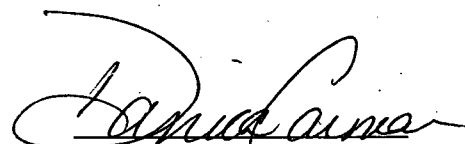
ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	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



June 17, 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 5, 1996. The samples were from the GCU 170 site. Analysis for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) was performed on the sample as per the accompanying chain of custody form.

Analysis was performed on the sample 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 btx analytes were found in one of 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,

A handwritten signature in black ink, appearing to read "Denise A. Bohemier".

Denise A. Bohemier
Lab Director

PURGEABLE AROMATICS

Quality Control Report

Method Blank Analysis

Sample Matrix: Water
Lab ID: MB35229

Report Date: 06/17/96
Date Analyzed: 06/13/96

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

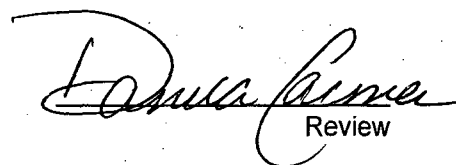
ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	103	88 - 110%
	Bromofluorobenzene	98	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: 3788Spk
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 06/17/96
Date Sampled: 06/04/96
Date Received: 06/05/96
Date Analyzed: 06/13/96

Target Analyte	Spike Added (ug/L)	Original Conc. (ug/L)	Spiked Sample Conc. (ug/L)	% Recovery	Acceptance Limits (%)
Benzene	10	ND	9.75	98%	39 - 150
Toluene	10	ND	9.92	95%	46 - 148
Ethylbenzene	10	ND	9.61	96%	32 - 160
m,p-Xylenes	20	ND	19.1	94%	NE
o-Xylene	10	ND	9.59	95%	NE

ND - Analyte not detected at the stated detection limit.

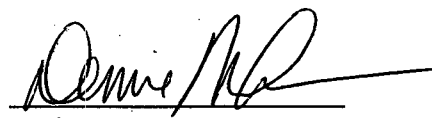
NA - Not applicable or not calculated.

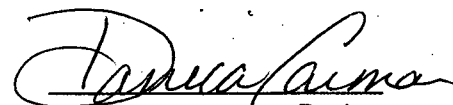
NE - Spike acceptance range not established by the EPA.

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

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

Comments:


Analyst


Review

VOLATILE AROMATIC HYDROCARBONS

Matrix Spike Duplicate Analysis

Lab ID: 3788Spkdup
Sample Matrix: Water
Preservative: Cool, HgCl₂
Condition: Intact

Report Date: 06/17/96
Date Sampled: 06/04/96
Date Received: 06/05/96
Date Analyzed: 06/13/96

Target Analyte	Spike Added (ug/L)	Sample Spike Recovery (%)	Duplicate Spike Recovery (%)	Acceptance Limits (%)
Benzene	10	98%	102%	80.5 - 119
Toluene	10	95%	101%	79.5 - 117
Ethylbenzene	10	96%	98%	63.2 - 131
m,p-Xylenes	20	94%	98%	NE
o-Xylene	10	95%	98%	NE

ND - Analyte not detected at the stated detection limit.

NA - Not applicable or not calculated.

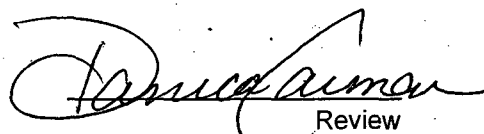
NE - Spike acceptance range not established by the EPA.

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	95	88 - 110%
	Bromofluorobenzene	93	86 - 115%

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

Comments: Calculation of spike recovery requires consideration of a sample dilution factor


Analyst


Review



Bill To:
Company:
Address:

SA mC

Sample ID	Date	Time	Matrix	Lab ID
WP-1	6-7	1010	white	
MW-2	"	1025	"	
WP-3	"	1040	"	

Project Information		Sample Receipt
Proj. #:		No. Containers:
Proj. Name: A molto		Custody Seals: Y / N / NA
P.O. No:		Received intact:
Shipped Via: DEL'D		Received Gold:

Required Turnaround Time (Prior Authorization Required for Rush)

664 170

CHAIN OF CUSTODY

ORGANIC ANALYSES										WATER ANALYSES										METALS			COMMENTS		
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):	
						</																			

BLAGG ENGINEERING, INC.**MONITOR WELL SAMPLING DATA**CLIENT : AMOCO PRODUCTION CO.CHAIN-OF-CUSTODY # : 5118

GCU # 170 - SEPARATOR PIT UNIT K, SEC. 35, T29N, R12W
--

LABORATORY (S) USED : ENVIROTECH, INC.Date : June 24, 1997SAMPLER : NJVFilename : 06-24-97.WK3PROJECT MANAGER : NJV

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	101.83	90.87	10.96	—	—	—	—	—	—
2	100.80	90.75	10.05	—	—	—	—	—	—
3	99.63	88.91	10.72	15.00	1510	6.9	1,700	1.00	—

NOTES : Volume of water purged from well prior to sampling; $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

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 ".WELL # 3, = 1.25" well point. Collected BTEX samples for MW # 3 only.

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Blagg / Amoco	Project #:	04034-10
Sample ID:	WP - 3	Date Reported:	06-26-97
Chain of Custody:	5118	Date Sampled:	06-24-97
Laboratory Number:	B503	Date Received:	06-24-97
Sample Matrix:	Water	Date Analyzed:	06-25-97
Preservative:	HgCl ₂ & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	1,115	10	1.8
Toluene	542	10	1.7
Ethylbenzene	88.2	10	1.5
p,m-Xylene	418	10	2.2
o-Xylene	432	10	1.0
Total BTEX	2,595		

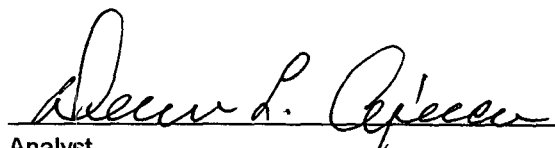
ND - Parameter not detected at the stated detection limit.

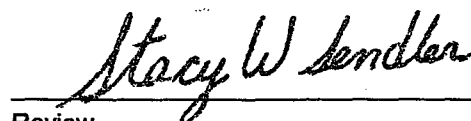
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	99 %
	Bromofluorobenzene	100 %

References: 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. 1994.

Comments: GCU #170.


Analyst


Review

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

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	06-26-97
Laboratory Number:	06-25-BTEX.BLANK	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	06-25-97
Condition:	N/A	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.2
o-Xylene	ND	0.1

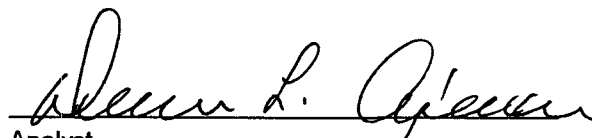
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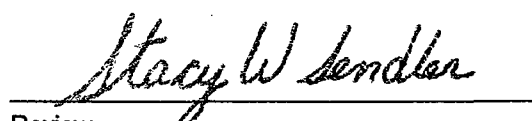
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	97 %
	Bromofluorobenzene	99 %

References: 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. 1994.

Comments: QA/QC for samples B494 - B503.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	06-26-97
Laboratory Number:	B494	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	HgCl and Cool	Date Analyzed:	06-25-97
Condition:	Cool and Intact	Analysis Requested:	BTEX-8020

Parameter	Sample Result (ug/L)	Duplicate Result (ug/L)	Percent Diff.	Det. Limit (ug/L)	Dilution Factor
Benzene	44.7	43.9	1.8%	0.2	1
Toluene	0.5	0.5	0.0%	0.2	1
Ethylbenzene	0.4	0.4	0.0%	0.2	1
p,m-Xylene	0.8	0.8	0.0%	0.2	1
o-Xylene	2.2	2.2	0.0%	0.1	1

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Maximum Difference
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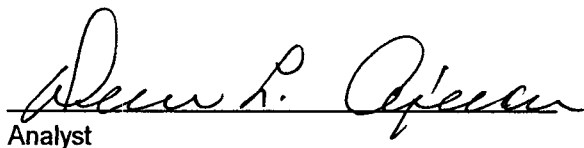
8020 Compounds

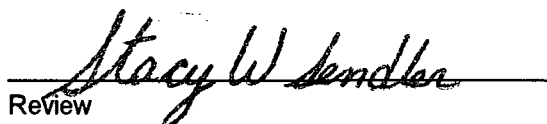
30 %

References: 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. 1994.

Comments: QA/QC for samples B494 - B503.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client: QA/QC
Sample ID: Matrix Spike
Laboratory Number: B494
Sample Matrix: Water
Preservative: Cool
Condition: Cool and Intact

Project #: N/A
Date Reported: 06-26-97
Date Sampled: N/A
Date Received: N/A
Date Analyzed: 06-25-97

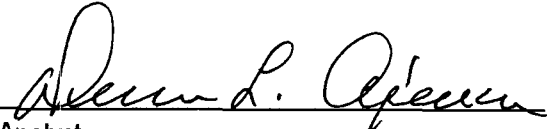
Parameter	Sample Result (ug/L)	Spike Added (ug/L)	Spiked Sample Result (ug/L)	Det. Limit (ug/L)	Percent Recovery	SW-846 % Rec. Accept. Range
Benzene	44.7	50.0	94.4	0.2	100%	39-150
Toluene	0.5	50.0	50.4	0.2	100%	46-148
Ethylbenzene	0.4	50.0	50.3	0.2	100%	32-160
p,m-Xylene	0.8	100	100	0.2	100%	46-148
o-Xylene	2.2	50.0	52.6	0.1	101%	46-148

ND - Parameter not detected at the stated detection limit.

References: 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. 1994.

Comments: QA/QC for samples B494 - B503.


Analyst


Review

BLAGG ENGINEERING, INC.**MONITOR WELL SAMPLING DATA**CLIENT : AMOCO PRODUCTION CO.CHAIN-OF-CUSTODY # : 6017

GCU # 170 - SEPARATOR PIT
UNIT K, SEC. 35, T29N, R12W

LABORATORY (S) USED : ENVIROTECH, INC.Date : June 8, 1998SAMPLER : N J VFilename : 06-08-98.WK4PROJECT MANAGER : N J V

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)
WP-1	101.83	90.85	10.98	-	-	-	-	-	-
WP-2	100.80	90.87	9.93	-	-	-	-	-	-
WP-3	99.63	88.94	10.69	15.00	1405	7.3	1,600	1.00	-

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.(i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

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".WELL # 3, = 1.25" well point. Collected BTEX samples for MW # 3 only.

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	WP - 3	Date Reported:	06-09-98
Chain of Custody:	6017	Date Sampled:	06-08-98
Laboratory Number:	D366	Date Received:	06-08-98
Sample Matrix:	Water	Date Analyzed:	06-09-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	921	10	1.8
Toluene	1,020	10	1.7
Ethylbenzene	16.1	10	1.5
p,m-Xylene	209	10	2.2
o-Xylene	70.4	10	1.0

Total BTEX 2,240

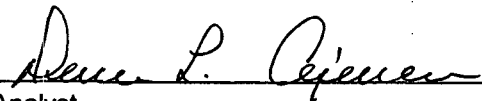
ND - Parameter not detected at the stated detection limit.

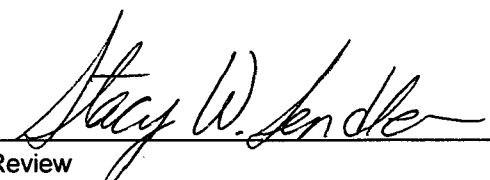
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	98 %
	Bromofluorobenzene	98 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: GCU #170.


Analyst


Review

6017

[illegible]

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	N/A	Project #:	N/A
Sample ID:	06-09-BTEX QA/QC	Date Reported:	06-09-98
Laboratory Number:	D362	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	06-09-98
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff.	Blank Conc	Detect Limit
		Accept. Range 0 - 15%			
Benzene	1.4863E-02	1.4878E-02	0.10%	ND	0.2
Toluene	2.2878E-02	2.2947E-02	0.30%	ND	0.2
Ethylbenzene	1.0578E-02	1.0663E-02	0.81%	ND	0.2
p,m-Xylene	8.4559E-03	8.5155E-03	0.70%	ND	0.2
o-Xylene	8.7385E-03	8.7912E-03	0.60%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	236	237	0.2%	0 - 30%
Toluene	7.6	7.6	0.0%	0 - 30%
Ethylbenzene	17.4	17.5	0.6%	0 - 30%
p,m-Xylene	43.7	43.9	0.5%	0 - 30%
o-Xylene	24.2	24.4	0.8%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	236	50.0	275	96%	39 - 150
Toluene	7.6	50.0	57.2	99%	46 - 148
Ethylbenzene	17.4	50.0	66.4	99%	32 - 160
p,m-Xylene	43.7	100.0	141	98%	46 - 148
o-Xylene	24.2	50.0	73.1	99%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples D362- D366.

Analyst

Review

BLAGG ENGINEERING, INC.**MONITOR WELL SAMPLING DATA**CLIENT : **AMOCO PRODUCTION CO.**CHAIN-OF-CUSTODY # : **6689****GCU # 170 - SEPARATOR PIT
UNIT K, SEC. 35, T29N, R12W**LABORATORY (S) USED : **ENVIROTECH, INC.**

Date : May 28, 1999

SAMPLER : **N J V**

Filename : 05-28-99.WK4

PROJECT MANAGER : **N J V**

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)
WP-1	101.83	91.37	10.46	-	-	-	-	-	-
WP-2	100.80	91.37	9.43	-	-	-	-	-	-
WP-3	99.63	89.34	10.29	15.00	1045	7.0	1,700	1.00	-

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.(i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

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 "WELL # 3, = 1.25" well point . Collected BTEX samples for MW # 3 only .

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	WP - 3	Date Reported:	06-02-99
Chain of Custody:	6689	Date Sampled:	05-28-99
Laboratory Number:	F426	Date Received:	05-28-99
Sample Matrix:	Water	Date Analyzed:	06-01-99
Preservative:	HgCl ₂ & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	69.3	1	0.2
Toluene	78.1	1	0.2
Ethylbenzene	3.0	1	0.2
p,m-Xylene	65.4	1	0.2
o-Xylene	23.3	1	0.1

Total BTEX 239

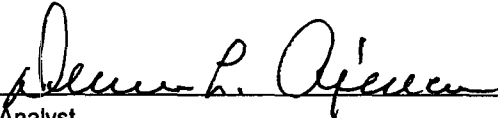
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	99 %
	Bromofluorobenzene	99 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: GCU #170.


Analyst


Review

CHAIN OF CUSTODY RECORD

[illegible]

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS QUALITY ASSURANCE REPORT

Client:	N/A	Project #:	N/A
Sample ID:	06-01-PM-BTEX QA/QC	Date Reported:	06-02-99
Laboratory Number:	F424	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	06-01-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept. Range 0 - 15%			
Benzene	1.6360E-002	1.6412E-002	0.32%	ND	0.2
Toluene	1.7563E-002	1.7566E-002	0.02%	ND	0.2
Ethylbenzene	7.1313E-003	7.1398E-003	0.12%	ND	0.2
p,m-Xylene	8.5740E-003	8.5758E-003	0.02%	ND	0.2
o-Xylene	7.9281E-003	7.9520E-003	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff	Accept Limit
Benzene	221	213	3.5%	0 - 30%
Toluene	10.6	10.3	2.8%	0 - 30%
Ethylbenzene	11.1	10.9	1.8%	0 - 30%
p,m-Xylene	17.7	17.8	0.6%	0 - 30%
o-Xylene	4.9	4.8	2.0%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	221	50.0	274	101%	39 - 150
Toluene	10.6	50.0	60.9	100%	46 - 148
Ethylbenzene	11.1	50.0	61.4	100%	32 - 160
p,m-Xylene	17.7	100.0	118	100%	46 - 148
o-Xylene	4.9	50.0	55.0	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

* - Administrative Limits set at 80 - 120%.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for samples F424 - F430 and F435.

Analyst

Review

BLAGG ENGINEERING, INC.
MONITOR WELL SAMPLING DATA

CLIENT : BP AMOCO

CHAIN-OF-CUSTODY # : 10589

GCU #170 - SEPARATOR PIT
UNIT K, SEC. 35, T29N, R12W

LABORATORY (S) USED : ON - SITE TECH.

Date : May 24, 2000

SAMPLER : N J V

Filename : 05-24-00.WK4

PROJECT MANAGER : N J V

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)
WP-1	101.83	90.76	11.07	-	-	-	-	-	-
WP-2	100.80	89.94	10.86	-	-	-	-	-	-
WP-3	99.63	88.93	10.70	15.00	1015	7.1	1,700	1.00	-

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$
(i.e. 2" MW $r = (1/12) \text{ ft. } h = 1 \text{ ft.}$ (i.e. 4" MW $r = (2/12) \text{ ft. } h = 1 \text{ ft.}$)

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 "

WP #3, = 1.25" well point. Collected BTEX samples from MW #3 only. Very poor recovery
in WP #3.

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 31-May-00

Client:	Blagg Engineering	Client Sample Info:	GCU #170
Work Order:	0005064	Client Sample ID:	MW #3
Lab ID:	0005064-01A	Matrix:	AQUEOUS
Project:	BP Amoco - GCU #170	Collection Date:	5/24/2000 10:15:00 AM
		COC Record:	10589

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	1100	10		µg/L	20	5/30/2000
Toluene	770	10		µg/L	20	5/30/2000
Ethylbenzene	19	10		µg/L	20	5/30/2000
m,p-Xylene	300	20		µg/L	20	5/30/2000
o-Xylene	110	10		µg/L	20	5/30/2000

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



CHAIN OF CUSTODY RECORD

10589

Page: 1 of 1

Date: 5/24/00

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Purchase Order No.:		Project No.		
Name: JEFF BLAGG		Title:		
Company: BLAGG ENGINEERING, INC.		Company: STAME		
Address: P.O. Box 87		Mailing Address:		
City, State, Zip: Bloomfield, NM 87413		City, State, Zip:		
Telephone No.:		Telephone No. 632-1199		
Telefax No.:		Telefax No. 632-3903		
REPORT TO RESULTS TO		ANALYSIS REQUESTED		
Number of Containers		LAB ID		
DATE		TIME	MATRIX	PRES.
5/24/00		1015	WATER	HET
MW #3				COOL
SAMPLE IDENTIFICATION		DATE		TIME
MW #3		5/24/00		1015
SAMPLER'S SIGNATURE: <i>Nelson V</i>		DATE		TIME
BP Amoco - GCU # 170		5/24/00		1015
Relinquished by: <i>Nelson V</i>		Date/Time: <i>5/24/00 1325</i>		Date/Time: <i>5/24/00 1325</i>
Relinquished by:		Date/Time:		Date/Time:
Relinquished by:		Date/Time:		Date/Time:
Method of Shipment:		Rush		24-48 Hours
Special Instructions / Remarks:		10 Working Days		By Date:
Authorized by: _____		Date: _____		Date: _____
(Client Signature Must Accompany Request)				

On Site Technologies, LTD.

Date: 31-May-00

CLIENT: Blagg Engineering

Work Order: 0005064

Project: BP Amoco - GCU #170

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_000530	Test Code: SW8021B	Units: µg/L	Analysis Date: 5/30/2000	Prep Date:						
Client ID:	0005064	Run ID: GC-1_000530A		SeqNo: 28214							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.1373	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	.0429	0.5									J
Toluene	.1473	0.5									J

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 31-May-00

CLIENT: Blagg Engineering
 Work Order: 0005064
 Project: BP Amoco - GCU #170

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0005060-01AMS		Batch ID: GC-1_000530	Test Code: SW8021B	Units: µg/L	Analysis Date: 5/30/2000			Prep Date:						
Client ID:		0005064	Run ID:	GC-1_000530A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte		Result												
Benzene		1056			5	400	641.6	103.5%	73	126				
Ethylbenzene		418.3			5	400	12.55	101.4%	88	113				
m,p-Xylene		781			10	800	14.48	95.8%	83	112				
Methyl tert-Butyl Ether		435.9			10	400	13.34	105.6%	81	125				
o-Xylene		407.4			5	400	2.036	101.4%	93	110				
Toluene		410.1			5	400	0.698	102.3%	76	126				

Sample ID: 0005060-01AMSD		Batch ID: GC-1_000530	Test Code: SW8021B	Units: µg/L		Analysis Date: 5/30/2000			Prep Date:			
Client ID: 0005064		Run ID: GC-1_000530A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result											
Benzene	1049		5	400	641.6	101.7%	73	126	1056	0.7%		6
Ethylbenzene	416.1		5	400	12.55	100.9%	88	113	418.3	0.5%		5
m,p-Xylene	778.3		10	800	14.48	95.5%	83	112	781	0.4%		7
Methyl tert-Butyl Ether	439.5		10	400	13.34	106.5%	81	125	435.9	0.8%		9
o-Xylene	406.1		5	400	2.036	101.0%	93	110	407.4	0.3%		6
Toluene	408.4		5	400	0.698	101.9%	76	126	410.1	0.4%		6

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 31-May-00

CLIENT: Blagg Engineering

Work Order: 0005064

Project: BP Amoco - GCU #170

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_000530	Test Code: SW8021B	Units: µg/L	Analysis Date: 5/30/2000	Prep Date:
Client ID: 0005064	Run ID: GC-1_000530A	PQL	SPK value	SeqNo: 28213	
Analyte	Result	PQL	SPK value	SPK Ref Val	RPD Ref Val
Benzene	41	0.5	40	0.1373	112
Ethylbenzene	40.88	0.5	40	0	112
m,p-Xylene	77.26	1	80	0	108
Methyl tert-Butyl Ether	41.6	1	40	0	115
o-Xylene	40.73	0.5	40	0.0429	112
Toluene	40.96	0.5	40	0.1473	111
		%REC	LowLimit	HighLimit	RPD Limit
		102.2%	89	112	
		102.2%	93	112	
		96.6%	88	108	
		104.0%	87	115	
		101.7%	93	112	
		102.0%	92	111	
		%RPD	RPD Limit	Qual	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 31-May-00

CLIENT: Blagg Engineering
Work Order: 0005064
Project: BP Amoco - GCU #170

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 BTEX_0004		Batch ID: GC-1_000530	Test Code: SW8021B	Units: µg/L	Analysis Date: 5/30/2000			Prep Date:				
Client ID: 0005064		Run ID: GC-1_000530A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result											
Benzene	21.32	0.5	20	0	106.6%	85	115					
Ethylbenzene	21.22	0.5	20	0	106.1%	85	115					
m,p-Xylene	39.95	1	40	0	99.9%	85	115					
Methyl tert-Butyl Ether	22.51	1	20	0	112.6%	85	115					
o-Xylene	21.16	0.5	20	0	105.8%	85	115					
Toluene	21	0.5	20	0	105.0%	85	115					
1,4-Difluorobenzene	89.19	0	100	0	89.2%	80	105					
4-Bromochlorobenzene	90.01	0	100	0	90.0%	78	108					
Fluorobenzene	88.33	0	100	0	88.3%	78	108					

Sample ID: CCV2 BTEX_0004		Batch ID: GC-1_000530	Test Code: SW8021B	Units: µg/L		Analysis Date: 5/30/2000			Prep Date:			
Client ID: 0005064		Run ID: GC-1_000530A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result											
Benzene	20.41		0.5	20	0	102.1%	85	115				
Ethylbenzene	20.14		0.5	20	0	100.7%	85	115				
m,p-Xylene	37.85		1	40	0	94.6%	85	115				
Methyl tert-Butyl Ether	22.62		1	20	0	113.1%	85	115				
o-Xylene	20.13		0.5	20	0	100.7%	85	115				
Toluene	20.04		0.5	20	0	100.2%	85	115				
1,4-Difluorobenzene	88.49		0	100	0	88.5%	80	105				
4-Bromochlorobenzene	89.4		0	100	0	89.4%	78	108				
Fluorobenzene	88.38		0	100	0	88.4%	78	108				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering

Work Order: 0005064

Project: BP Amoco - GCU #170

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 BTEX_0004		Batch ID: GC-1_000530	Test Code: SW8021B	Units: µg/L		Analysis Date: 5/30/2000		Prep Date:	
Client ID: 0005064		Run ID: GC-1_000530A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	SeqNo: 28212
Analyte	Result								
Benzene	40.46		0.5	40	0	101.1%	85	115	
Ethylbenzene	40.04		0.5	40	0	100.1%	85	115	
m,p-Xylene	75.78		1	80	0	94.7%	85	115	
Methyl tert-Butyl Ether	44.07		1	40	0	110.2%	85	115	
o-Xylene	40.03		0.5	40	0	100.1%	85	115	
Toluene	40.4		0.5	40	0	101.0%	85	115	
1,4-Difluorobenzene	88.78		0	100	0	88.8%	80	105	
4-Bromochlorobenzene	88.73		0	100	0	88.7%	78	108	
Fluorobenzene	87.55		0	100	0	87.5%	78	108	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0005064
Project: BP Amoco - GCU #170
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0005059-01A	88.5	87.9	88.3					
0005060-01A	87.9	90.6	86.8					
0005060-01AMS	86.6	90.4	86.6					
0005060-01AMSD	87.6	90.5	86.4					
0005060-04A	88.4	88.6	86.3					
0005060-06A	87.9	90.5	86.8					
0005061-01D	85.8	85.2	85.5					
0005061-02D	86.8	86.1	86.7					
0005061-03A	88.7	90.2	88.6					
0005062-01A	88.8	90.9	87.5					
0005062-02A	89	90.5	87.5					
0005063-01A	88.2	88.3	87.5					
0005064-01A	88.4	89.2	87.7					
0005066-01A	89.6	89	90.1					
0005066-02A	89.6	89.2	89.3					
0005066-03A	88.8	89.2	89.2					
CCV1 BTEX_00040	89.2	90	88.3					
CCV2 BTEX_00040	88.5	89.4	88.4					
CCV3 BTEX_00040	88.8	88.7	87.5					
LCS WATER	88.5	90.2	87.3					
MB1	88.9	89.8	89.3					

Acronym**Surrogate****QC Limits**

14FBZ

= 1,4-Difluorobenzene

80-105

4BCBZ

= 4-Bromochlorobenzene

78-108

FLBZ

= Fluorobenzene

78-108

* Surrogate recovery outside acceptance limits

94189

5798 US HWY. 64, FARMINGTON, NM 87401
(505) 832-0815

1292

JOB No: 92140
PAGE No: 1 of

DATE STARTED: 5/26/92
DATE FINISHED: _____
ENVIRO. SPCLT: J.W.
OPERATOR: _____
ASSISTANT: _____

LAND USE: Irrigated Pasture,
SURFACE CONDITIONS: Enothera Pit approx 5' deep

FIELD NOTES & REMARKS: ~~Pit~~ is located approx. 85' South and 15' East of well head. Could only get on test hole in pit. Contamination seemed to stop approx. 6' down. Test hole was dug at center

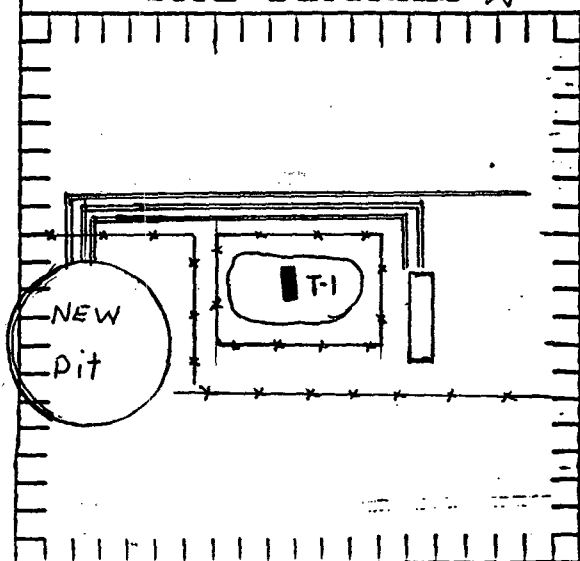
SAMPLE INVENTORY: of pit approx. 5' below natural ground level.

[illegible]

0

FEET

SITE DIAGRAM



TH#:	SOIL TYPE:	SAMPL TYPE:	OVM/TPH
1-			
2-			
3-			
4-	OH	Soil	304
5-			
6-	OH	Soil	646
7-			
8-	OH	Soil	1131
9-		H2O	151
10-			
11-			
12-			
13-			
14-			
15-			
16-			
17-			
18-			
19-			
20-			

- SOIL TYPE: C - Clay, M - Sil, S - Sand, G - Gravel Planting: L - Herb, H - Flower, C - Fruit, P - Fruit, W - Wood

(505) 832-0815

JOB No: _____
PAGE No: _____ of _____

DATE STARTED: _____
DATE FINISHED: _____

ENVIRONMENTAL
SPECIALIST: _____

SURFACE CONDITIONS:

FIELD NOTES & REMARKS:

10/10

0

SAMPLE

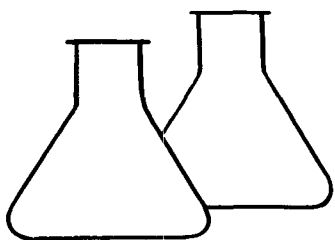
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0

[illegible]

TRAVEL NOTES: CALLOUT:

ONSITE:



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 HEADSPACE EXTRACTION

Client:	Amoco	Project #:	92140
Sample ID:	T1 @ 6'	Date Reported:	09-01-92
Laboratory Number:	0876	Date Sampled:	05-26-92
Sample Matrix:	Soil	Date Received:	05-26-92
Preservative:	Cool	Date Analyzed:	08-06-92
Condition:	Cool and Intact	Analysis Requested:	BTEX

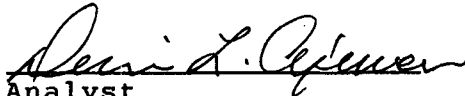
Parameter	Concentration (ug/L)	Det. Limit (ug/L)
-----	-----	-----
Benzene	ND	1.6
Toluene	ND	6.4
Ethylbenzene	ND	8.0
p,m-Xylene	ND	10.4
o-Xylene	6.9	6.4

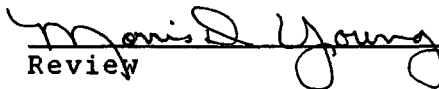
Method: Method 3810, Headspace, Test Methods for Evaluating
Solid Waste, SW-846, USEPA, Sept. 1986

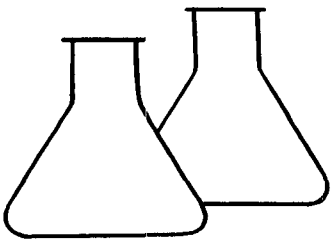
Method 8020, Aromatic Volatile Organics, Test Methods for
Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Gallegos CU 170 Separator Pit 94189


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:	T1 @ 8'	Date Reported:	09-14-92
Laboratory Number:	0878	Date Sampled:	05-26-92
Sample Matrix:	Water	Date Received:	05-26-92
Preservative:	HgCl & Cool	Date Analyzed:	07-20-92
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	170
Toluene	ND	275
Ethylbenzene	ND	55
p,m-Xylene	ND	100
o-Xylene	ND	100

SURROGATE RECOVERIES:	Parameter	Percent Recovery
	Trifluorotoluene	121.4 %

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

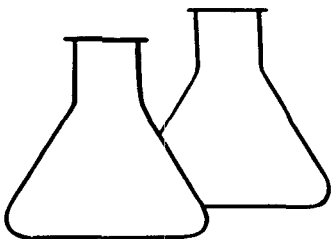
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: GCU #170E---Separator Pit---94189

Al Chahar
Analyst

Marci Young
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 HEADSPACE EXTRACTION

Client:	Amoco	Project #:	92140
Sample ID:	T1 @ 8'	Date Reported:	09-01-92
Laboratory Number:	0877	Date Sampled:	05-26-92
Sample Matrix:	Soil	Date Received:	05-26-92
Preservative:	Cool	Date Analyzed:	08-06-92
Condition:	Cool and Intact	Analysis Requested:	BTEX

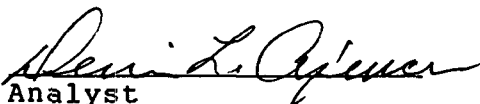
Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	18400	1.6
Toluene	10300	6.4
Ethylbenzene	640	8.0
p,m-Xylene	5500	10.4
o-Xylene	1970	6.4

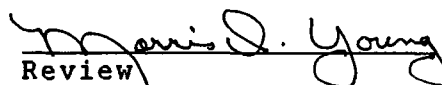
Method: Method 3810, Headspace, Test Methods for Evaluating
Solid Waste, SW-846, USEPA, Sept. 1986

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: Gallegos CU 170 Separator Pit 94189


Analyst


Review

94189

CHAIN OF CUSTODY RECORD

[illegible]

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

Form 3160-5
(June 1990)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM 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

SUBMIT IN TRIPLICATE

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Amoco Production Company

3. Address and Telephone No.

200 Amoco Court, Farmington, N.M. 87401 Tel: (505) 326-9200

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

NE 1/4 SW 1/4, SEC. 35, T29N, R12W, Nmpm

5. Lease Designation and Serial No.

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

892000844 F

8. Well Name and No.

GCU 170

9. API Well No.

3004507658

10. Field and Pool, or Exploratory Area

DAKOTA

11. County or Parish, State

SAN JUAN, NM

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

TYPE OF SUBMISSION

- ☐
- Notice of Intent
-
- ☒
- Subsequent Report
-
- ☐
- Final Abandonment Notice

TYPE OF ACTION

- ☐
- Abandonment
-
- ☐
- Recompletion
-
- ☐
- Plugging Back
-
- ☐
- Casing Repair
-
- ☒
- Altering Casing
-
- ☒
- Other Pit closure
-
- ☐
- Change of Plans
-
- ☐
- New Construction
-
- ☐
- Non-Routine Fracturing
-
- ☐
- Water Shut-Off
-
- ☐
- Conversion to Injection
-
- ☐
- 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.

BLOW PIT - ABANDONED

SEPARATOR PIT - STEEL TANK INSTALLED

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

Signed

B. Shaw

Title

Enviro. Coordinator

Date

3/28/95

(This space for Federal or State office use)

Approved by

Conditions of approval, if any:

Title

Date

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 statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

District I

P.O. Box 1980, Hobbs, NM

District II

P.O. 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 87504-2088SUBMIT 1 COPY TO
APPROPRIATE
DISTRICT OFFICE
AND 1 COPY TO
SANTA FE OFFICEPIT REMEDIATION AND CLOSURE REPORT

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

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: GCH 170
Well Name

Location: Unit or Qtr/Qtr Sec K Sec 35 T 29N R 12W County SAN JUAN

Pit Type: Separator Dehydrator Other BLOW

Land Type: BLM , State , Fee , Other UNIT AGMT.

Pit Location: Pit dimensions: length NA, width NA, depth NA
(Attach diagram)

Reference: wellhead X, other

Footage from reference: 60'

Direction from reference: 30 Degrees East North X
of
X West South

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)	<u>20</u>

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)	<u>20</u>

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)	<u>0</u>

RANKING SCORE (TOTAL POINTS):

40

Date Remediation Started: _____ Date Completed: 2/28/95Remediation Method: Excavation ☒ Approx. cubic yards NA

(Check all appropriate sections)

Landfarmed _____ Insitu Bioremediation _____

Other CLOSE AS ISRemediation Location: Onsite ☒ Offsite _____

(ie. landfarmed onsite, name and location of offsite facility)

General Description Of Remedial Action: _____

Excavation - NO REMEDIATION NECESSARY

Ground Water Encountered: No _____ Yes ☒ Depth 3'Final Pit: Sample location see Attached Documents

Closure Sampling:

(if multiple samples, attach sample results and diagram of sample locations and depths)

Sample depth 3'Sample date 2/27/95 Sample time 1610

Sample Results

Benzene (ppm) NDTotal BTEX (ppm) 0.0

Field headspace (ppm) _____

TPH _____

Ground Water Sample: Yes ☒ No _____ (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 3/3/95

SIGNATURE

B. ShawPRINTED NAME
AND TITLEBuddy D. Shaw
ENVIRONMENTAL COORDINATOR

CLIENT: <u>AMOCO</u>		BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199		LOCATION NO: <u>80238</u> C.D.C. NO: <u>2632</u>																																																
FIELD REPORT: CLOSURE VERIFICATION				PAGE No: <u>1</u> of <u>1</u>																																																
LOCATION: NAME: <u>GCU</u>		WELL #: <u>170</u>		PIT: <u>BLOW</u>																																																
QUAD/UNIT: <u>K</u>		SEC: <u>35</u> TWP: <u>29N</u> RNG: <u>12W</u>		PM: <u>NM</u> CNTY: <u>ST</u> ST: <u>NM</u>																																																
QTR/FOOTAGE: <u>NEL 4</u> <u>SW 14</u>		CONTRACTOR: <u>P. VELASQUEZ</u>		ENVIRONMENTAL SPECIALIST: <u>NJ</u>																																																
EXCAVATION APPROX. <u>NA</u> FT. x <u>NA</u> FT. x <u>NA</u> FT. DEEP. CUBIC YARDAGE: <u>NA</u>																																																				
DISPOSAL FACILITY: <u>ON-SITE</u> REMEDIATION METHOD: <u>CLOSE AS IS</u>																																																				
LAND USE: <u>RANGE / AGRICULT.</u> LEASE: <u>-</u> FORMATION: <u>OK</u>																																																				
FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY <u>60</u> FT. <u>N30W</u> FROM WELLHEAD.																																																				
DEPTH TO GROUNDWATER: <u><50'</u> NEAREST WATER SOURCE: <u>21000'</u> NEAREST SURFACE WATER: <u>71000'</u>																																																				
NMOC D RANKING SCORE: <u>40</u> NMOC D TPH CLOSURE STD: <u>100</u> PPM																																																				
SOIL AND EXCAVATION DESCRIPTION:																																																				
CHECK ONE: ☒ PIT ABANDONED ☐ STEEL TANK INSTALLED																																																				
TRENCH EXCAVATED IN CENTER OF PIT AREA. PIPING HAD BEEN DISCONNECTED FOR AN UNKNOWN PERIOD OF TIME. NO VISUAL INDICATION OF ANY HC CONTAMINATION IN OR OUT OF TRENCH AREA. NO SHEET PILING AND/OR PROTECTIVE DN GROUNDWATER SURFACE.																																																				
CLOSED SCALE 0 FT FIELD 418.1 CALCULATIONS <table><thead><tr><th>TIME</th><th>SAMPLE I.D.</th><th>LAB No:</th><th>WEIGHT (g)</th><th>mL. FREON</th><th>DILUTION</th><th>READING</th><th>CALC. ppm</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> PIT PERIMETER OVN RESULTS PIT PROFILE NOT APPLICABLE LAB SAMPLES <table><thead><tr><th>SAMPLE ID</th><th>ANALYSIS</th><th>TIME</th></tr></thead><tbody><tr><td>PW1</td><td>BTEX</td><td>1610</td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></tbody></table>						TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm																									SAMPLE ID	ANALYSIS	TIME	PW1	BTEX	1610									
TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm																																													
SAMPLE ID	ANALYSIS	TIME																																																		
PW1	BTEX	1610																																																		
TRAVEL NOTES: CALLOUT: <u>2/27/95</u> ONSITE: <u>2/27/95</u>																																																				

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Nelson Velez*
Company: *Blagg Engineering*
Address: *P.O. Box 87*
City, State: *Bloomfield, NM 87413*

Date: *2/28/95*
Lab ID: *2632*
Sample ID: *5310*
Job No. *2-1000*

Project Name: *GCU 170*
Project Location: *PW 1 @ GW (3') - Blow Pit*
Sampled by: *NV* Date: *2/27/95*
Analyzed by: *DLA* Date: *2/28/95*
Sample Matrix: *Water*

Time: *16:10*

Aromatic Volatile Organics

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

ND - Not Detectable

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

Approved by: *[Signature]*
Date: *2/28/95*

P. O. BOX 2606 • FARMINGTON, NM 87499

— TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT —

District I

P.O. Box 1980, Hobbs, NM

District II

P.O. 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 87504-2088SUBMIT 1 COPY TO
APPROPRIATE
DISTRICT OFFICE
AND 1 COPY TO
SANTA FE OFFICEPIT REMEDIATION AND CLOSURE REPORTOperator: Amoco Production Company Telephone: (505) - 326-9200Address: 200 Amoco Court, Farmington, New Mexico 87401Facility Or: GCU 170
Well NameLocation: Unit or Qtr/Qtr Sec K Sec 35 T 29N R 12W County SAN JUANPit Type: Separator ☒ Dehydrator ☐ Other ☐Land Type: BLM ☐, State ☐, Fee ☐, Other UNIT AGMT -Pit Location: Pit dimensions: length 155', width 70', depth 13'
(attach diagram)Reference: wellhead ☒, other ☐Footage from reference: 80'Direction from reference: 50 Degrees ☒ East North ☐
of
☐ West South ☒

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) 0
Greater than 1000 feet (0 points)RANKING SCORE (TOTAL POINTS): 20

Date Remediation Started: _____ Date Completed: 3/27/95

mediation Method: Excavation ☒ Approx. cubic yards 5100
 (Check all appropriate sections) Landfarmed _____ Insitu Bioremediation _____
 Other COMPOSTED

Remediation Location: Onsite _____ Offsite ☒ Gou com I 187
 (ie. landfarmed onsite, name and location of offsite facility)

General Description Of Remedial Action: _____

Excavation - GROUNDWATER PUMPED & DISPOSED BY TRIPLE S

TRUCKING.

MONITOR WELLS TO BE INSTALLED AT A LATER DATE.

Ground Water Encountered: No _____ Yes ☒ Depth 12'

Final Pit: Sample location see Attached Documents

Closure Sampling: _____

(if multiple samples, attach sample results and diagram of sample locations and depths)

Sample depth 12'

Sample date 3/27/95 Sample time 1105

Sample Results

Benzene(ppm) 0.0119

Total BTEX(ppm) 0.0493

Field headspace(ppm) _____

TPH _____

Ground Water Sample: Yes ☒ No _____ (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 3/27/95

SIGNATURE

B. Shaw

PRINTED NAME
AND TITLE

Buddy D. Shaw
ENVIRONMENTAL COORDINATOR

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>60238</u> C.O.C. NO: <u>2961</u>
----------------------	--	---

FIELD REPORT: CLOSURE VERIFICATION	PAGE No: <u>1</u> of <u>1</u>
------------------------------------	-------------------------------

LOCATION: NAME: <u>Gcu</u> WELL #: <u>170</u> PIT: <u>SEP</u>	DATE STARTED: <u>3/27/95</u> DATE FINISHED: _____
QUAD/UNIT: <u>K</u> SEC: <u>35</u> TWP: <u>29N</u> RNG: <u>2W</u> PM: <u>Nm</u> CNTY: <u>SJ</u> ST: <u>Nm</u>	ENVIRONMENTAL SPECIALIST: <u>NV</u>
QTR/FOOTAGE: <u>NE 1/4 SW 1/4</u> CONTRACTOR: <u>P. VELASQUEZ</u>	

EXCAVATION APPROX. <u>155</u> FT. x <u>70</u> FT. x <u>13</u> FT. DEEP. CUBIC YARDAGE: <u>5100</u>
DISPOSAL FACILITY: <u>Gcu com I 181</u> REMEDIATION METHOD: <u>COMPOSTED</u>
LAND USE: <u>RANGE</u> LEASE: <u>-</u> FORMATION: <u>OR</u>

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY <u>80</u> FT. <u>S50E</u> FROM WELLHEAD.
DEPTH TO GROUNDWATER: <u><50'</u> NEAREST WATER SOURCE: <u>>1000'</u> NEAREST SURFACE WATER: <u>>1000'</u>

NMOCB RANKING SCORE: <u>20</u> NMOCB TPH CLOSURE STD: <u>100</u> PPM	CHECK ONE: ☐ PIT ABANDONED ☒ STEEL TANK INSTALLED
--	--

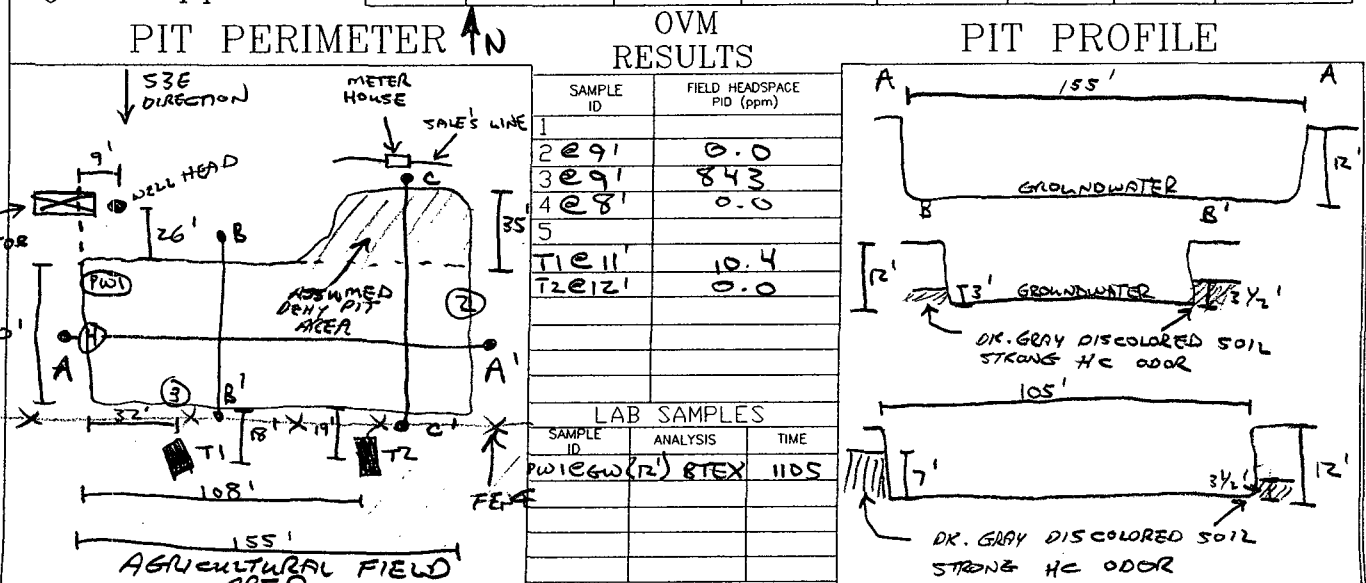
SOIL AND EXCAVATION DESCRIPTION:

EAST & WEST SIDEWALLS: SILTY SAND TO CLAY, MOD. YELL. ORANGE TO DR. YELL. BROWN, SLIGHTLY TO HIGHLY PLASTIC, MOIST, STIFF, NO APPARENT HC ODOR IN OVM SAMPLES.

NORTH & SOUTH SIDEWALLS: SILTY SAND TO CLAY, MOSTLY MOD. TO DR. YELL. BROWN DOWN TO APPROX. 8 1/2' TO 9', THEN MOD. DR. GRAY TO BLACK DOWN TO GROUNDWATER SLIGHTLY TO HIGHLY PLASTIC, MOIST TO SATURATED, STIFF, STRONG HC IN SOUTH SIDEWALL OVM SAMPLE.

* MW'S PLANNED TO BE INSTALLED AT A TIME TO BE DETERMINED LATER.

FIELD 418.1 CALCULATIONS							
TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1015	③ @ 9'	TPH-1425	5	20	1:1	119	476
1035	T1 @ 12'	TPH-1426	5	20	1:1	12	48



TRAVEL NOTES: CALLOUT: <u>3/24/95</u> ONSITE: <u>3/27/95</u>
--

OFF: (505) 325-8786



LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: *Nelson Velez*
Company: *Blagg Engineering*
Address: *P.O. Box 87*
City, State: *Bloomfield, NM 87413*

Date: *3/27/95*
Lab ID: *2961*
Sample ID: *5682*
Job No. *2-1000*

Project Name: *GCU 170*
Project Location: *PW 1 @ GW (12') - Sep Pit*
Sampled by: *NV* Date: *3/27/95*
Analyzed by: *DC* Date: *3/27/95*
Sample Matrix: *Water*

Time: *11:05*

Aromatic Volatile Organics

<i>Component</i>	<i>Measured Concentration ug/L</i>	<i>Detection Limit Concentration ug/L</i>
<i>Benzene</i>	<i>11.9</i>	<i>0.2</i>
<i>Toluene</i>	<i>15.1</i>	<i>0.2</i>
<i>Ethylbenzene</i>	<i>ND</i>	<i>0.2</i>
<i>m,p-Xylene</i>	<i>14.0</i>	<i>0.2</i>
<i>o-Xylene</i>	<i>8.3</i>	<i>0.2</i>
	<i>TOTAL 49.3 ug/L</i>	

ND - Not Detectable

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

Approved by: *Da 4*
Date: *3/27/95*

P. O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

**FIELD MODIFIED EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS**

Client: Amoco
Sample ID: 3 @ 9'
Project Location: GCU 170
Laboratory Number: TPH-1425

Project #:
Date Analyzed: 03-27-95
Date Reported: 03-27-95
Sample Matrix: Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	480	20

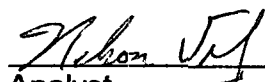
ND = Not Detectable at stated detection limits.

QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	14000	13000	7.41

*Administrative Acceptance limits set at 30%.

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

Comments: Separator Pit - B0238



Analyst



Review

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

Field TPH-Worksheet

Max Characters:

Client:

Amoco

Project #:

Sample ID:

3 @ 9'

Date Analyzed:

03-27-95

Project Location:

GCU 170

Date Reported:

03-27-95

Laboratory Number:

TPH-1425

Sample Matrix:

Soil

Sample Weight: 5.00 grams
Volume Freon: 20.00 mL
Dilution Factor: 1 (unitless)
TPH Reading: 119 mg/kg

TPH Result: 476.0 mg/kg
Reported TPH Result: 480 mg/kg
Actual Detection Limit: 20.0 mg/kg
Reported Detection Limit: 20 mg/kg

QA/QC:

Original
TPH mg/kgDuplicate
TPH mg/kg%
Diff.-----
14000-----
13000---
7.41

Comments:

*****Max Characters*****

Comments:

Separator Pit - B0238

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

**FIELD MODIFIED EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS**

Client: Amoco
Sample ID: T1 @ 11'
Project Location: GCU 170
Laboratory Number: TPH-1426

Project #:
Date Analyzed: 03-27-95
Date Reported: 03-27-95
Sample Matrix: Soil

Parameter	Result, mg/kg	Detection Limit, mg/kg
Total Recoverable Petroleum Hydrocarbons	48	20

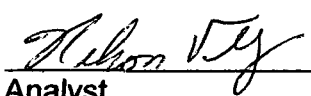
ND = Not Detectable at stated detection limits.

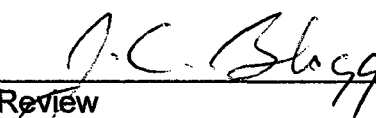
QA/QC:	QA/QC Sample TPH mg/kg	Duplicate TPH mg/kg	% *Diff.
	14000	13000	7.41

*Administrative Acceptance limits set at 30%.

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

Comments: Separator Pit - B0238


Analyst


Review

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

Field TPH-Worksheet

Max Characters:

Client: Amoco
Sample ID: T1 @ 11'
Project Location: GCU 170
Laboratory Number: TPH-1426

Project #:
Date Analyzed: 03-27-95
Date Reported: 03-27-95
Sample Matrix: Soil

Sample Weight: 5.00 grams
Volume Freon: 20.00 mL
Dilution Factor: 1 (unitless)
TPH Reading: 12 mg/kg

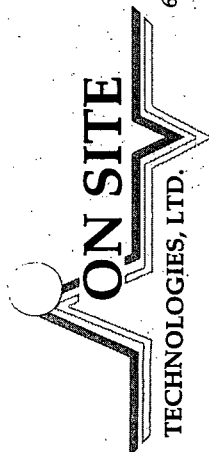
TPH Result: 48.0 mg/kg
Reported TPH Result: 48 mg/kg
Actual Detection Limit: 20.0 mg/kg
Reported Detection Limit: 20 mg/kg

QA/QC:	Original TPH mg/kg	Duplicate TPH mg/kg	% Diff.
	----- 14000	----- 13000	----- 7.41

Comments: *****Max Characters*****

Comments: Separator Pit - B0238

CHAIN OF CUSTODY RECORD



6557 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 2/27/95

Page 1 of 1

80238.

[illegible]

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

CHAIN OF CUSTODY RECORD

1592

Date:

Page 1 of 1

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

80238

[illegible]

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