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REPORTS

DATE:

FEB 2001

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

February 5, 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
Martinez GC G # 1, Unit A, Sec. 24, T29N, R10W, NMPM
San Juan County, New Mexico

Dear Mr. Olson:

BP Amoco has retained Blagg Engineering, Inc. to conduct environmental monitoring and reclamation of groundwater at the Martinez GC G # 1 currently operated by Cross Timbers Oil Company (CTOC). CTOC acquired the well site in January, 1998, however, BP Amoco has and is currently accepting the environmental obligation associated with soil and groundwater contamination that occurred prior to the change of well ownership.

After the initial pit closure cleanup efforts at the site, an air sparge/vacuum extraction system was utilized in aggressively remediating on-site hydrocarbon contamination in groundwater. The system was designed to treat soils and groundwater that had not been reclamated by other practical methods. A replacement air sparge system was installed in February, 1999 to address groundwater contamination previously identified at other areas on the well pad.

If you have any questions concerning this document, 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

cc: Mr. Denny Foust, Environmental Geologist, NMOCD District III Office, Aztec, NM
Mr. Buddy Shaw, Environmental Coordinator, BP Amoco, Farmington, NM (without document)
Ms. Nina Hutton, Environmental & Safety Manager, CTOC, Ft. Worth, TX
Mr. Terry Matthews, Regional Manager, CTOC, Farmington, NM

NJV/njv MART-G1.CVL

BP AMOCO
Martinez GC G #1
Ne/4 Ne/4 Sec. 24, T29N, R10W

Pit Closure Dates:	**Aug., '93, Jan., '94, & Jul., '94**
Monitor Well Installation Dates:	**Mar. 15th & 16th, '94 Jan. 28, '98, Feb. 10, '98, & Feb. 10, '99**
Air Sparge Installation Dates:	**Feb. 10, '99**

Pit Closures & Background:

Pit closure of the site's blow pit was conducted in **August, 1993** (refer to *Pit Closure Information* tab heading). The excavated area encompassed approximately 90 feet by 110 feet in dimension. The soil excavated was estimated at 1,200 cubic yards and landfarmed on-site. Groundwater was encountered during the soil excavation at approximately three (3) to five (5) feet below grade. The exposed groundwater within the pit area was sampled and tested by Envirotech, Inc. on **August 31, 1993** for benzene, toluene, ethylbenzene, and total xylenes (**BTEX**) per US EPA method 8020. The BTEX results of the groundwater sampling event is as follows;

Date	8/31/93	NMWQCC standards
Sample ID	Pit Water	
benzene (ppb)	9.3	*10*
toluene (ppb)	7.8	*750*
ethylbenzene (ppb)	3.6	*750*
xylenes (ppb)	83.7	*620*

Note: ppb = parts per billion, NMWQCC = New Mexico Water Quality Control Commission.

It appeared that no further remedial action was necessary and the excavation was backfilled.

Pit closure of the site's dehydrator pit was conducted in **January, 1994** (see *Figure 1* for location). The excavated area encompassed approximately 35 feet by 20 feet in dimension. The soil excavated was estimated at 200 cubic yards with approximately 108 cubic yards transported to BP Amoco's Crouch Mesa facility and the remaining 92 cubic yards landfarmed on-site. Groundwater was encountered during the soil excavation at approximately nine (9) feet below grade. Only one (1) soil sample was collected during the initial excavation as it was apparent that additional remedial efforts were needed. The sample was collected and tested by Envirotech, Inc. on **January 5, 1994** for total petroleum hydrocarbon (**TPH**) analysis per US EPA method 418.1. The TPH results of the soil sampling event is as follows;

Date	1/5/94	NMOCD TPH standard
Sample ID	1 @ 6'	
Soil TPH (ppm)	12,900	*100*

Note: TPH = total petroleum hydrocarbons, NMOCD = New Mexico Oil Conservation Division, ppm = parts per million.

On **March 16th and 17th, 1994**, twelve 1 1/4 inch galvanize steel drive points were installed by Envirotech, Inc. to

investigate groundwater quality on and off-site (refer to *Sheet 1* for locations). On **March 22, 1994**, the drive points were sampled and tested by Envirotech, Inc. for BTEX. The following table reveals the field parameters and BTEX results for all twelve (12) sampling points.

WELL POINT	pH	CONDUC-TIVITY umhos/cm	BENZENE ug/L	TOLUENE ug/L	ETHYL-BENZENE ug/L	TOTAL XYLENES ug/L
#1	7.1	1,200	ND	ND	ND	ND
#2	6.7	1,200	ND	0.3	0.4	4.1
#3	7.0	1,900	0.9	17.2	ND	43.0
#4	6.7	1,200	***960.0***	***1,670.0***	***940.0***	***3,050.0***
#5	7.4	500	5.9	6.6	53.0	633.0
#6	6.8	1,000	***7,100.0***	***49.3***	***1,640.0***	***10,400.0***
#7	6.8	1,800	***1,980.0***	***710.0***	***1,530.0***	***11,300.0***
#8	7.0	2,000	9.3	14.8	19.7	340.0
#9	7.0	700	ND	ND	0.5	13.3
#10	6.8	1,900	ND	3.2	ND	0.7
#11	7.3	1,200	ND	ND	ND	2.1
#12	7.5	1,600	0.7	8.8	2.2	46.8
NMWQCC STANDARDS	6-9	-	***10***	***750***	***750***	***620***

Note: umhos =micro ohms., cm = centimeter, ug/L = micrograms per liter or parts per billion, NMWQCC = New Mexico Water Quality Control Commission.

A site assessment was conducted off-site in **May, 1994** to further delineate soil and groundwater contamination associated with the site's dehydrator pit (refer to *Pit Closure Information* tab heading). Four (4) test holes were advanced south and southeast of the pit area (see Figure 1 for locations). Groundwater was encountered during the assessment at approximately three (3) to four (4) feet below grade within two (2) of the test holes. The exposed groundwater within test holes #1 and #3 were sampled and tested by Envirotech, Inc. on **May 2, 1994** for BTEX. Recovered soil samples were field screened for volatile hydrocarbon vapors with an organic vapor meter (**OVM**) applying the Headspace Field Method (New Mexico Oil Conservation Division (**NMOCD**) Surface Impoundment Closure Guidelines, February, 1993). The furthest down gradient test hole (TH #4) showed no noticeable evidence of gross hydrocarbon contamination. A soil sample was collected and analyzed for TPH in addition to the field screening previously mentioned. The results of the soil & groundwater sampling event is as follows;

Date	5/2/94	5/2/94	5/2/94	5/2/94	Regulatory standards
Sample ID	T 1 @ GW (4')	T2 @ 3'	T 3 @ GW (3')	T 4 @ 2'	
benzene (ppb)	***13.7***	-	***6,200***	-	***10***
toluene (ppb)	36.6	-	44.6	-	***750***
ethylbenzene (ppb)	37.2	-	***990***	-	***750***
xylenes (ppb)	564	-	***6,700***	-	***620***
OVM (ppm)	***643***	***1014***	***867***	10.8	***100***
Soil TPH (ppm)	-	-	-	ND	***100***

Note: ppb = parts per billion, ppm = parts per million, OVM = Organic Vapor Meter, TPH = total petroleum hydrocarbons.

Based on the site assessment findings, a pit closure was conducted (referred to as an abandoned pit) in **July & August, 1994** (see *Figure 1* for location). The excavated area encompassed approximately 45 feet by 35 feet in dimension. The soil excavated was estimated at 175 cubic yards and landfarmed on-site. Groundwater was encountered during the soil excavation at approximately two (2) feet below grade. The exposed groundwater within the pit area was initially sampled by Blagg Engineering, Inc. (**BEI**) and tested by On-Site Technologies, LTD. on **July 19th, 1994** for BTEX. Upon review of the laboratory results, the groundwater within the pit area was pumped and disposed by Triple S trucking and subsequently sampled using the same routines on **July 25th, August 1st, and 9th, 1994** for BTEX. The BTEX results of the groundwater sampling event is as follows;

Date	7/19/94	7/25/94	8/1/94	8/9/94	Regulatory standards (ppb)
Sample ID	C @ GW (2')	C2 @ GW(2')	C3 @ GW (2')	C4 @ GW (2')	
benzene	***306***	***749***	***134***	***106***	***10***
toluene	14	16	5.0	4.7	***750***
ethylbenzene	151	194	120	140	***750***
xylenes	***2,644***	***8,224***	***2,191***	***2,418***	***620***

Note: ppb = parts per billion, ppm = parts per million, OVM = Organic Vapor Meter, TPH = total petroleum hydrocarbons.

An apparent air sparge/vacuum extraction system was installed by P&S between **January & July, 1997**. Specifications of the system are unknown. All that can be disclosed of the system is the location of each point as illustrated in Figure 3 under the *Air Sparge Systems* tab heading.

In **January-February, 1998**, BEI installed four (4) each 2 inch PVC groundwater monitor wells (MW #'s 2R, 3R, 6R, & 7R) using a truck mounted drill rig (see *Figure 2* for locations). All monitor wells were positioned as to replace the respectively named drive points (refer to *Figure 2A*). Boring logs and monitor well completion schematics can be reviewed under the *Boring Logs & MW Details* tab heading. The initial sampling events for these monitor wells was conducted on **February 2 & 25, 1998**. After monitoring the site each quarter, it was determined to replace the air sparge/vacuum extraction system in place with a revised air sparge system which was expanded along the well pad's east/west fence line.

Reclamation System:

The present air sparge reclamation system (*Figure 3A*) was installed **February 10, 1999**. BEI utilized a truck mounted drill rig to place the top screen of each air sparge point exactly two (2) feet below the predetermined groundwater gradient derived from water measurements collected on February 2, 1999 from the site monitor wells. *Figure 3B* illustrates the construction and completion of air sparge point AS-4, where groundwater was measured in MW #6R @ 8.77 feet from the top of its casing.

Groundwater Monitor Well Sampling Procedures:

Groundwater samples were collected from site monitor wells following US EPA: SW-846 protocol. The samples were collected using new disposable bailers and placed in new laboratory supplied forty (40) milliliter glass vials with teflon septa caps. Samples were analyzed for BTEX per US EPA Method 8021. Additional groundwater was collected and placed in laboratory supplied and cleaned 500 ml plastic containers and analyzed for general water quality per US EPA Method 600/4-79-020.

The samples were preserved cool (BTEX samples also preserved with 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.

Groundwater Quality & Flow Direction Information:

Sampling of the groundwater monitor wells at the site has been ongoing since February, 1998. A summary of laboratory analytical results is included within the tables on the following pages and laboratory data reports are included in *MW Data with Lab Reports* tab heading. Analytical data indicates that groundwater impact has been remediate below NMWQCC standards for all site monitor wells for at least four (4) consecutive sampling events.

Groundwater contour maps of relative water table elevations for sample events with sufficient data is included within the *Groundwater Contour Maps* tab heading. The general flow direction tends to be in the southeast direction. Fluctuations in the groundwater levels are dramatic between the winter and summer sampling events and are probably due to seasonal irrigation in close proximity to the well site.

Summary

Although it appears that groundwater contamination has been remediated at the well pad area, further investigation is suggested off-site. It is therefore recommended to reinvestigate the groundwater quality at and down gradient of the abandoned pit noted within this report. Upon review of the present groundwater quality, it should then be determined as to which course of action is to be taken to achieve permanent closure.

As of this writing, BP Amoco is only requesting closure for the blow pit and the landfarm (refer to *Pit Closure Information* tab heading) submitted in this report.

AMOCO GROUNDWATER MONITOR WELL LABORATORY RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

REVISED DATE: DEC. 1, 2000
FILENAME: (G1-4Q-00.WK4) NJV

SAMPLE DATE	MONITOR WELL #	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
25-Feb-98	MW #2R	12.04	13.90	973	1,600	7.5		6.4	19.2	2.5	18.7
29-May-98		10.17			1,100	7.0		0.4	ND	0.2	4.8
24-Sep-98		8.34			1,300	7.3		0.5	1.0	0.2	2.0
18-Dec-98		10.04			1,100	7.7		0.7	0.5	ND	0.4
25-Feb-98	MW #3R	11.40	15.90	1895	2,700	7.4		173	1690	302	950
29-May-98		9.74			3,000	7.2		665	230	484	5760
24-Sep-98		7.94			3,300	7.1		713	40.5	529	5980
18-Dec-98		9.28			2,500	7.7		257	222	143	661
15-Feb-99		10.77						599	102	335	2505
24-May-99		9.15			2,900	7.1		37.6	12.4	128	1021
23-Aug-99		8.37			3,200	7.0		11.2	1.3	9.2	813
06-Dec-99		8.94			3,000	7.2		42.7	119	113	1640
23-Feb-00		10.91			2,900	7.3		ND	19.0	28.0	910
15-May-00		8.72			3,000	7.1		ND	ND	5.8	66
24-Aug-00		7.67			3,400	7.3		ND	ND	ND	35
28-Nov-00		9.76			5,000	7.1		ND	ND	1.5	17.2
15-Feb-99	MW #5R	10.30	16.00					32.3	27.5	60.2	588
24-May-99		8.32			1,200	7.4		56.5	63.7	9.2	133.8
23-Aug-99		7.93			1,000	7.3		14.2	1.7	12.0	111.5
06-Dec-99		8.43			1,100	7.3		3.9	21.6	7.5	32.3
23-Feb-00		10.37			1,000	8.7		ND	ND	ND	ND
15-May-00		7.80			1,100	8.3		ND	ND	ND	ND
24-Aug-00		6.86			1,400	8.0		ND	ND	ND	ND
28-Nov-00		8.99			1,100	8.4		ND	ND	ND	ND
02-Feb-98	MW #6R	9.17	14.60	737	1,400	7.2		2620	12.5	787	3900
29-May-98		7.43			1,400	7.2		59.6	ND	16.5	393.5
24-Sep-98		5.77			1,200	7.5		226	21.9	250	3452
18-Dec-98		6.91			1,300	7.3		161	34.0	77.8	500
15-Feb-99		8.52						779	17.8	312	1828
24-May-99		6.55			1,200	6.7		397	182	80.9	840
23-Aug-99		6.08			1,000	7.1		13.9	17.4	12.7	495.4
06-Dec-99		6.11			1,000	7.2		312	213	255	1650
23-Feb-00		8.56			1,300	8.6		ND	2.1	1.8	8.2
15-May-00		6.43			1,400	8.3		ND	ND	ND	3.8
24-Aug-00		5.28			1,300	8.1		ND	ND	4.7	88
28-Nov-00		7.23			1,300	8.5		ND	ND	1.7	23.1

AMOCO GROUNDWATER MONITOR WELL LABORATORY RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

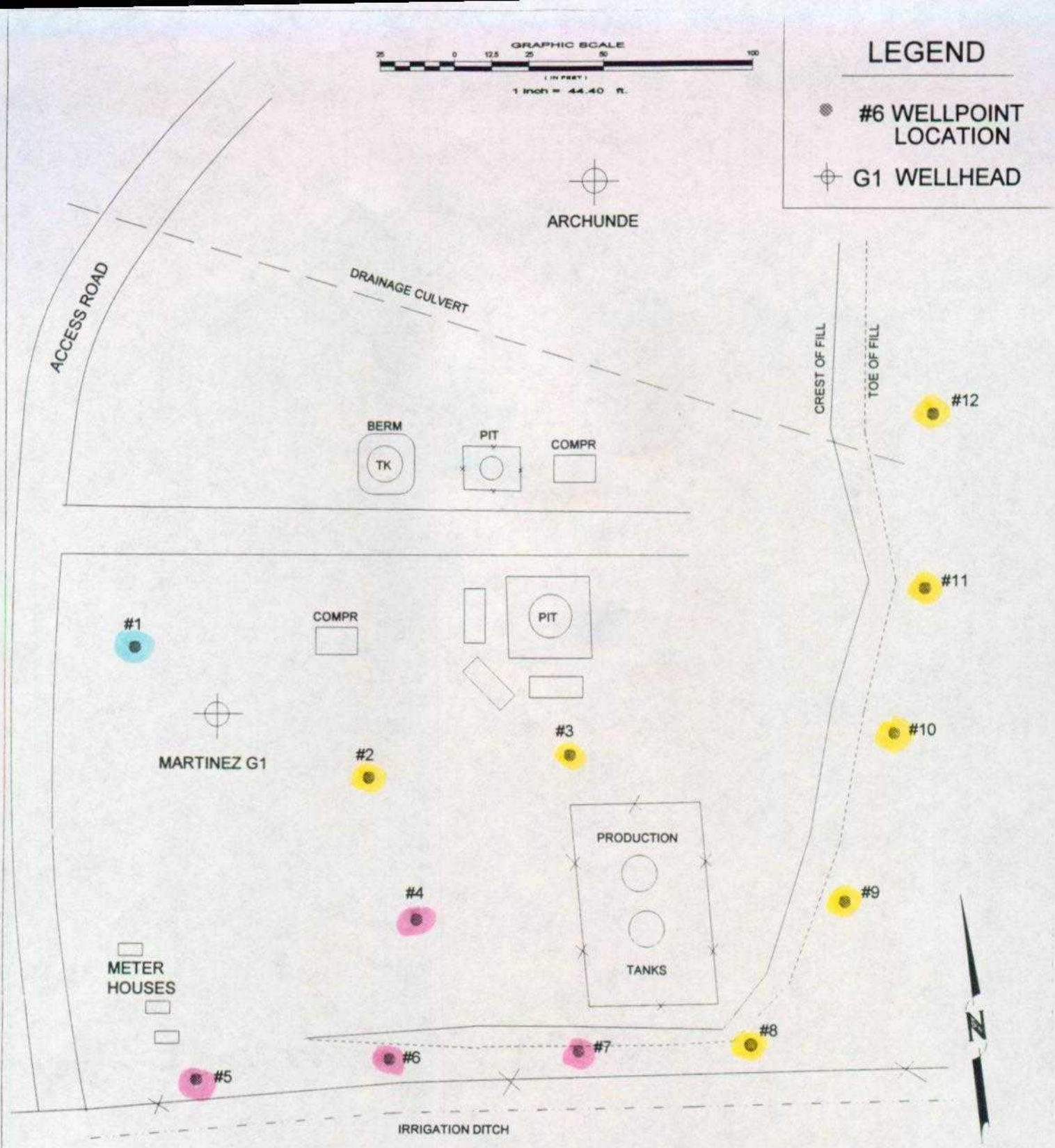
MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

REVISED DATE: DEC. 1, 2000
FILENAME: (G1-4Q-00.WK4) NJV

SAMPLE DATE	MONITOR WELL #	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
02-Feb-98	MW #7R	12.29	17.00	1513	2400	7.2		236	35.9	208	3215
29-May-98		10.52			1200	7.2		213	19.2	58.6	1173
24-Sep-98		8.89			1100	7.5		23.5	6.9	8.9	110.7
18-Dec-98		10.28			2000	7.3		75.6	18.6	19.4	206.4
15-Feb-99		11.68						97.5	5.0	13.8	158.7
24-May-99		10.08			1,500	7.2		2.8	7.0	5.2	32.1
23-Aug-99		9.44			800	7.0		1.8	0.2	0.4	14.8
06-Dec-99		9.90			700	7.0		14.7	11.1	11	71.4
23-Feb-00		11.76			1,100	8.4		ND	ND	ND	ND
15-May-00		9.32			1,300	8.1		ND	ND	0.5	ND
24-Aug-00		8.43			900	7.9		ND	ND	ND	ND
28-Nov-00		10.39			800	8.3		ND	ND	ND	ND

GENERAL WATER QUALITY
AMOCO PRODUCTION COMPANY
MARTINEZ GC G #1
SAMPLE DATES : FEBRUARY 2 & 25, 1999

PARAMETERS	MW # 2R	MW # 3R	MW # 5R	MW # 6R	MW # 7R	Units
LAB pH	7.05	7.24	-	7.02	7.12	s. u.
LAB CONDUCTIVITY @ 25 C	1,980	3,850	-	1,488	3,055	umhos / cm
TOTAL DISSOLVED SOLIDS @ 180 C	985	1,900	-	750	1,525	mg / L
TOTAL DISSOLVED SOLIDS (Calc)	973	1,895	-	737	1,513	mg / L
SODIUM ABSORPTION RATIO	2.4	10.7	-	4.8	6.5	ratio
TOTAL ALKALINITY AS CaCO3	516	1,884	-	730	904	mg / L
TOTAL HARDNESS AS CaCO3	524	460	-	246	542	mg / L
BICARBONATE as HCO3	516	1,884	-	730	904	mg / L
CARBONATE AS CO3	< 1	< 1	-	< 1	< 1	mg / L
HYDROXIDE AS OH	< 1	< 1	-	< 1	< 1	mg / L
NITRATE NITROGEN	2.8	0.4	-	0.2	0.4	mg / L
NITRITE NITROGEN	0.017	0.001	-	<.001	0.006	mg / L
CHLORIDE	60.0	37.8	-	19.6	382	mg / L
FLUORIDE	1.04	1.04	-	1.01	1.02	mg / L
PHOSPHATE	1.7	2.3	-	0.2	1.6	mg / L
SULFATE	278	6.8	-	1.1	30.2	mg / L
IRON	NA	NA	-	NA	NA	mg / L
CALCIUM	152	154	-	82.4	153	mg / L
MAGNESIUM	35.2	18.6	-	9.76	39.1	mg / L
POTASSIUM	1.5	2.0	-	5.2	7.1	mg / L
SODIUM	128	528	-	174	350	mg / L
CATION / ANION DIFFERENCE	0.02	0.04	-	0.11	0.28	%



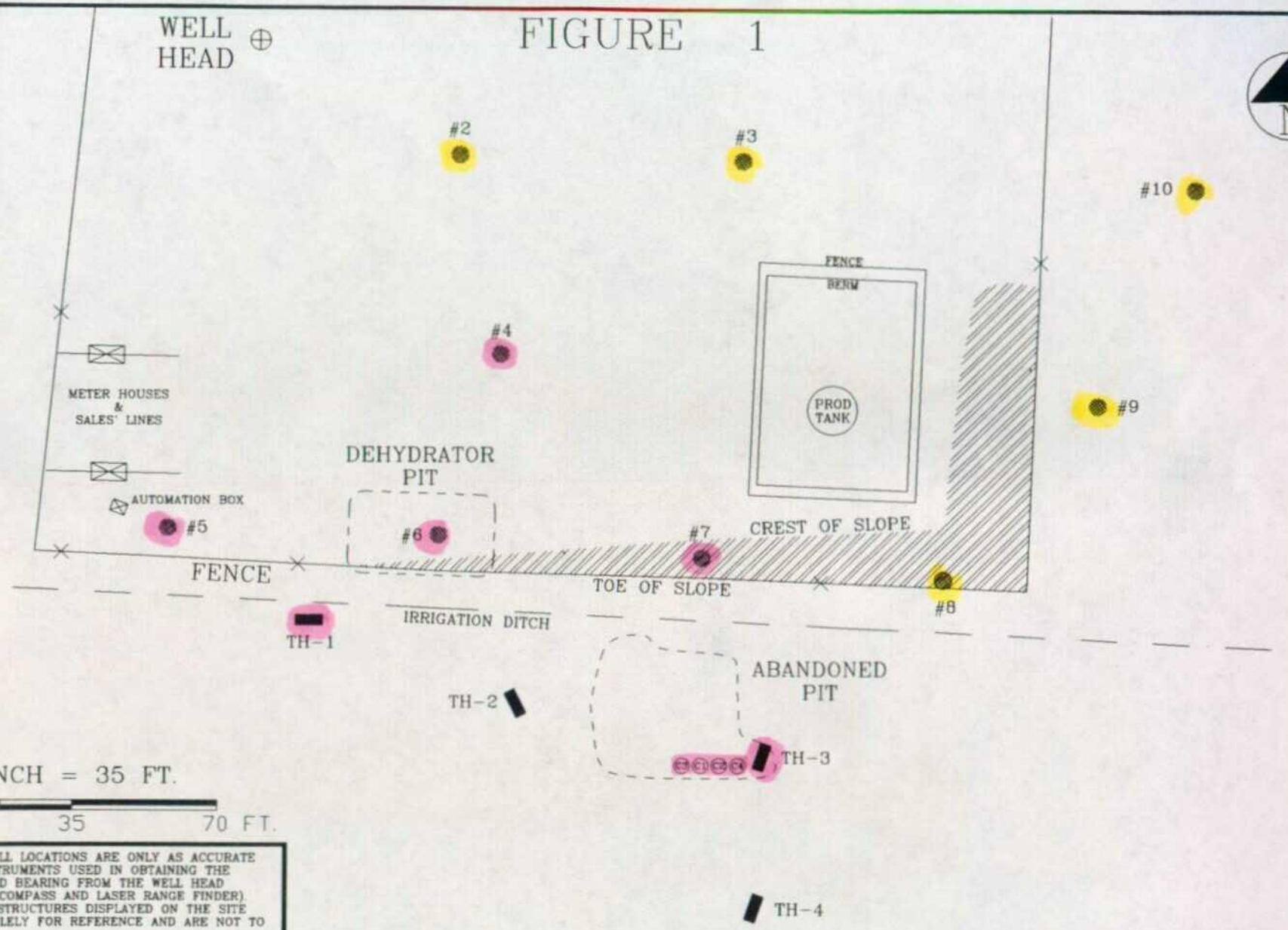
AMOCO PRODUCTION COMPANY
MARTINEZ G1
(A) S24-T29N-R10W
PROJECT #92140

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE (505) 632-0615

WELLPOINT LOCATIONS

SHEET 1	REVISED: 1/01
P.M: REO	FILENAME: MART-GI.SKD

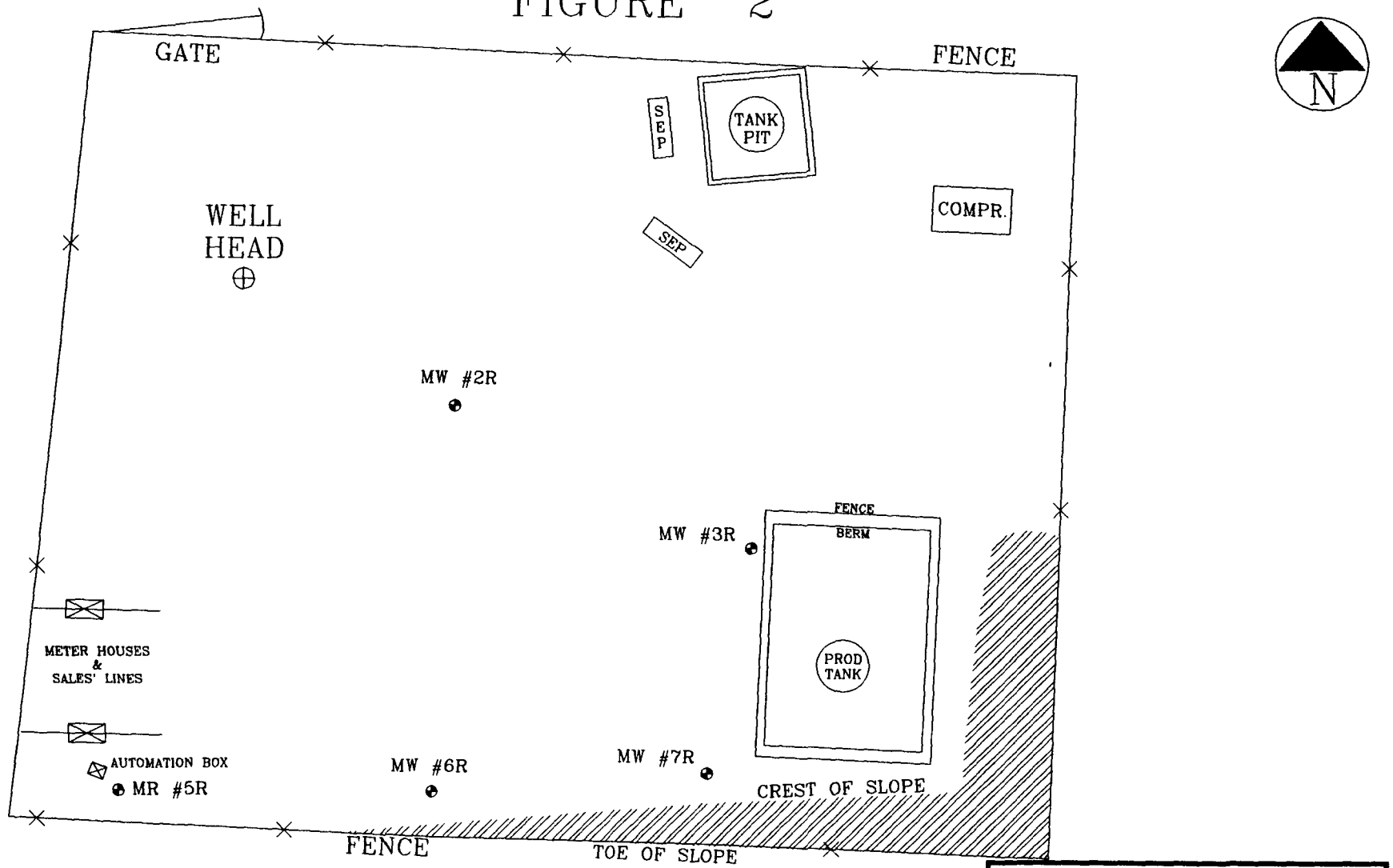
FIGURE 1



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.

AMOCO PRODUCTION COMPANY MARTINEZ GC G #1 NE/4 NE/4 SEC. 24, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: EXCAVATIONS DRAWN BY: NJV FILENAME: MART-SM1.SKD	PIT EXCAVATIONS 07/96

FIGURE 2



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AMOCO PRODUCTION COMPANY

MARTINEZ GC G #1

NE/4 NE/4 SEC. 24, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: REMED. SYS.

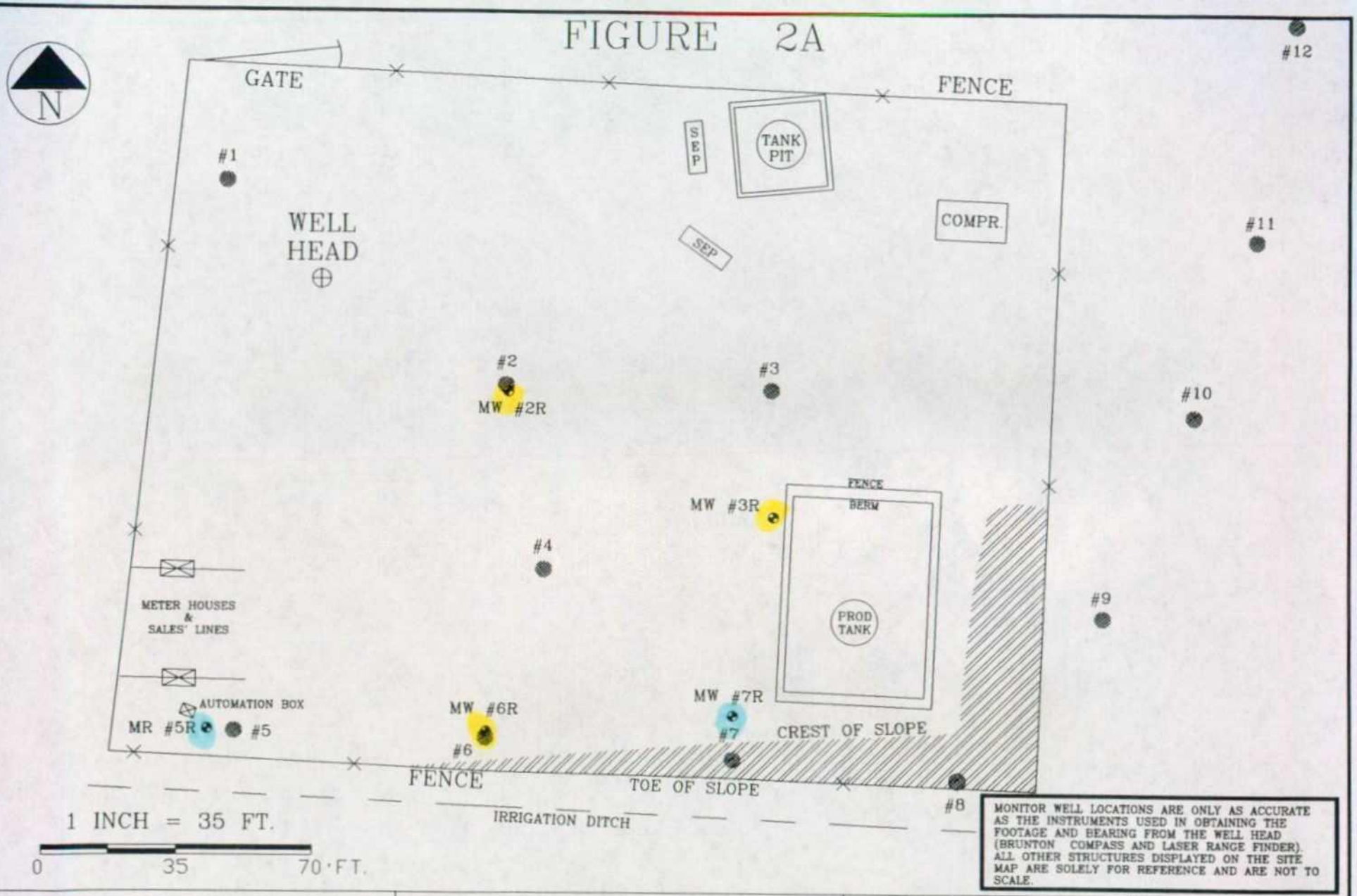
DRAWN BY: NJV

FILENAME: MART-SM2.SKD

SITE MAP

05/99

FIGURE 2A



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

AMOCO PRODUCTION COMPANY

MARTINEZ GC G #1

NE/4 NE/4 SEC. 24, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

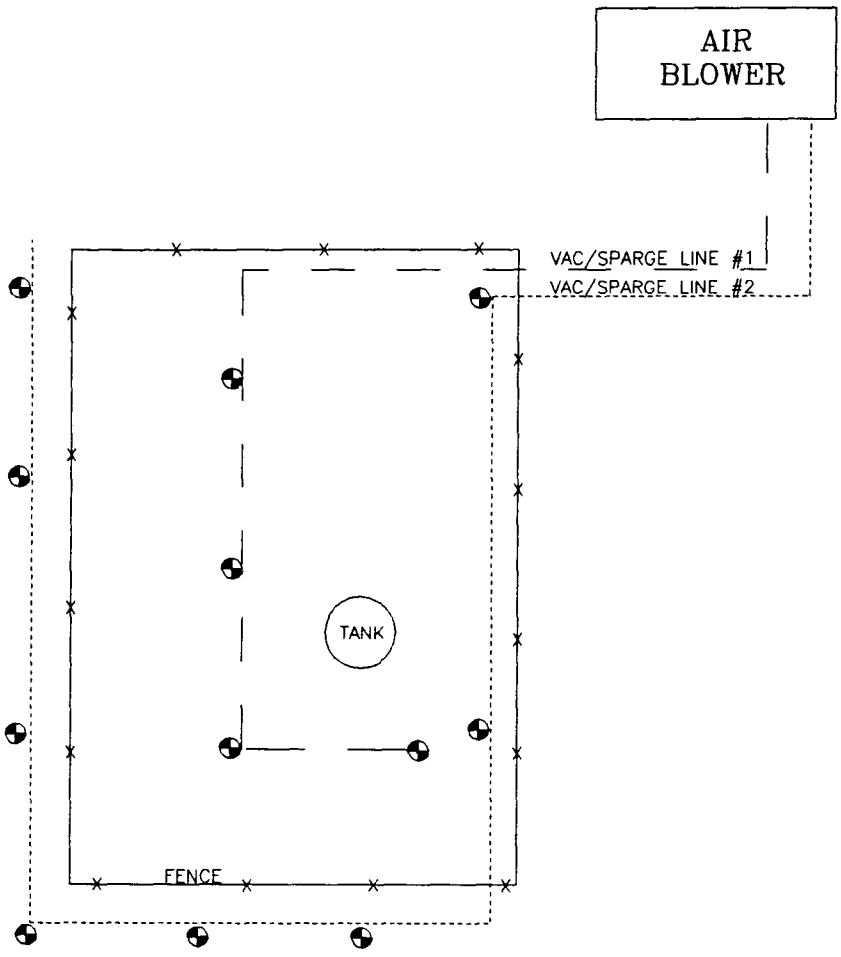
PROJECT: REMED. SYS.

DRAWN BY: NJV

FILENAME: MARTSM2A.SKD

SITE MAP

05/99



PAUL & SONS, INC.
AIR SPARGE/VACUUM
EXTRACTION SYSTEM
SCHEMATIC
(SPECIFICATIONS UNKNOWN)

LEGEND

N

SPARGE OR VACUUM POINT

0 25 50 FEET

AMOCO PRODUCTION CO.
MARTINEZ GC G NO. 1
SAN JUAN CO., NEW MEXICO

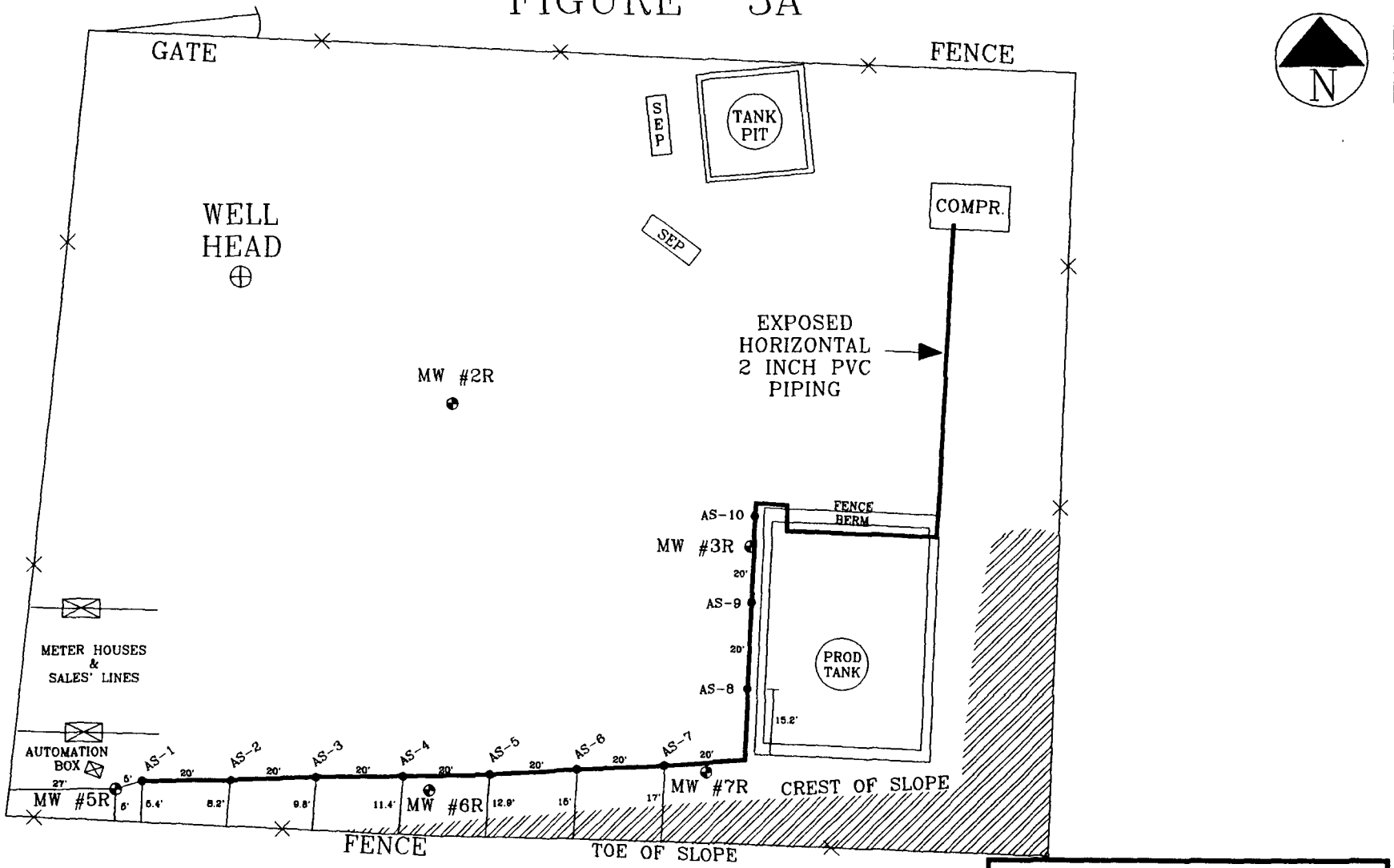
July 1997

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

SITE SCHEMATIC

FIGURE 3	DRWN BY: JCB
MART1	PROJ MGR: NJV

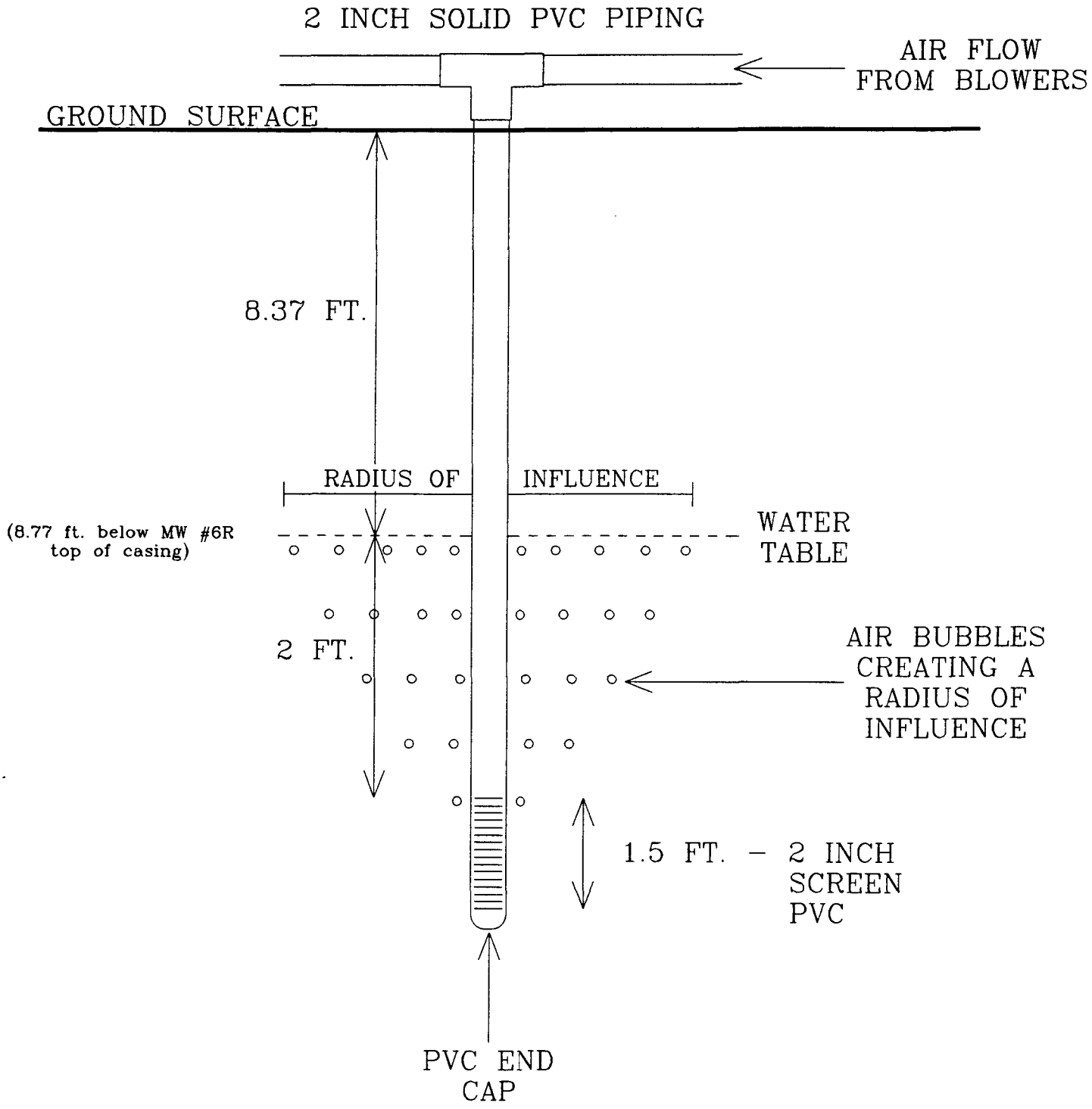
FIGURE 3A



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

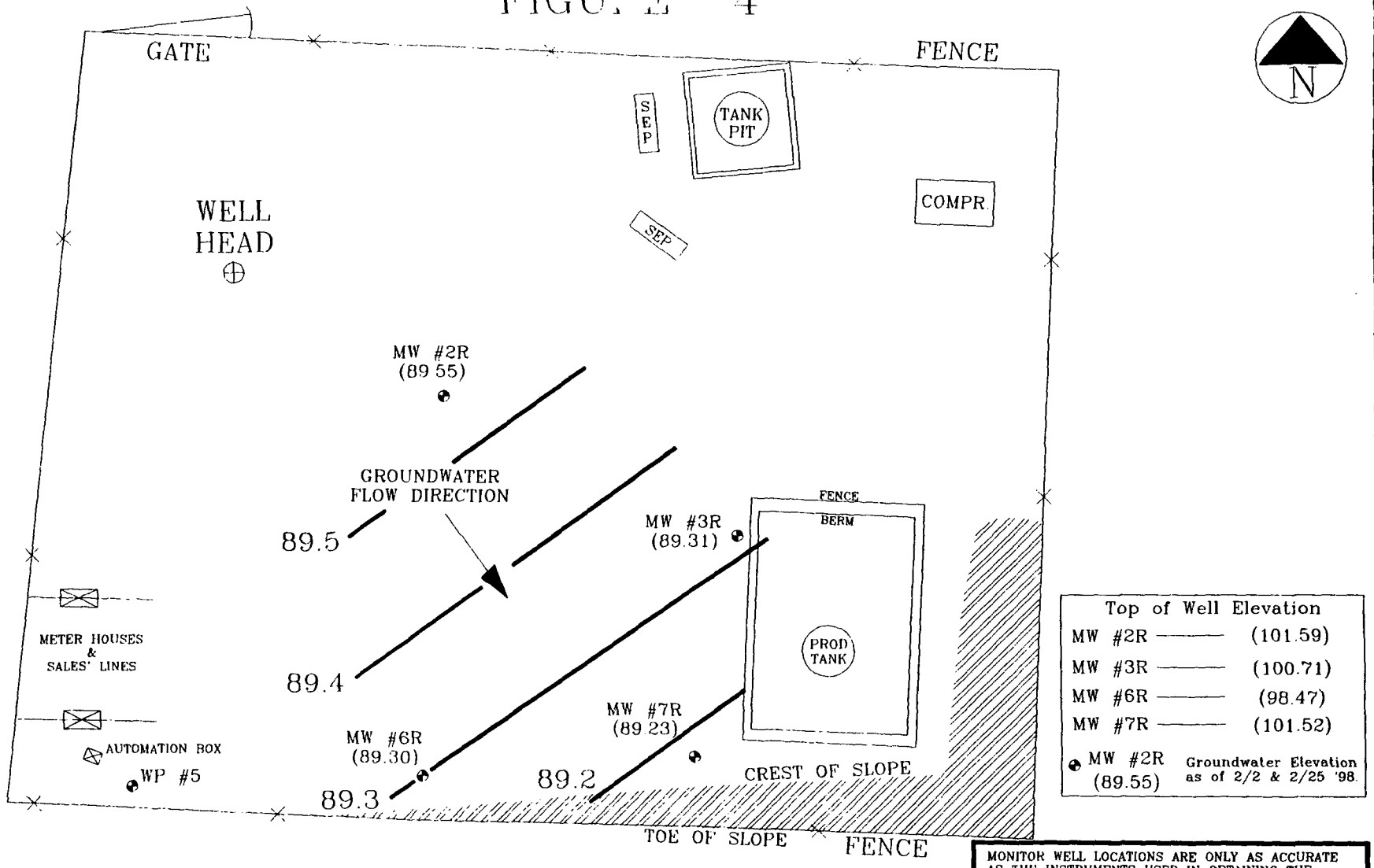
AMOCO PRODUCTION COMPANY MARTINEZ GC G #1 NE/4 NE/4 SEC. 24, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: REMED. SYS. DRAWN BY: NJV FILENAME: MART-AB.SKD	AS BUILT 05/99

SIDE VIEW OF A TYPICAL AIR SPARGE POINT
AS-4 EXAMPLE



BP AMOCO MARTINEZ GC G #1 UNIT A, SEC. 24, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	DRAWN BY: NJV FILENAME: ASDP-TEMP DRAFTED: 2/02/01	AS-4 AIR SPARGE POINT

FIGURE 4



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

AMOCO PRODUCTION COMPANY

MARTINEZ GC G #1

NE/4 NE/4 SEC. 24, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE (505) 632-1199

PROJECT: 1/4ly SAMP.

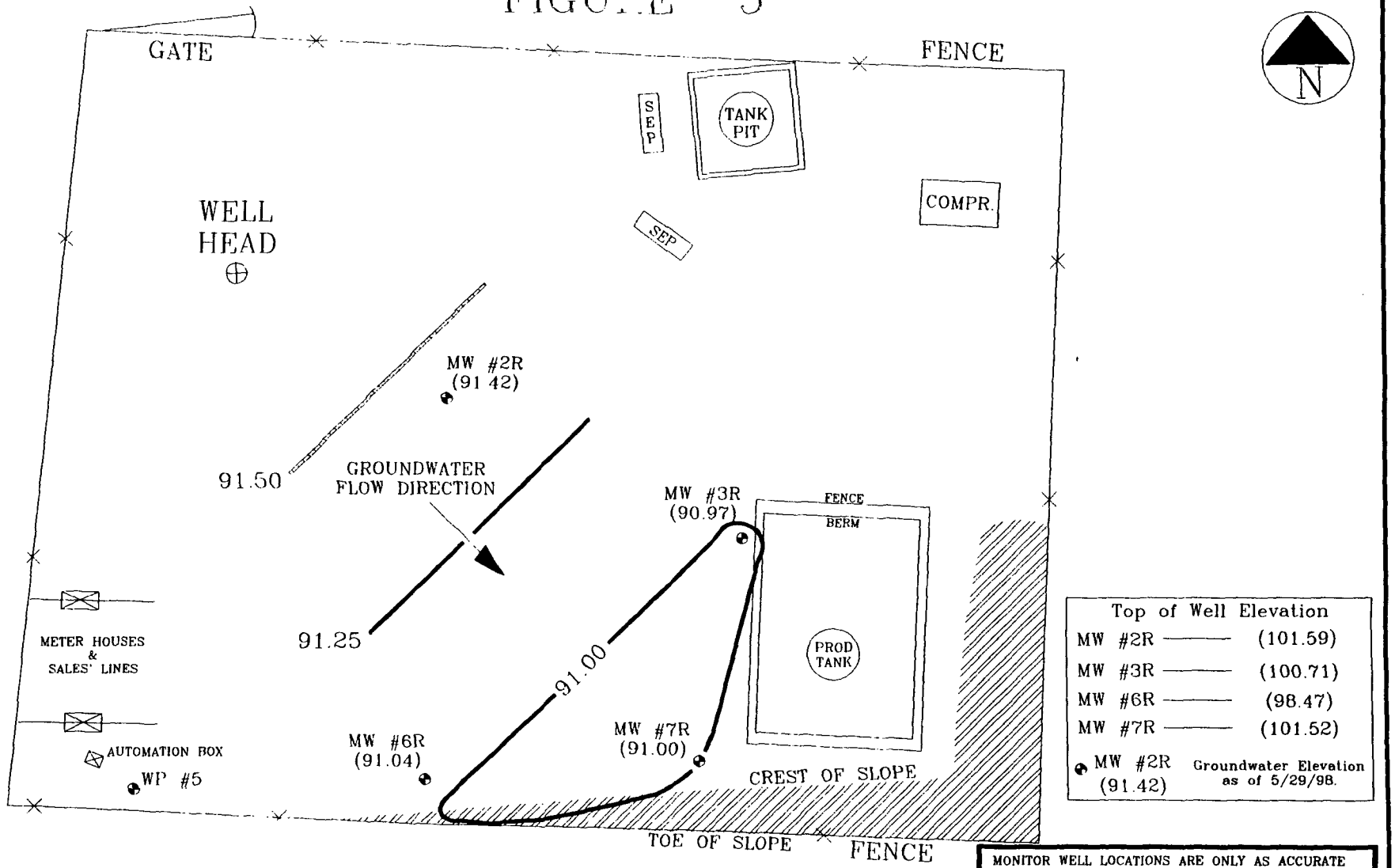
DRAWN BY: NJV

FILENAME: 02-25-GW.SKD

GROUNDWATER GRADIENT MAP

02/98

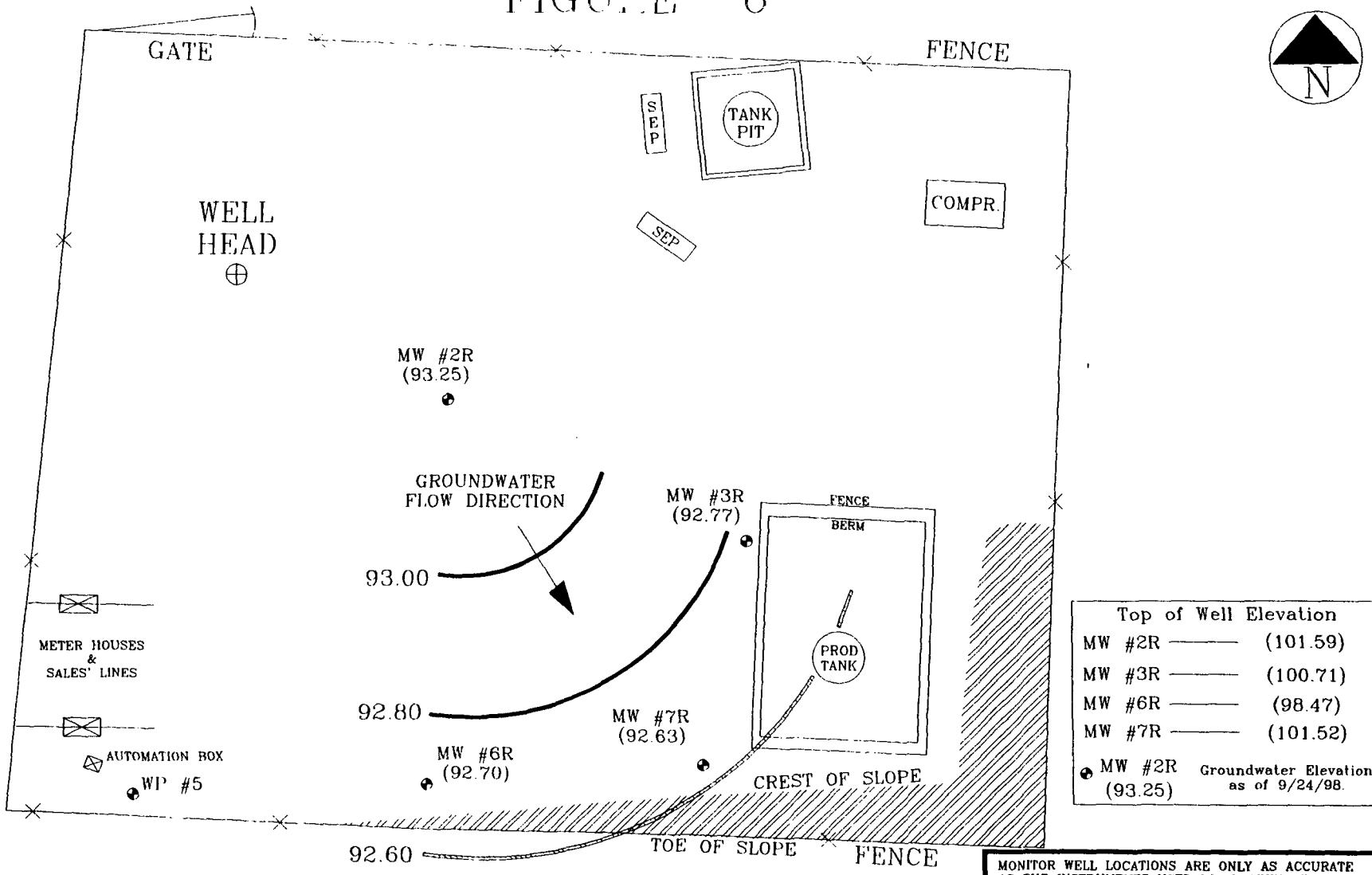
FIGURE 5



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

AMOCO PRODUCTION COMPANY MARTINEZ GC G #1 NE/4 NE/4 SEC. 24, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: 1/4ly SAMP. DRAWN BY: NJV FILENAME: 05-29-GW.SKD	GROUNDWATER GRADIENT MAP 05/98

FIGURE 6



Top of Well Elevation	
MW #2R	(101.59)
MW #3R	(100.71)
MW #6R	(98.47)
MW #7R	(101.52)

MW #2R (93.25) Groundwater Elevation as of 9/24/98.

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

AMOCO PRODUCTION COMPANY

MARTINEZ GC G #1

NE/4 NE/4 SEC. 24, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: 1/4ly SAMP.

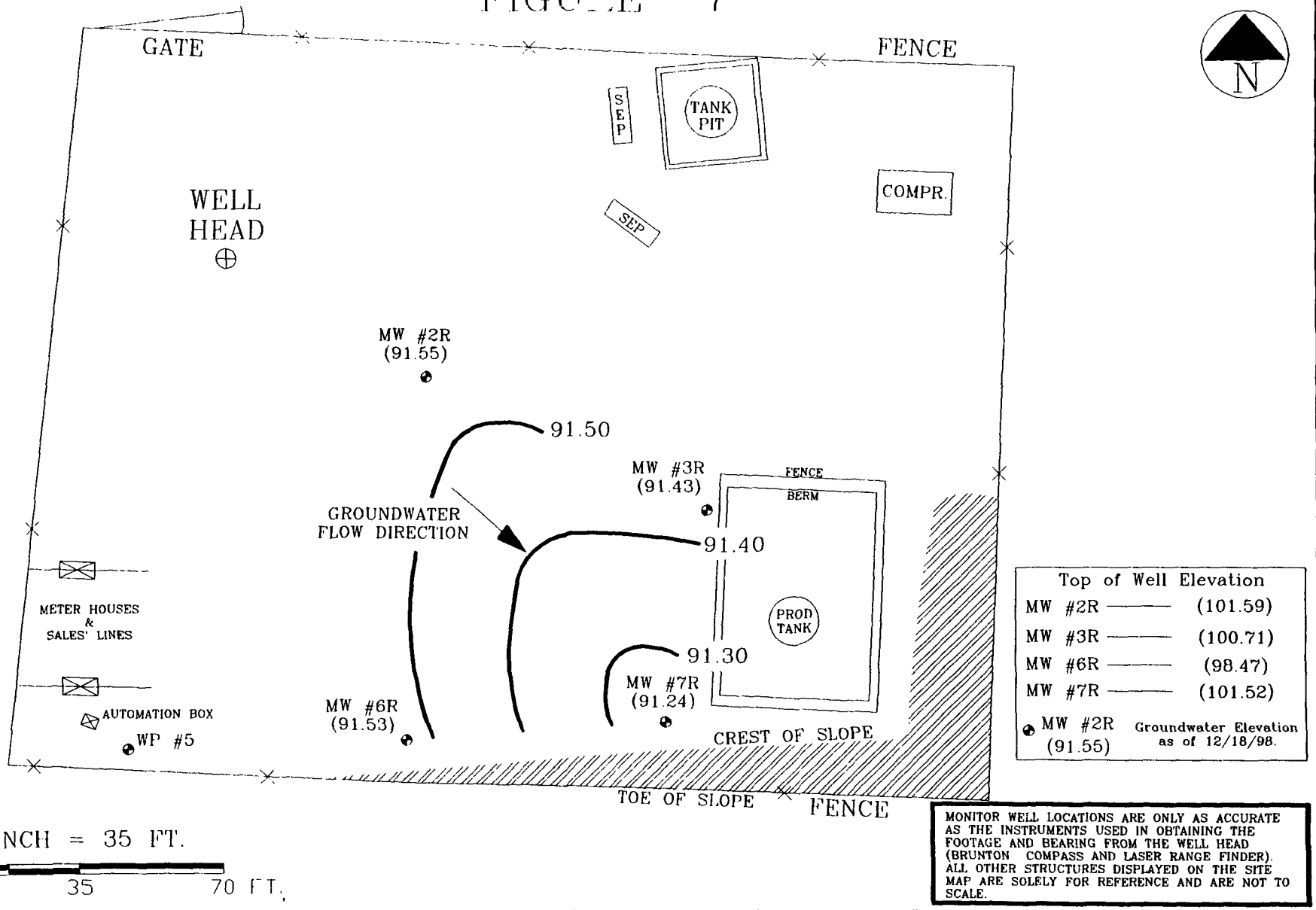
DRAWN BY: NJV

FILENAME: 09-24-GW.SKD

GROUNDWATER GRADIENT MAP

09/98

FIGULE 7



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

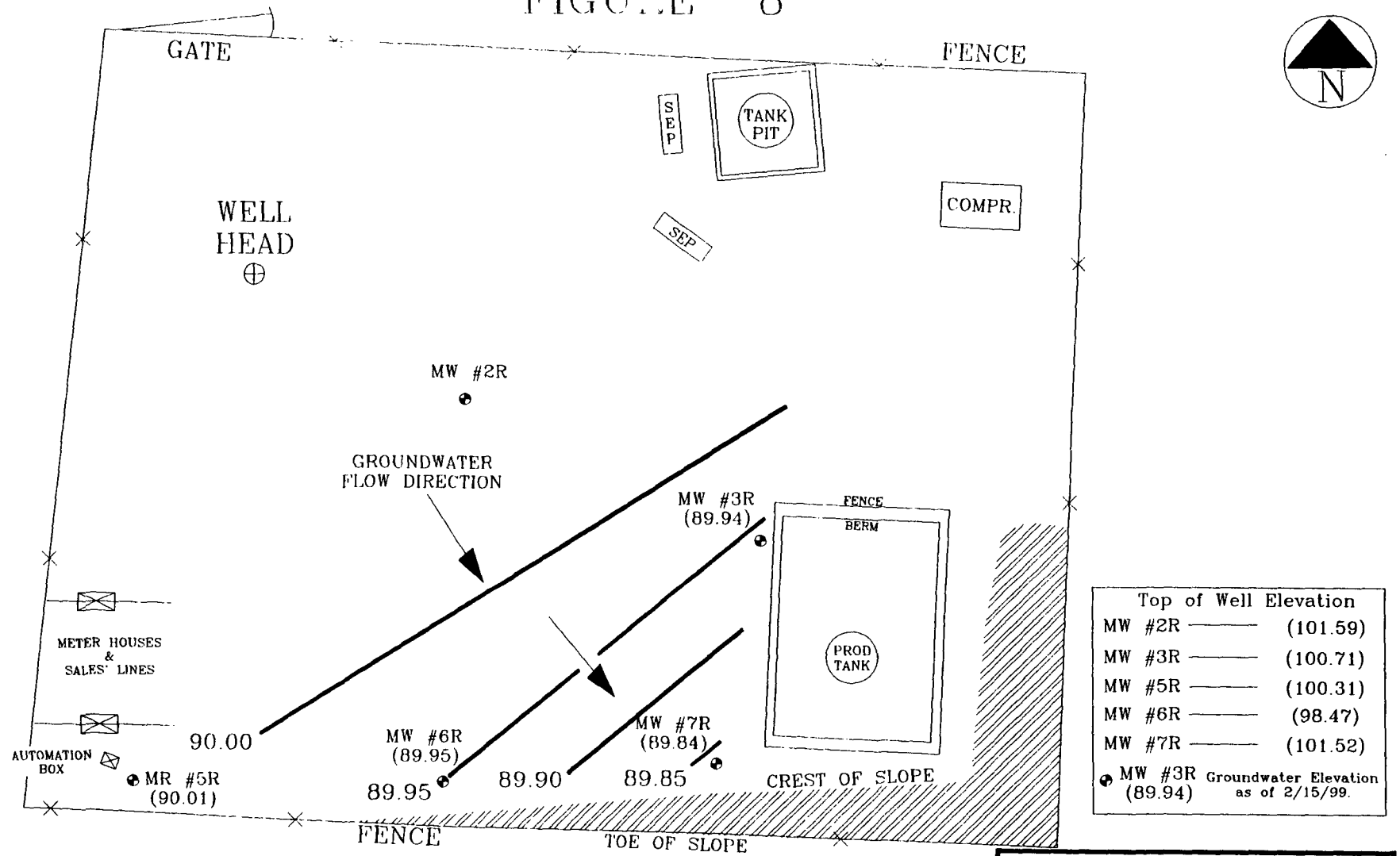
AMOCO PRODUCTION COMPANY
MARTINEZ GC G #1
NE/4 NE/4 SEC. 24, T29N, R10W
SAN JUAN COUNTY, NEW MEXICO

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

PROJECT: 1/4ly SAMP!
DRAWN BY: NJV
FILENAME: 12-18-GW.SKD

GROUNDWATER GRADIENT MAP
12/98

FIGURE 8



Top of Well Elevation	
MW #2R	(101.59)
MW #3R	(100.71)
MW #5R	(100.31)
MW #6R	(98.47)
MW #7R	(101.52)

MW #3R (89.94) Groundwater Elevation as of 2/15/99.

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

AMOCO PRODUCTION COMPANY

MARTINEZ GC G #1

NE/4 NE/4 SEC. 24, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

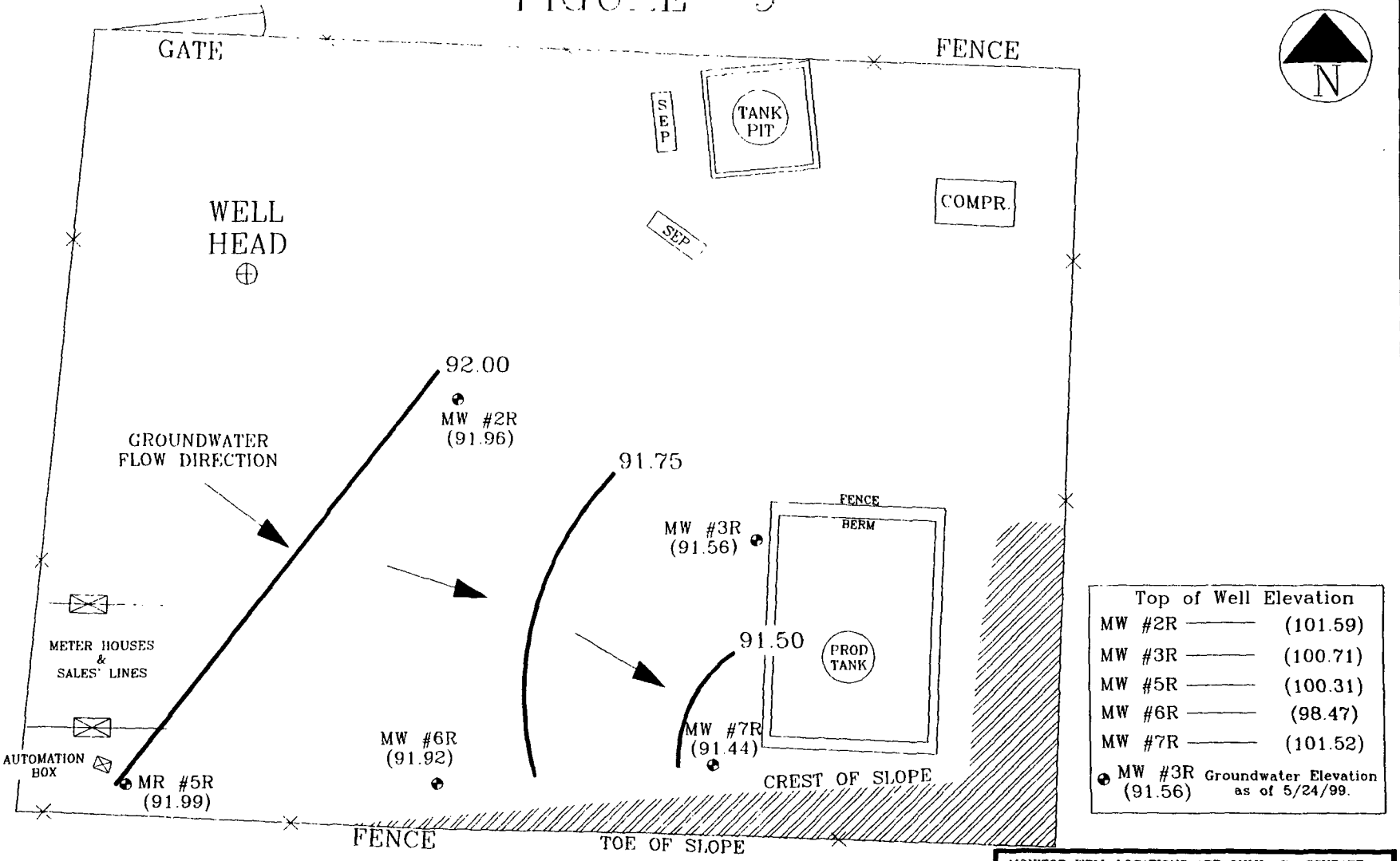
PROJECT: 1/41y SAMP!

DRAWN BY: NJV

FILENAME: 02-15-GW.SKD

GROUNDWATER GRADIENT MAP 02/99

FIGURE 9



Top of Well Elevation	
MW #2R	(101.59)
MW #3R	(100.71)
MW #5R	(100.31)
MW #6R	(98.47)
MW #7R	(101.52)

MW #3R (91.56) Groundwater Elevation as of 5/24/99.

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

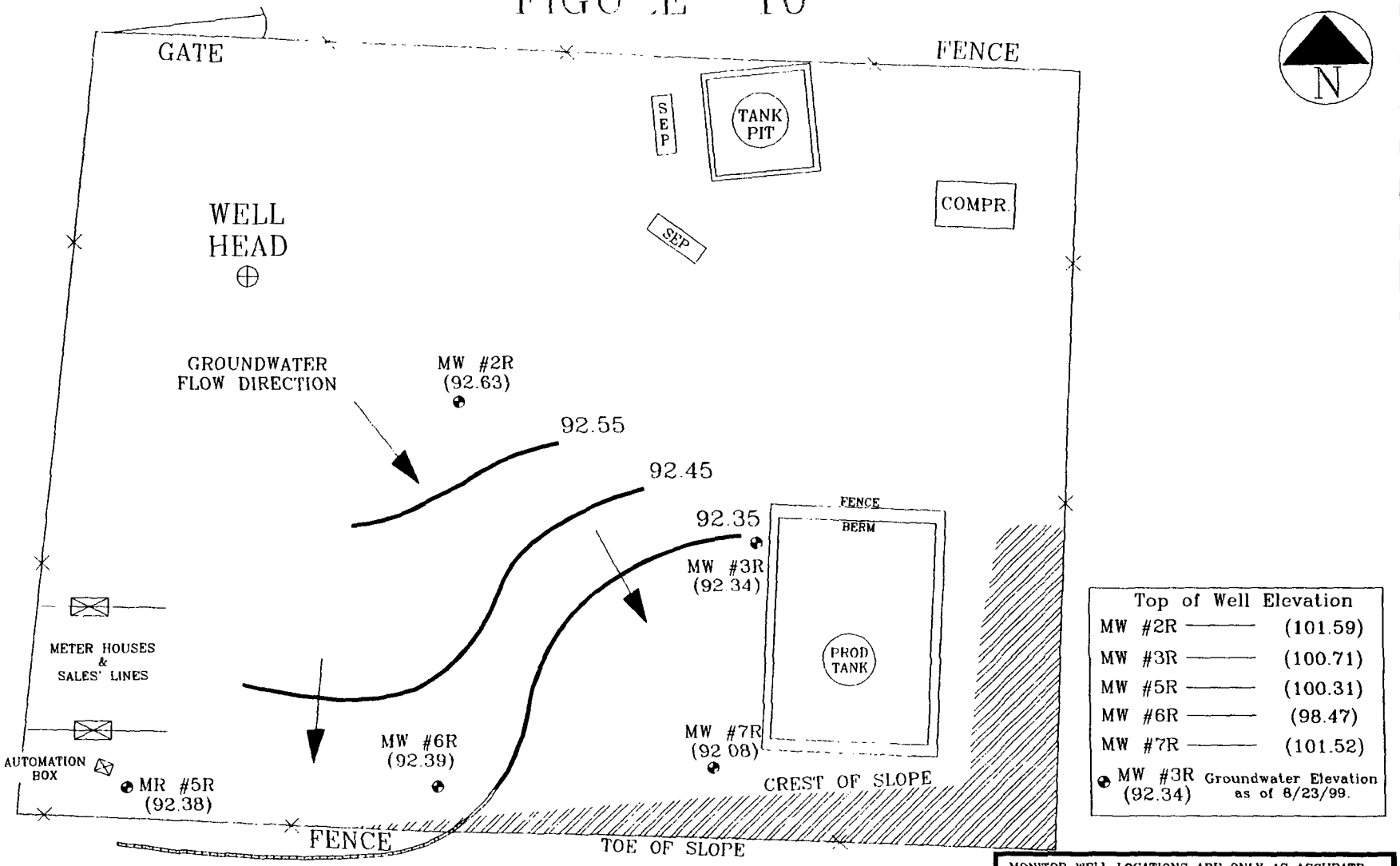
AMOCO PRODUCTION COMPANY
MARTINEZ GC G #1
NE/4 NE/4 SEC. 24, T29N, R10W
SAN JUAN COUNTY, NEW MEXICO

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

PROJECT: 1/41y SAMP.
DRAWN BY: NJV
FILENAME: 05-24-GW.SKD

GROUNDWATER GRADIENT MAP 05/99

FIGURE 10



Top of Well Elevation	
MW #2R	(101.59)
MW #3R	(100.71)
MW #5R	(100.31)
MW #6R	(98.47)
MW #7R	(101.52)

MW #3R (92.34) Groundwater Elevation as of 8/23/99.

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

AMOCO PRODUCTION COMPANY

MARTINEZ GC G #1

NE/4 NE/4 SEC. 24, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

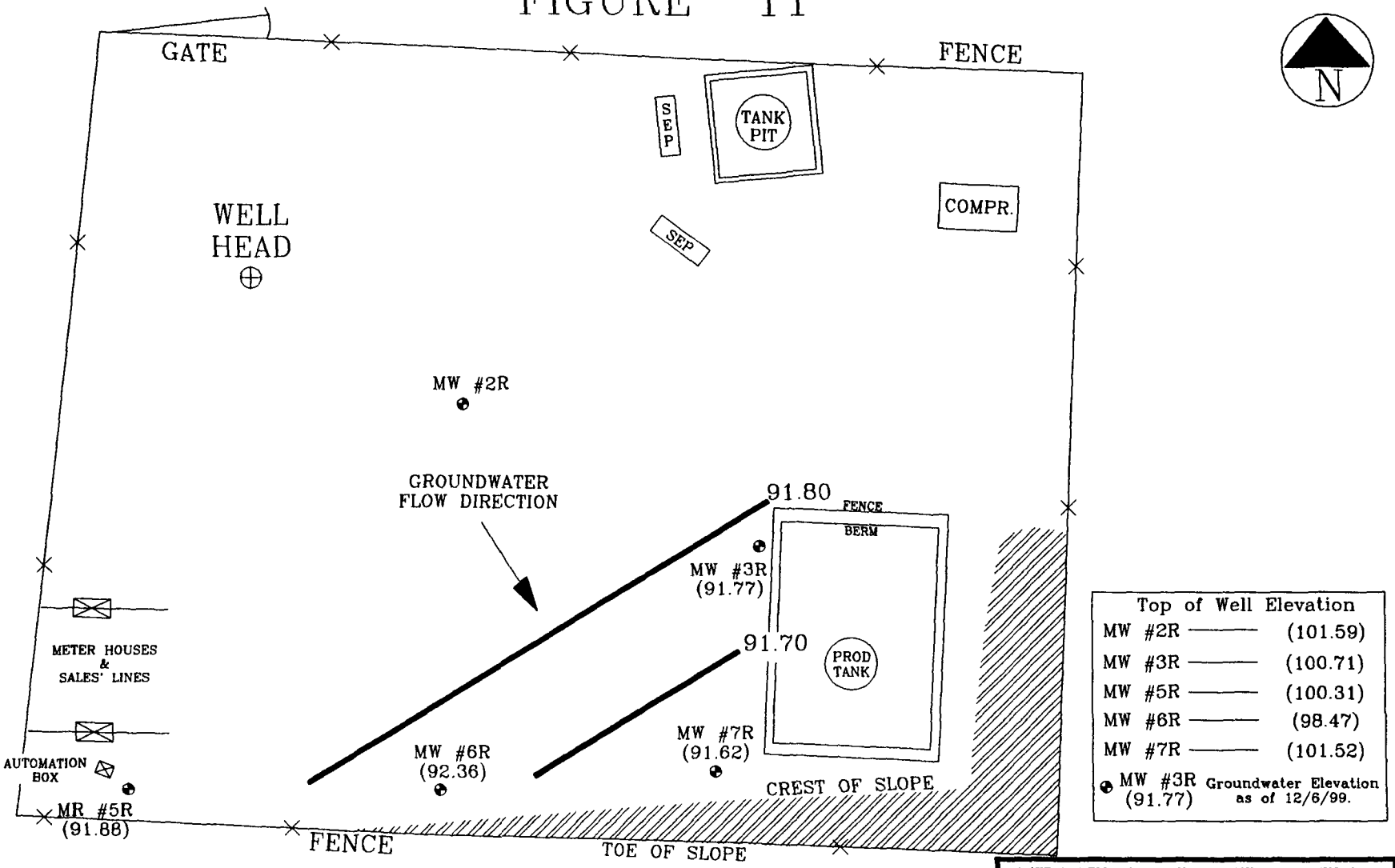
PROJECT: 1/4ly SAMP.

DRAWN BY: NJV

FILENAME: 08-23-GW.SKD

GROUNDWATER GRADIENT MAP 08/99

FIGURE 11



Top of Well Elevation	
MW #2R	(101.59)
MW #3R	(100.71)
MW #5R	(100.31)
MW #6R	(98.47)
MW #7R	(101.52)

MW #3R (91.77) Groundwater Elevation as of 12/6/99.

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

AMOCO PRODUCTION COMPANY

MARTINEZ GC G #1

NE/4 NE/4 SEC. 24, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

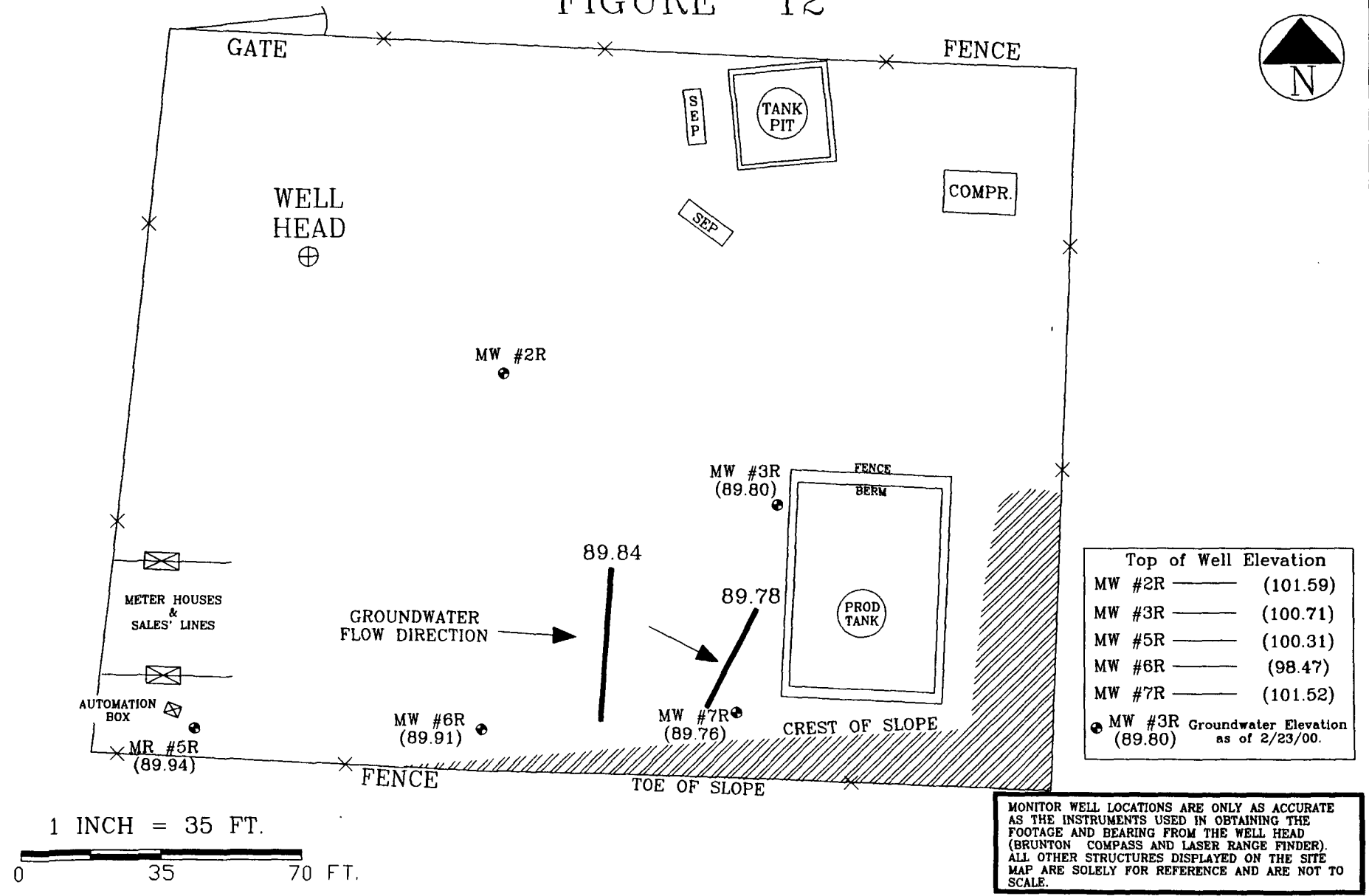
PROJECT: 1/4ly SAMP.

DRAWN BY: NJV

FILENAME: 12-06-GW.SKD

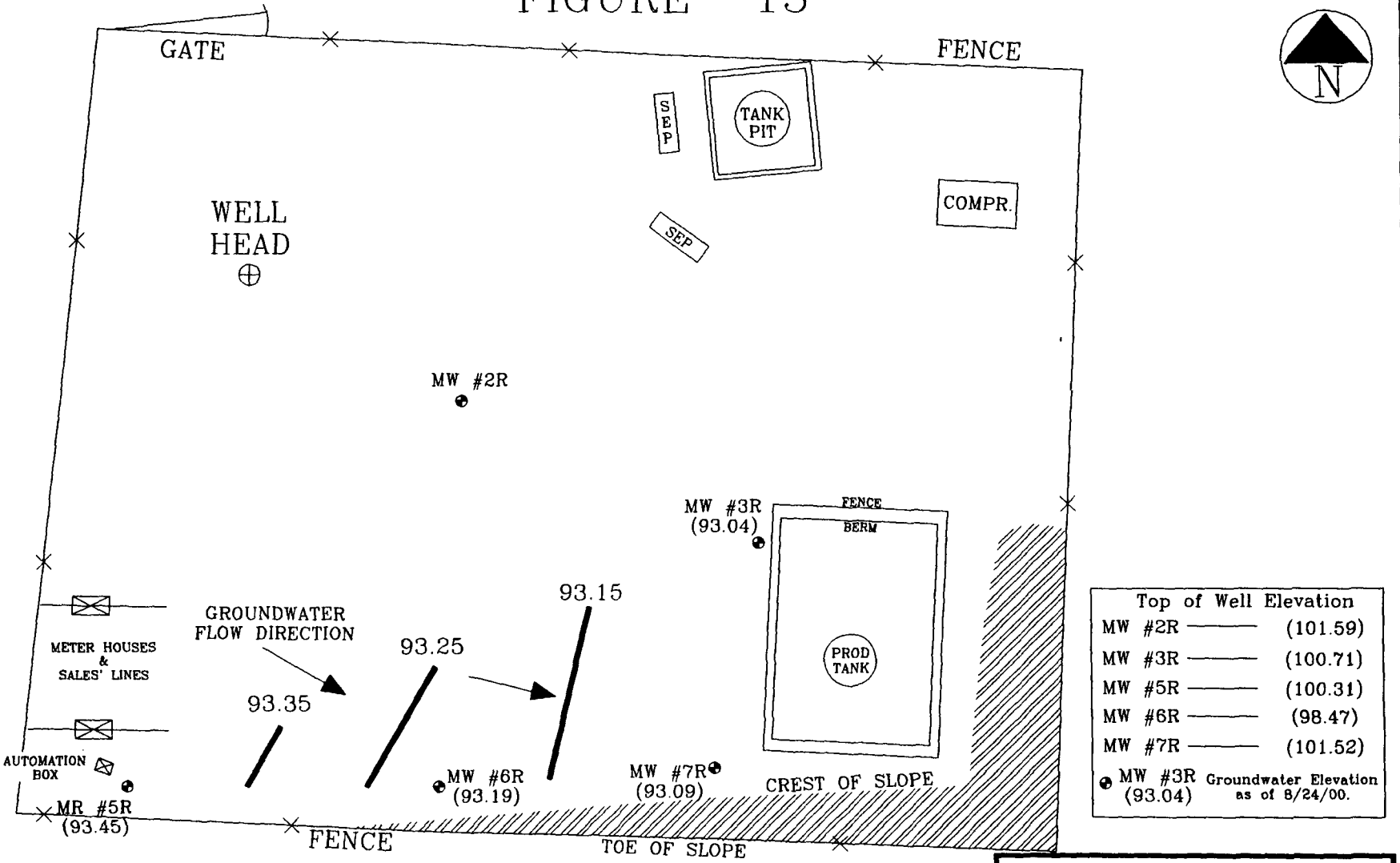
GROUNDWATER GRADIENT MAP 12/99

FIGURE 12



AMOCO PRODUCTION COMPANY MARTINEZ GC G #1 NE/4 NE/4 SEC. 24, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: 1/4ly SAMP. DRAWN BY: NJV FILENAME: 02-23-GW.SKD	GROUNDWATER GRADIENT MAP 02/00

FIGURE 13



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

AMOCO PRODUCTION COMPANY MARTINEZ GC G #1 NE/4 NE/4 SEC. 24, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: 1/4ly SAMP. DRAWN BY: NJV FILENAME: 08-24-GW.SKD	GROUNDWATER GRADIENT MAP 08/00

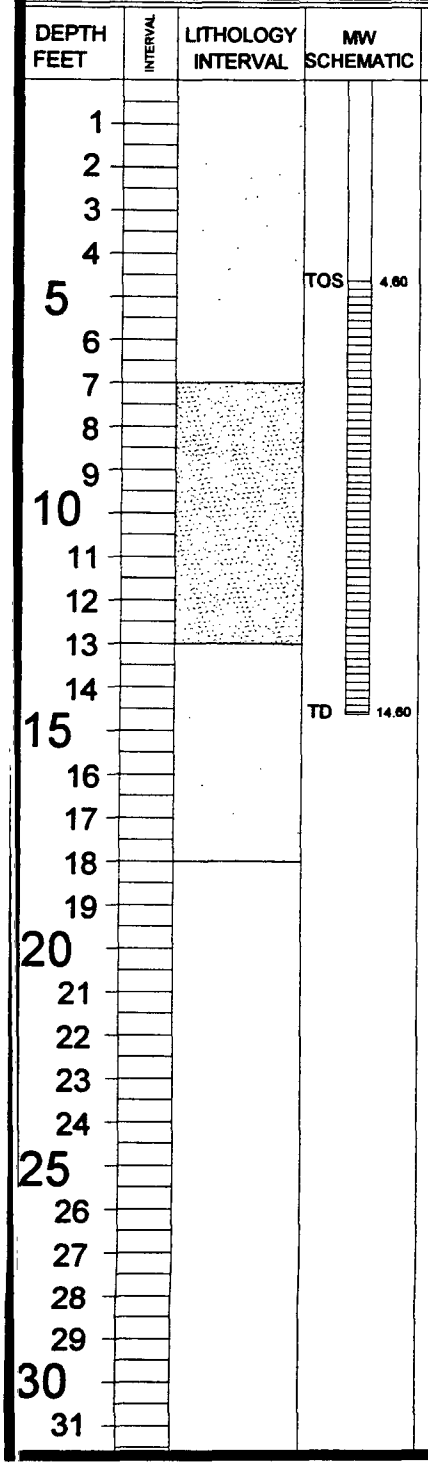
BLAGG ENGINEERING, INC.

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

BORE / TEST HOLE REPORT

CLIENT:	BP AMOCO
LOCATION NAME:	MARTINEZ GC G # 1
CONTRACTOR:	BLAGG ENGINEERING, INC. / PAUL & SONS, INC.
EQUIPMENT USED:	MOBILE DRILL RIG
BORING LOCATION:	125.5 FEET, S20.5E FROM WELL HEAD.

BORING #.....	BH - 1
MW #.....	6R
PAGE #.....	1
DATE STARTED	1/28/98
DATE FINISHED	1/28/98
OPERATOR.....	GG
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 0.40 FT. BELOW GROUND SURFACE.

PALE TO MODERATE YELLOWISH ORANGE TO BROWN SAND (FILL DIRT), NON COHESIVE, DRY TO SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 - 7.0 FT. INTERVAL).

▼ GW DEPTH ON 2/24/98 = 8.77 FT. (APPROX.) FROM GROUND SURFACE.

DARK GRAY SAND, NON COHESIVE, SATURATED, FIRM TO LOOSE, MODERATE TO STRONG HYDROCARBON ODOR DETECTED PHYSICALLY (7.0 - 13.0 FT. INTERVAL).

LIGHT OLIVE TO LIGHT GRAY SAND, NON COHESIVE, SATURATED, FIRM TO LOOSE, NO APPARENT TO SLIGHT HYDROCARBON ODOR DETECTED PHYSICALLY (13.0 - 18.0 FT. INTERVAL).

NOTE:
- SAND.
- DISCOLORED SAND.
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

DRAWING: BH-01.SKD	DATE: 1/19/01	DWN BY: NJV

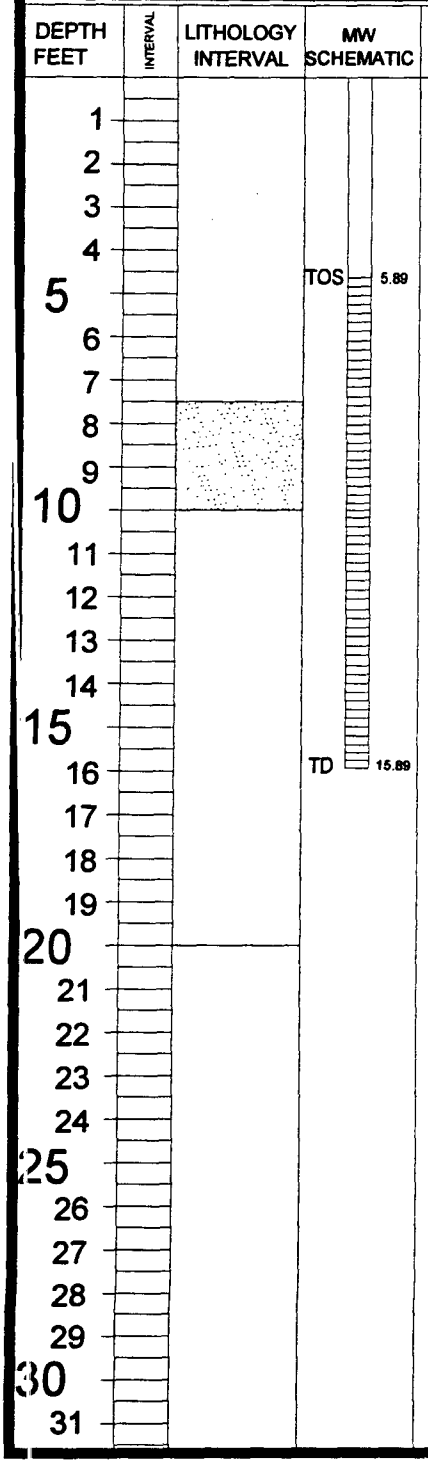
BLAGG ENGINEERING, INC.

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 2
MW #.....	7R
PAGE #.....	2
DATE STARTED	1/28/98
DATE FINISHED	1/28/98
OPERATOR.....	GG
PREPARED BY	NJV

CLIENT: BP AMOCO
LOCATION NAME: MARTINEZ GC G # 1
CONTRACTOR: BLAGG ENGINEERING, INC. / PAUL & SONS, INC.
EQUIPMENT USED: MOBILE DRILL RIG
BORING LOCATION: 155.5 FEET, S42E FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 3.00 FT. BELOW GROUND SURFACE.

PALE TO MODERATE YELLOWISH ORANGE TO BROWN SAND, NON COHESIVE, DRY TO SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 - 7.5 FT. INTERVAL).

DARK GRAY SAND, NON COHESIVE, SATURATED, FIRM TO LOOSE, MODERATE TO STRONG HYDROCARBON ODOR DETECTED PHYSICALLY (7.5 - 10.0 FT. INTERVAL).

GW DEPTH ON 2/24/98 = 9.29 FT. (APPROX.) FROM GROUND SURFACE.

LIGHT OLIVE TO LIGHT GRAY SAND, NON COHESIVE, SATURATED, FIRM TO LOOSE, NO APPARENT TO SLIGHT HYDROCARBON ODOR DETECTED PHYSICALLY (10.0 - 20.0 FT. INTERVAL).

NOTE:
- SAND.
- DISCOLORED SAND.

TOS - TOP OF SCREEN FROM GROUND SURFACE.
TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
GW - GROUND WATER.

DRAWING: BH-02.SKD	DATE: 1/19/01	DWN BY: NJV

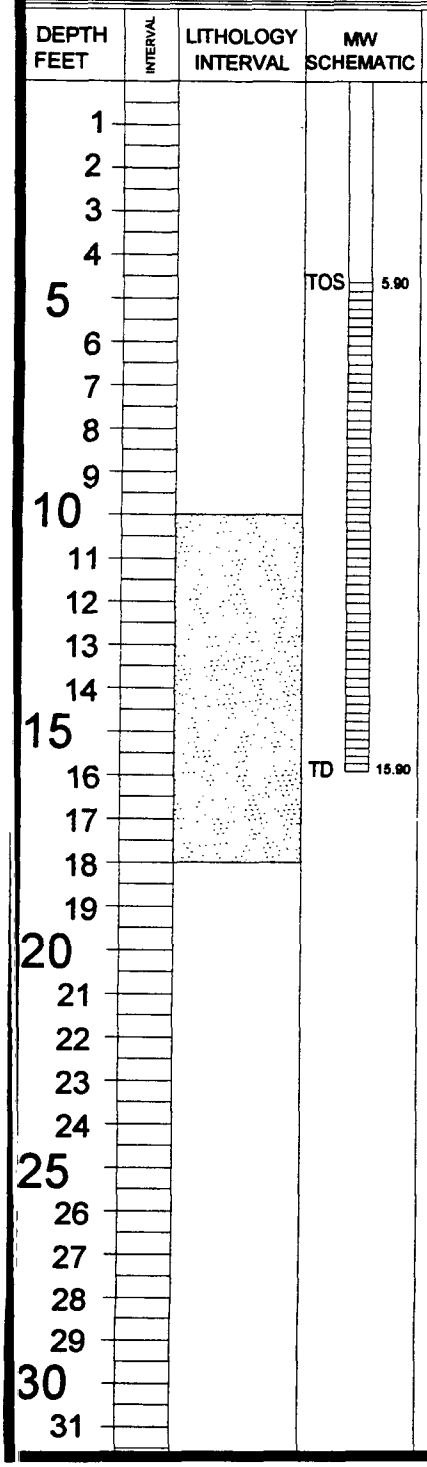
BLAGG ENGINEERING, INC.

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 3
MW #.....	2R
PAGE #.....	3
DATE STARTED	2/10/98
DATE FINISHED	2/10/98
OPERATOR.....	GG
PREPARED BY	NJV

CLIENT:	BP AMOCO
LOCATION NAME:	MARTINEZ GC G # 1
CONTRACTOR:	BLAGG ENGINEERING, INC. / PAUL & SONS, INC.
EQUIPMENT USED:	MOBILE DRILL RIG
BORING LOCATION:	57 FEET, S55.5E FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 3.10 FT. BELOW GROUND SURFACE.

PALE TO MODERATE YELLOWISH ORANGE TO BROWN SAND, NON COHESIVE, DRY TO SATURATED, FIRM TO LOOSE, NO APPARENT DISCOLORATION OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 - 10.0 FT. INTERVAL).

▼ GW DEPTH ON 2/24/98 = 8.94 FT. (APPROX.) FROM GROUND SURFACE.

LIGHT TO MEDIUM GRAY SAND, NON COHESIVE, SATURATED, FIRM TO LOOSE, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY (10.0 - 18.0 FT. INTERVAL).

NOTE:
- ☐ - SAND.
- ▩ - DISCOLORED SAND.
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

DRAWING: BH-03.SKD	DATE: 1/19/01	DWN BY: NJV

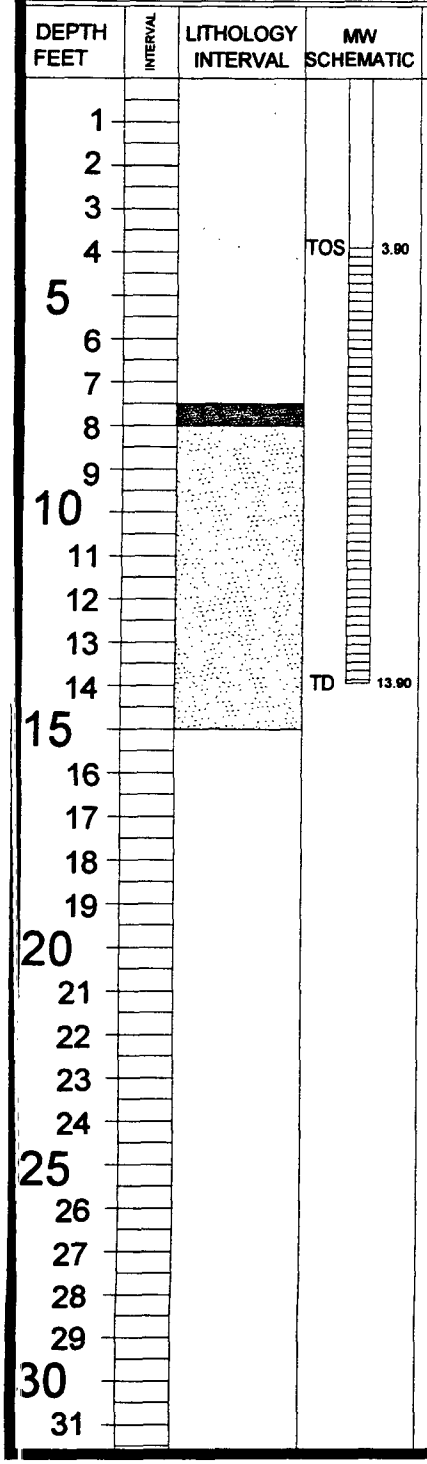
BLAGG ENGINEERING, INC.

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 4
MW #.....	3R
PAGE #.....	4
DATE STARTED	2/10/98
DATE FINISHED	2/10/98
OPERATOR.....	GG
PREPARED BY	NJV

CLIENT:	BP AMOCO
LOCATION NAME:	MARTINEZ GC G # 1
CONTRACTOR:	BLAGG ENGINEERING, INC. / PAUL & SONS, INC.
EQUIPMENT USED:	MOBILE DRILL RIG
BORING LOCATION:	129 FEET, S58E FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.10 FT. BELOW GROUND SURFACE.

PALE TO MODERATE YELLOWISH ORANGE TO BROWN SAND, NON COHESIVE, DRY TO SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 - 7.5 FT. INTERVAL).

BLACK SAND, NON COHESIVE, MOIST, FIRM TO LOOSE, MODERATE TO STRONG HYDROCARBON ODOR DETECTED PHYSICALLY (7.5 - 8.0 FT. INTERVAL).

▼ GW DEPTH ON 2/24/98 = 9.30 FT. (APPROX.) FROM GROUND SURFACE.

LIGHT TO MEDIUM GRAY SAND, NON COHESIVE, MOIST TO SATURATED, FIRM TO LOOSE, MODERATE TO STRONG HYDROCARBON ODOR DETECTED PHYSICALLY (8.0 - 15.0 FT. INTERVAL).

NOTE:
- SAND.
- DISCOLORED SAND.
TOS - TOP OF SCREEN FROM GROUND SURFACE.
TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
GW - GROUND WATER.

DRAWING: BH-04.SKD	DATE: 1/19/01	DWN BY: NJV

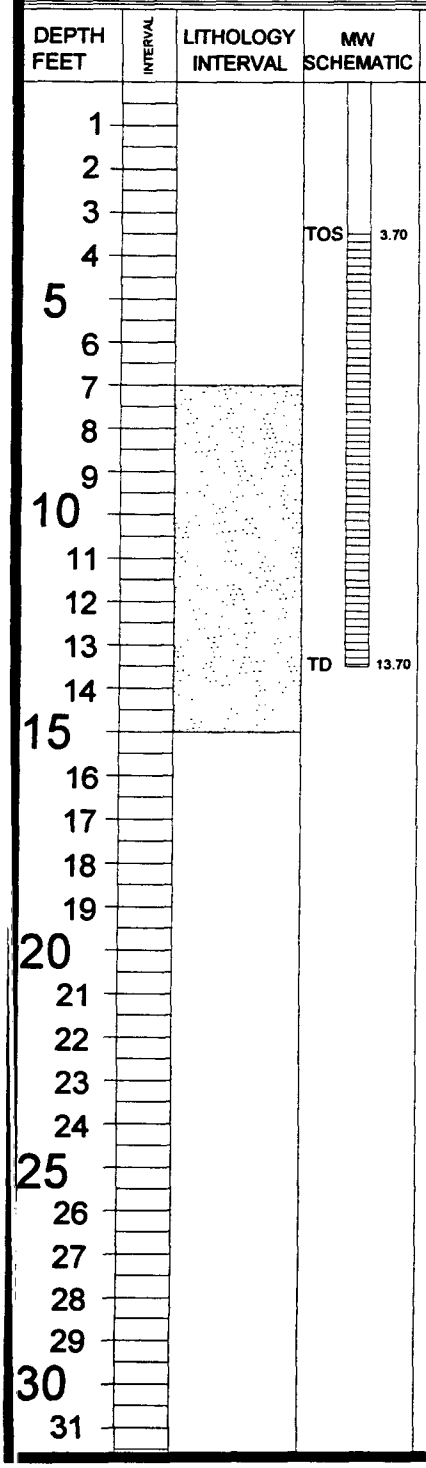
BLAGG ENGINEERING, INC.

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 5
MW #.....	5R
PAGE #.....	5
DATE STARTED	2/10/99
DATE FINISHED	2/10/99
OPERATOR.....	JCB
PREPARED BY	NJV

CLIENT:	BP AMOCO
LOCATION NAME:	MARTINEZ GC G # 1
CONTRACTOR:	BLAGG ENGINEERING, INC.
EQUIPMENT USED:	MOBILE DRILL RIG
BORING LOCATION:	121.5 FEET, S13.5W FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.30 FT. BELOW GROUND SURFACE.

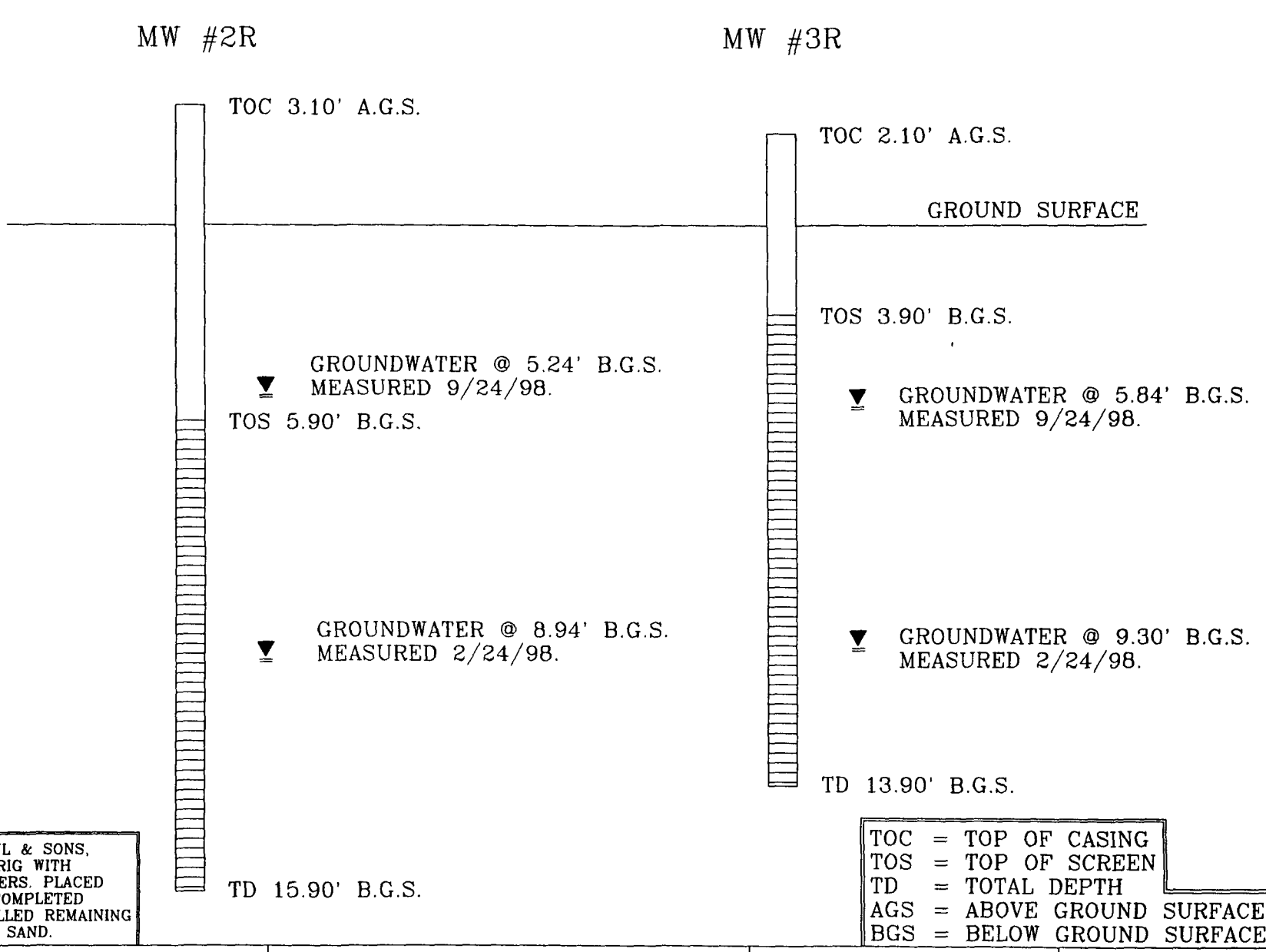
DARK YELLOWISH ORANGE TO MODERATE YELLOWISH BROWN SAND, NON COHESIVE, DRY TO SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 - 7.0 FT. INTERVAL).

▼ GW DEPTH ON 2/23/00 = 8.07 FT. (APPROX.) FROM GROUND SURFACE.

LIGHT TO MEDIUM GRAY SAND, NON COHESIVE, SATURATED, FIRM TO LOOSE, MODERATE HYDROCARBON ODOR DETECTED PHYSICALLY (7.0 - 15.0 FT. INTERVAL).

NOTE:
- SAND.
- DISCOLORED SAND.
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

DRAWING: BH-05.SKD	DATE: 1/19/01	DWN BY: NJV



INSTALLED USING PAUL & SONS, INC.'S MOBILE DRILL RIG WITH 3.75 INCH SOLID AUGERS. PLACED 2 INCH PVC WITHIN COMPLETED BORING AND THEN FILLED REMAINING ANNULAR WITH SILICA SAND.

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

AMOCO PRODUCTION COMPANY

MARTINEZ GC G #1

NE/4 NE/4 SEC. 24, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO

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

PROJECT: MW INSTALL.

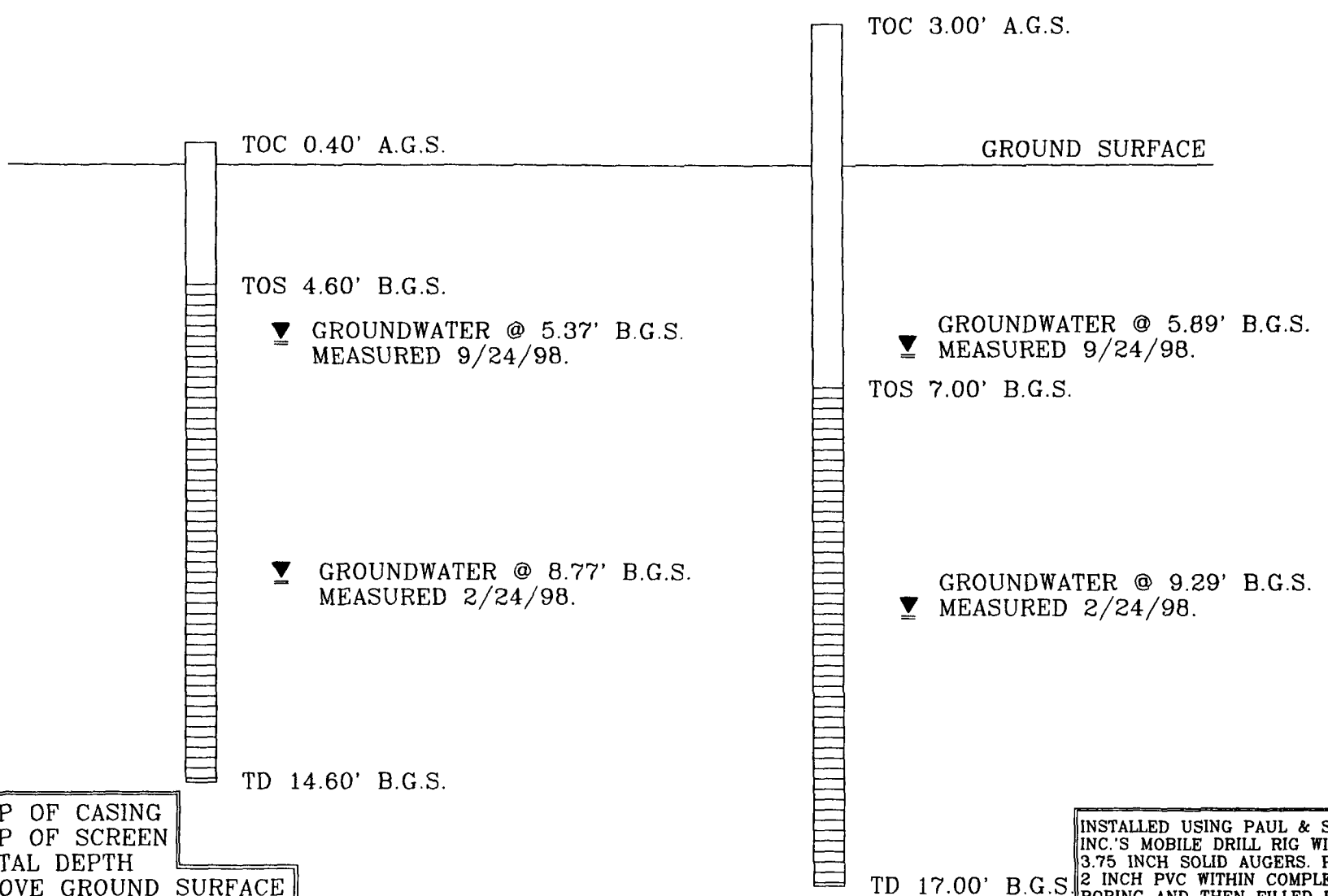
DRAWN BY: NJV

FILENAME: MWDET2&3.SKD

INSTALLED: 2/10/98

MW DETAILS

02/98



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

INSTALLED USING PAUL & SONS, INC.'S MOBILE DRILL RIG WITH 3.75 INCH SOLID AUGERS. PLACED 2 INCH PVC WITHIN COMPLETED BORING AND THEN FILLED REMAINING ANNULAR WITH SILICA SAND.

AMOCO PRODUCTION COMPANY

MARTINEZ GC G #1

NE/4 NE/4 SEC. 24, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO

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

PROJECT: MW INSTALL.

DRAWN BY: NJV

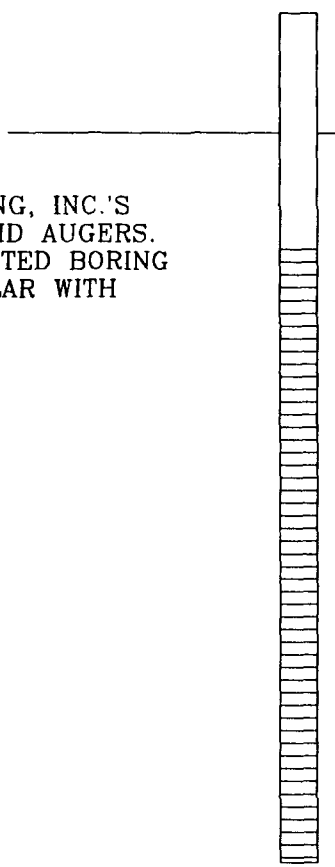
FILENAME: MWDET6&7.SKD

INSTALLED: 1/28/98

MW DETAILS

01/98

MW #5R



INSTALLED USING BLAGG ENGINEERING, INC.'S GEOPROBE 200 WITH 3.75 INCH SOLID AUGERS. PLACED 2 INCH PVC WITHIN COMPLETED BORING AND THEN FILLED REMAINING ANNULAR WITH SILICA SAND.

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

AMOCO PRODUCTION COMPANY

MARTINEZ GC G #1

NE/4 NE/4 SEC. 24, T29N, R10W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW INSTALL.

DRAWN BY: NJV

FILENAME: MWDET-5R.SKD

INSTALLED: 2/10/99

MW DETAIL

02/99

C4939

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 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

PIT REMEDIATION AND CLOSURE REPORT

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

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name: MARTINEZ GC G #1

Location: Unit or Qtr/Qtr Sec A Sec 24 T 29N R 10W County SAN JUAN

Pit Type: Separator ___ Dehydrator ___ Other BLOW

Land Type: BLM ___, State ___, Fee ✓, Other ___

Pit Location: (Attach diagram)
Pit dimensions: length 90', width 110', depth 3-5'
Reference: wellhead X, other ___
Footage from reference: 240
Direction from reference: 20 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)	0
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes (20 points) No (0 points)	0
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet (20 points) 200 feet to 1000 feet (10 points) Greater than 1000 feet (0 points)	20
	RANKING SCORE (TOTAL POINTS):	40

C4939 BLOW PIT

Date Remediation Started: _____ **Date Completed:** 9/1/93

Remediation Method: (Check all appropriate sections) Excavation ✓ Approx. cubic yards 1,200

Landfarmed ✓ Insitu Bioremediation ___

Other _____

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

General Description Of Remedial Action: _____

Excavation. GROUNDWATER IMPACTED.

Ground Water Encountered: No ___ Yes ✓ Depth 4'

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

Sample location see Attached Documents

Sample depth 4' (GROUNDWATER)

Sample date 8/31/93 Sample time 1450

Sample Results

Benzene(ppm) _____

Total BTEX(ppm) _____

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 9/1/93

SIGNATURE BD Shaw

PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

9-7-93 Reported Lab Results to Paul Velasquez - made no recommendations - RMY

ENVIROTECH Inc.

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

Coc 2959
C4939

FIELD REPORT: CLOSURE VERIFICATION

JOB No: 92140
PAGE No: 1 of 1

LOCATION: LEASE: MARTINEZ GAS COM 'G' WELL: No 1 QD: NE/4 NE/4 (A)
SEC: 24 TWP: 29N RNG: 10W BM: NMPM CNTY: SJ ST: NM PIT: BLOW
CONTRACTOR: PAUL VELASQUEZ
EQUIPMENT USED: TRACK-HOE

DATE STARTED: 8-31-93
DATE FINISHED: 8-31-93
ENVIRONMENTAL SPECIALIST: RMY

SOIL REMEDIATION: QUANTITY: 90' X 110' X 3-5' deep 1200 C.Y. est
DISPOSAL FACILITY: ~~ON-SITE~~ est ON-SITE
LAND USE: RANGE - PRIVATE LEASE
SURFACE CONDITIONS: PIT FULL OF BROWN GROUNDWATER

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 80 YARDS N20E FROM WELLHEAD
DEPTH TO GROUNDWATER: 4' est
NEAREST WATER SOURCE: UNK >1000'
NEAREST SURFACE WATER: 10 sump

PROPERTY OWNER, TERRY ARCHUNDE, PRESENT ON SITE. WAS CONCERNED ABOUT CONTAMINATION FLOATING ON WATER RUNNING FROM BERMED EAST SIDE OF LOCATION, INTO OPEN WETLANDS/PASTURE AREA.

- LOCATION SHARED W/MERRELIX OIL CORP? RUNOFF FROM MERRELIX DRILLING RESERVE PUDDING INTO AMOCO PIT.
- WATER LEVEL IN PIT IS APPROX 2' ABOVE LEVEL OBSERVED IN ADJACENT FIELD.
- WATER SAMPLE "PIT WATER" TAKEN FOR BTEX ANALYSIS.

FIELD 418.1 CALCULATIONS

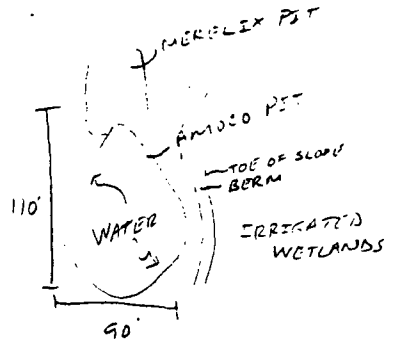
SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SCALE
0 FEET

N

SURFACE FLOW AND SUSPENDED SOLIDS

PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)

PIT PROFILE

ALL SOILS EXPOSED ARE SM/ML PLUS GW: SILTY SAND PLUS WELL GRADED GRAVEL AND COBBLES, DARK YELLOWISH BROWN TO MEDIUM LIGHT GRAY, WET, LOOSE, NON-COHESIVE.

APPARENT VISIBLE CONTAMINATION IN LOWER 12" OF EXPOSED EAST WALL.

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

Client:	Amoco	Project #:	92140
Sample ID:	Pit Water	Date Reported:	09-01-93
Laboratory Number:	5988	Date Sampled:	08-31-93
Sample Matrix:	Water	Date Received:	08-31-93
Preservative:	HgCl and Cool	Date Analyzed:	09-01-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	9.3	0.2
Toluene	7.8	0.5
Ethylbenzene	3.6	0.2
p,m-Xylene	52	0.6
o-Xylene	31.7	0.3

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	95 %
Bromofluorobenzene	93 %

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: Martinez GC "G" No. 1 Blow Pit C4939

Analyst

Review

2959

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	C4939 ANALYSIS/PARAMETERS
AMOCO 92140	MARTINEZ GC "G" No. 1 BLOW AR	
Sampler: (Signature)	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX						Remarks
PIT WATER	8-31-93	1450	5988	WATER	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert M Young	8-31-93	1545	Tony Tristan	8-31-93	1545
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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

C4954

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 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

PIT REMEDIATION AND CLOSURE REPORT

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

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name MARTINEZ GC G #1

Location: Unit or Qtr/Qtr Sec A Sec 24 T 29N R 10W County SAN JUAN

Pit Type: Separator ___ Dehydrator ✓ Other ___

Land Type: BLM ___, State ___, Fee ✓, Other ___

Pit Location: (Attach diagram)
Pit dimensions: length 35', width 20', depth 9'
Reference: wellhead X, other ___
Footage from reference: 126'
Direction from reference: 18 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) Greater than 1000 feet (0 points)	20
	RANKING SCORE (TOTAL POINTS):	40

C4954 DEHY. PIT

Date Remediation Started: _____ **Date Completed:** 1/6/94

Remediation Method: (Check all appropriate sections) Excavation ✓ Approx. cubic yards 200

Landfarmed ✓ Insitu Bioremediation ___

Other _____

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility) Onsite ___ Offsite ✓ Amoco's Crouch Mesa-Facility.

General Description Of Remedial Action: Excavation. Groundwater impacted. Further remedial action required.

Ground Water Encountered: No ___ Yes ✓ Depth 9'

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

Sample location see Attached Documents

Sample depth 6' (Northeast sidewall)

Sample date 1/5/94 Sample time 0950

Sample Results

Benzene(ppm) _____

Total BTEX(ppm) _____

Field headspace(ppm) _____

TPH 12,900 ppm

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 1/6/94

SIGNATURE B J Shaw

PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

P Eo

ENVIROTECH Inc.

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

C4954
COCR 3297

FIELD REPORT: CLOSURE VERIFICATION

JOB No: 92140
PAGE No: 1 of 1

LOCATION: LEASE: MARTINEZ GC WELL: 61 QD: NE/4 NE/4 (A)
SEC: 24 TWP: 29N RNG: 10W BM: NM CNTY: SAN JUAN ST: NM PIT: DEHY
CONTRACTOR: P. VELASQUEZ
EQUIPMENT USED: TRACKHOE

DATE STARTED: 1/5/94
DATE FINISHED: 1/5/94

ENVIRONMENTAL SPECIALIST: NV

SOIL REMEDIATION: QUANTITY: 35 x 20 x 9' 200 C.Y.
DISPOSAL FACILITY: COMPOST: ON-SITE AND @ ACF (AMOCO COMPOST FACILITY)
LAND USE: RANGE
SURFACE CONDITIONS: UNKNOWN

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 42 YARDS S18E FROM WELLHEAD.

DEPTH TO GROUNDWATER: 9'
NEAREST WATER SOURCE: ~~<300'~~ >1000'
NEAREST SURFACE WATER: <100'

DEHY PIT BELONGS TO EL PASO. AMOCO EXCAVATED BECAUSE OF EQUIPMENT PLACEMENT W/IN THE PIT AREA. & LAND OWNER DEMANDED REMOVAL OF CONTAMINATED MATERIAL. ALL SIDEWALLS VISIBLY CONTAMINATED LAB SAMPLE SUBMITTED FOR BASELINE DATA. ADDITIONAL WORK IS PLANNED BY P. VELASQUEZ (418.1)

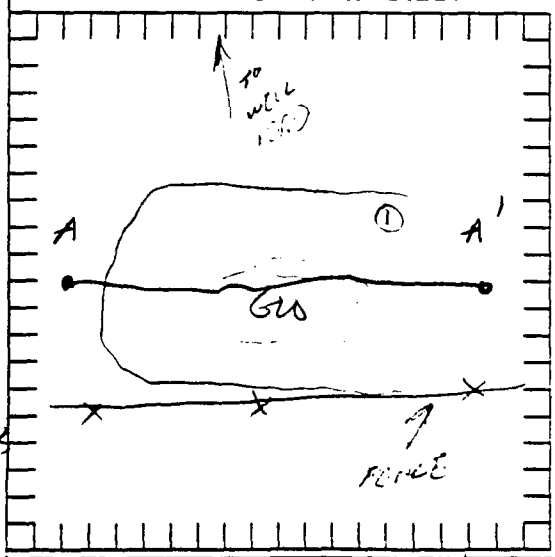
FIELD 418.1 CALCULATIONS

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

SCALE
0 FEET

N

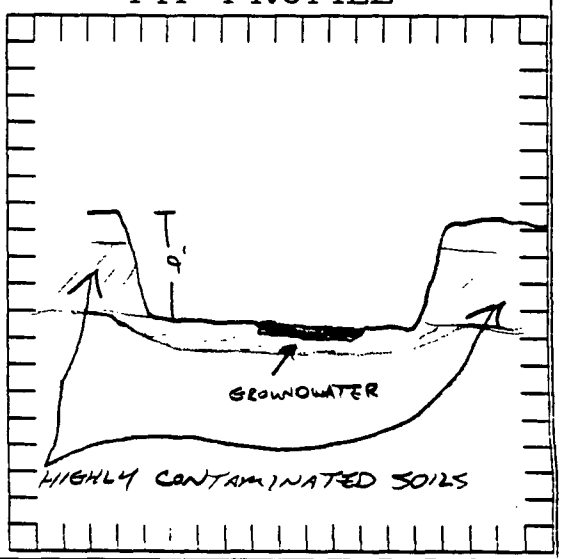
PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)

PIT PROFILE



TRAVEL NOTES: CALLOUT: 1/5/94 ONSITE: 1/5/94

N

ENVIROTECH LABS

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

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	1 @ 6'	Date Sampled:	01-05-94
Laboratory Number:	6705	Date Received:	01-05-94
Sample Matrix:	Soil	Date Analyzed:	01-06-94
Preservative:	Cool	Date Reported:	01-06-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	12,900	100

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

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

Comments: Martinez GC G1 Dehydrator Pit

Tony Tinsley
Analyst

Review

3297

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS							
AMOCO 92140	DEHY PIT MARTINEZ GC G1								4954
Sampler: (Signature) Nelson Velez	Chain of Custody Tape No.	No. of Containers	TPH (418.1)						Remarks
Sample No./ Identification	Sample Date / Sample Time / Lab Number / Sample Matrix								
(1) @ 6'	1/5/94 0950 6705 5012	1	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	1/5/94	1030	Dennis L. Hensley	1-5-94	1030
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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

C4954

ENVIROTECH Inc.

COC 3558

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

FIELD REPORT: SITE ASSESSMENT

JOB No: 92140
PAGE No: 1 of 1

PROJECT: PIT ASSESSMENT
CLIENT: Amoco Prod. Co.
CONTRACTOR: ENVIROTECH, INC.
EQUIPMENT USED: TRACKHOE - P. VELASQUEZ

DATE STARTED: 5/2/94
DATE FINISHED: 5/2/94
ENVIRO. SPCLT: NV
OPERATOR: —
ASSISTANT: —

LOCATION: LEASE: MARTINEZ WELL: GC G1 QD: NE/4 NE/4
SEC: 24 TWP: 29N RNG: 9W PM: NM CNTY: SAN JUAN ST: NM PIT: DEHY
LAND USE: RANGE
SURFACE CONDITIONS: ACCESS ROAD

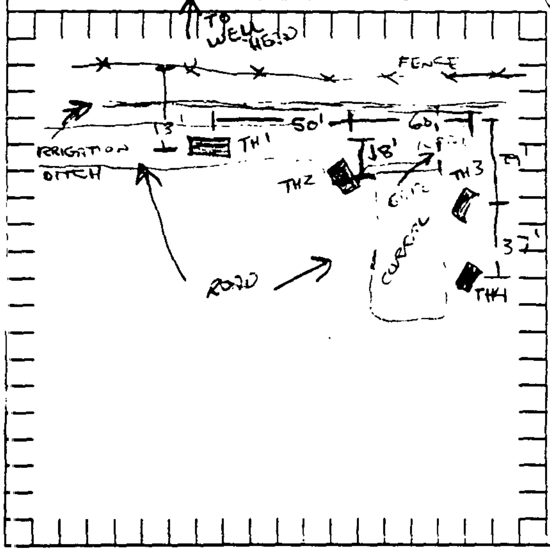
FIELD NOTES & REMARKS: TEST HOLE LOCATIONS:

	TH #1	TH #2	TH #3	TH #4
	35E	S 25E	S 40E	S 27E
		21	35	29.5
FROM WELL HEAD	143'	172	212	242.5

COLLECTED LAB SAMPLES
T1 @ GW (4') BTEX
T3 @ GW (3') BTEX
T4 @ 2' TPH (415.1)

SCALE
0 FEET

SITE DIAGRAM



TEST HOLE LOGS:

GROUND SURFACE →

TH#: 1

Depth	SOIL TYPE	SMPL TYPE	OVM/TPH
1	DK. YELL. BROWN		
3	SP	■	0.0
4	BLACK	■	643
5	TD	-	4½'
	GW	-	4'

TH#: 2

Depth	SOIL TYPE	SMPL TYPE	OVM/TPH
1	DK. YELL. ORANGE		
3	MED GRAY		
3	SP	■	1014
4	TD	-	4'
	GW	-	4'

TH#: 3

Depth	SOIL TYPE	SMPL TYPE	OVM/TPH
1	DK. YELL. BROWN		
2	MED. TO DK. GRAY		
2	SP	■	813
3		■	867
4	TD	-	3½'
5	GW	-	3'

TH#: 4

Depth	SOIL TYPE	SMPL TYPE	OVM/TPH
	DK. YELL. BROWN		
1	DK. GRAY		
2	SP	■	10.8
3	TD	-	2'
4	GW	-	2'?

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

ENVIROTECH LABS

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

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	T 1 @ GW (4')	Date Reported:	05-03-94
Laboratory Number:	7336	Date Sampled:	05-02-94
Sample Matrix:	Water	Date Received:	05-03-94
Preservative:	HgCl and Cool	Date Analyzed:	05-03-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	13.7	1.0
Toluene	36.6	3.0
Ethylbenzene	37.2	1.5
p,m-Xylene	358	3.0
o-Xylene	206	2.0

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	101 %
Bromofluorobenzene	101 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez GC G1 Dehy. Pit C4954

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:	T 3 @ GW (3')	Date Reported:	05-03-94
Laboratory Number:	7337	Date Sampled:	05-02-94
Sample Matrix:	Water	Date Received:	05-03-94
Preservative:	HgCl and Cool	Date Analyzed:	05-03-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	6,200	1.0
Toluene	44.6	3.0
Ethylbenzene	990	1.5
p,m-Xylene	4,520	3.0
o-Xylene	2,180	2.0

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	102 %
Bromofluorobenzene	98 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez GC G1 Dehy. Pit C4954

Analyst

Review

ENVIROTECH LABS

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

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	T4 @ 2'	Date Sampled:	05-02-94
Laboratory Number:	7335	Date Received:	05-03-94
Sample Matrix:	Soil	Date Analyzed:	05-03-94
Preservative:	Cool	Date Reported:	05-03-94
Condition:	Cool & Intact	Analysis Needed:	TPH

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

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

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

Comments: Martinez GC G1 Dehy Pit C4954

Tony Tristano
Analyst

Review

3558

CHAIN OF CUSTODY RECORD

C4954

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
AMOCO 92140	DEHY PIT MARTINEZ GC G1	
Sampler: (Signature) Nelson Velez	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (418.1)	BTEX (8020)					Remarks
T4 @ 2'	5/2/94	1340	7335	SOIL	1	✓						
T1 @ GW (4')	5/2/94	1315	7336	WATER	2		✓					
T3 @ GW (3')	5/2/94	1325	7337	WATER	2		✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	5/3/94	0746	Alexis L. Clemens	5-3-94	0746
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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

District I
P.O. Box 1980, Hobbs, NM
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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 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

PIT REMEDIATION AND CLOSURE REPORT

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

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name MARTINEZ GC G #1

Location: Unit or Qtr/Qtr Sec A Sec 24 T29N R 10W County SAN JUAN

Pit Type: Separator ___ Dehydrator ___ Other ABANDONED

Land Type: BLM ___, State ___, Fee ✓, Other ___

Pit Location: (Attach diagram)
Pit dimensions: length 45', width 35', depth 3'
Reference: wellhead X, other ___
Footage from reference: 190'
Direction from reference: 30 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) Greater than 1000 feet (0 points)	20
	RANKING SCORE (TOTAL POINTS):	40

Date Remediation Started: _____ **Date Completed:** 8/10/94

Remediation Method: (Check all appropriate sections)
Excavation ✓ Approx. cubic yards 175
Landfarmed ✓ Insitu Bioremediation ___
Other _____

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

General Description Of Remedial Action: _____

Excavation, GROUNDWATER IMPACTED. PUMPED & DISPOSED BY TRIPLE S.
FURTHER TESTING NECESSARY.

Ground Water Encountered: No ___ Yes ✓ Depth 2'

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

Sample location see Attached Documents
MULTIPLE (4) SAMPLES COLLECTED.
Sample depth 2' (GROUNDWATER)
Sample date _____ Sample time _____

Sample Results
Benzene(ppm) _____
Total BTEX(ppm) _____
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 8/10/94
SIGNATURE B J Shaw
PRINTED NAME AND TITLE Buddy D. Shaw, Environmental Coordinator

CLIENT: AMOCO	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: _____ C.O.C. NO: SEE LAB REPORTS

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: MARTINEZ GC WELL #: G1 PIT: ABANDONED

QUAD/UNIT: A SEC: 24 TWP: 29N RNG: 10W PM: NM CNTY: SJ ST: NM

QTR/FOOTAGE: NE¼ NE¼ CONTRACTOR: P VELASQUEZ

DATE STARTED: 7/20/94

DATE FINISHED: _____

ENVIRONMENTAL SPECIALIST: NV

SOIL REMEDIATION: EXCAVATION APPROX. 45 FT. x 35 FT. x 3 FT. DEEP.

DISPOSAL FACILITY: ON-SITE / LF CUBIC YARDAGE: 175

LAND USE: RANGE / AGRIC. LEASE: -

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 190 FEET ~~N30W~~ S30E GW FROM WELLHEAD.

DEPTH TO GROUNDWATER: <50' NEAREST WATER SOURCE: ~~>1000'~~ >1000' GW NEAREST SURFACE WATER: <200'

NMOCD RANKING SCORE: 40 50 GW NMOCD TPH CLOSURE STD: 100 PPM FORMATION: MV

SOIL AND EXCAVATION DESCRIPTION:

SOIL MOSTLY SILTY SAND TO CLAY, COHESIVE SLIGHTLY MOIST TO SATURATED FIRM TO STIFF, COLLECTED GW SAMPLES ONLY, UNABLE TO COLLECT SOIL SAMPLES.

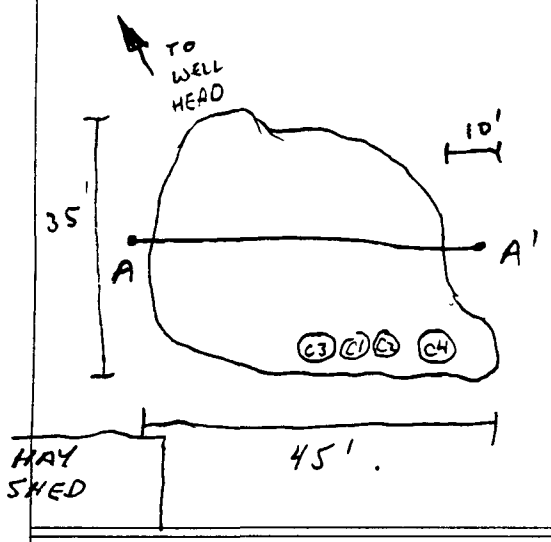
FIELD 418.1 CALCULATIONS

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

SCALE

0 FT

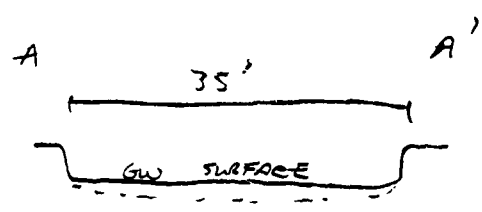
PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1	
2	
3	
4	
5	
	LAB SAMPLES
C1@GW(2')	BTEX (8020)
C2@GW(2')	BTEX (8020)
C3@GW(2')	BTEX (8020)
C4@GW(2')	BTEX (8020)

PIT PROFILE



TRAVEL NOTES: CALLOUT: _____ ONSITE: _____

ON SITE TECHNOLOGIES, LTD.

AROMATIC VOLATILE ORGANICS

Attn:	Nelson Velez	Date:	7/20/94
Company:	Blagg Engineering	Lab ID:	1611
Address:	P.O. Box 87	Sample ID:	2026
City, State:	Bloomfield, NM 87413	Job No.	2-1000

Project Name:	Martinez GC G1				
Project Location:	c @ GW (2') - Abandoned Pit				
Sampled by:	NV	Date:	7/19/94	Time:	7:28
Analyzed by:	DLA	Date:	7/20/94		
Sample Matrix:	Liquid				

Aromatic Volatile Organics

Component	**Measured Concentration ug/L
Benzene	306
Toluene	14
Ethylbenzene	151
m,p-Xylene	2,146
o-Xylene	498
	TOTAL 3,114 ug/L

ND - Not Detectable
** - Method Detection Limit, 2 ug/L

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

Approved by: [signature]
Date: 7/20/94

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
3005 NORTHRIDGE DRIVE ▪ SUITE F ▪ P. O. BOX 2606 ▪ FARMINGTON, NEW MEXICO 87499

ON SITE TECHNOLOGIES, LTD.

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	7/26/94
Company:	*Blagg Engineering*	*Lab ID:*	*1673*
Address:	*P.O. Box 87*	*Sample ID:*	*2126*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***Martinez GC G1***				
Project Location:	***C2 A GW (2')***				
Sampled by:	NV	Date:	7/25/94	Time:	11:00
Analyzed by:	DLA	Date:	7/26/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	***Measured Concentration ug/L
Benzene	*749*
Toluene	*16*
Ethylbenzene	*194*
m,p-Xylene	*6,653*
o-Xylene	*1,571*
TOTAL	*9,183 ug/L*

ND - Not Detectable
*** - Method Detection Limit, 2 ug/L*

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

Approved by: JA
Date: 7/26/94

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
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ON SITE TECHNOLOGIES, LTD.

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	8/2/94
Company:	*Blagg Engineering*	*Lab ID:*	*1677*
Address:	*P.O. Box 87*	*Sample ID:*	*2213*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000_*

Project Name:	***Martinez GC G1***				
Project Location:	***C3 @ GW (2') - Abandoned Pit***				
Sampled by:	NV	Date:	8/1/94	Time:	12:40
Analyzed by:	DLA	Date:	8/2/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	***Measured Concentration ug/L
Benzene	*134*
Toluene	*5.0*
Ethylbenzene	*120*
m,p-Xylene	*1,793*
o-Xylene	*398*
TOTAL	*2,450 ug/L*

ND - Not Detectable
*** - Method Detection Limit, 2 ug/L*

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

Approved by:
Date: 8/2/94

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
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ON SITE TECHNOLOGIES, LTD.

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	8/9/94
Company:	*Blagg Engineering*	*Lab ID:*	*1686*
Address:	*P.O. Box 87*	*Sample ID:*	*2418*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***Martinez GC G1***				
Project Location:	***C4 @ GW (2') - Abandoned Pit***				
Sampled by:	NV	Date:	8/9/94	Time:	12:20
Analyzed by:	DLA	Date:	8/10/94		
Sample Matrix:	*Liquid*				

Aromatic Volatile Organics

Component	***Measured Concentration ug/L
Benzene	*106*
Toluene	*4.7*
Ethylbenzene	*140*
m,p-Xylene	*2,006*
o-Xylene	*412*
TOTAL	*2,668 ug/L*

ND - Not Detectable
*** - Method Detection Limit, 2 ug/L*

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

Approved by: Bill Vogel, PhD.
Date: 8/10/94

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
3005 NORTHRIDGE DRIVE ▪ SUITE F ▪ P. O. BOX 2606 ▪ FARMINGTON, NEW MEXICO 87499

ON SITE TECHNOLOGIES LIMITED

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

CHAIN OF CUSTODY RECORD

Nº 1611

Date: 7/19/94

Page 1 of 1

Purchase Order No.:	Reference No.:
SEND INVOICE TO — Name:	
Company: BLAGG ENGINEERING	Dept.
Address: P.O. BOX 87	
City, State, Zip: BLOOMFIELD, NM 87413	

REPORT RESULTS TO	
Name: NELSON VELEZ	Title: PE
Company: SAME	
Mailing Address: SAME	
City, State, Zip: SAME	
Telephone No.: 632-1199	Telefax No.

Special Instructions: MARTINEZ GC G1

Sampler: Nelson Velez

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX (8020)									Remarks (matrix)
(2) @ GW (2') - [illegible]	7/14 0725	GRAB	HgCl	2	✓		2026-1611							H_2O

Relinquished by: Nelson Velez	Date/Time 7/19/94 1519	Received by: [signature]	Date/Time 7/19/94 1519
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush	5 Working Days	10 Working Days	Sampling Location:
✓			

Authorized by: ______________ Date ______
(Client Signature Must Accompany Request)

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

ON SITE TECHNOLOGIES LIMITED

CHAIN OF CUSTODY RECORD

№ 1673

Date: 7/26/94 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.: Reference No.:

SEND INVOICE TO
Name
Company BLAGG ENGINEERING Dept.
Address P.O BOX 87
City, State, Zip BLOOMFIELD, NM 87413

REPORT RESULTS TO
Name Nelson Velez Title AG
Company SAME
Mailing Address SAME
City, State, Zip SAME
Telephone No. 632-1199 Telefax No.

Special Instructions:
MARTINEZ GC G1

Sampler: Nelson Velez

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX (8020)										Remarks (matrix)
CZ @ GW (2')	7/26/94 1100	GRAB	HgCl	2	✓			2126-1673							H2O

Relinquished by: Nelson Velez Date/Time 7/26/94 1134 Received by: [signature] Date/Time 7/26/94 1135
Relinquished by: Date/Time Received by: Date/Time
Relinquished by: Date/Time Received by: Date/Time

Method of Shipment:

Rush | 5 Working Days | 10 Working Days | Sampling Location:

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

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

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

CHAIN OF CUSTODY RECORD

№ 1677

Date: 8/1/94

Page 1 of 1

Purchase Order No.:	Reference No.:
SEND INVOICE TO Name:	
Company: BURGE ENGINEERING	Dept.:
Address: P.O. BOX 87	
City, State, Zip: BLOOMFIELD, NM 87413	

REPORT RESULTS TO	
Name: NELSON VELEZ	Title: PG
Company: SAME	
Mailing Address: SAME	
City, State, Zip: SAME	
Telephone No.: 632-1199	Telefax No.:

Special Instructions: MARTINEZ GC 2L

Sampler: [signature]

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX (8020)										Remarks (matrix)
C3 @ (GW @ 2') - ABANDONED PIT	8/1/94 1640	GRAB	HgCl	2	✓		2213-1677								

Relinquished by: [signature]	Date/Time 8/1/94 1600	Received by: Tony Tristan	Date/Time 8/1/94 1600
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:	Rush	5 Working Days	10 Working Days	Sampling Location:

Authorized by: ______________ Date ______
(Client Signature Must Accompany Request)

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

ON SITE TECHNOLOGIES LIMITED

CHAIN OF CUSTODY RECORD

No. 1686

Date: 8/9/94

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.: | Reference No.:

SEND INVOICE TO
Name
Company BLAGG ENGINEERING | Dept.
Address P.O. BOX 87
City, State, Zip BLOOMFIELD, NM 87413

REPORT RESULTS TO
Name NELSON VELEZ | Title PE
Company SAME
Mailing Address SAME
City, State, Zip SAME
Telephone No. 632-1199 | Telefax No.

Special Instructions:
MARTINEZ GC G1

Sampler: [signature]

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE/ GRAB	PRESERVATIVES	Number of Containers	BTEX (8020)	Remarks (matrix)
C4 C (@ 2') - ABANDONED PIT	8/9/94 1400	GRAB	H_2SO_4	2	✓	2418-1686

Relinquished by: [signature]	Date/Time 8/10/94 1404	Received by: [signature]	Date/Time 8/10/94 1404
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

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

Rush	5 Working Days	10 Working Days	Sampling Location:

Distribution: White – On Site Yellow – L... Pink – Sampler Goldenrod – Client

ON SITE TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT
for EPA Method 8020

Date Analyzed: 7/20/94

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

Method Blank

Analytes in Blank	Amount
Average Amount of All Analytes In Blank	<1 ppb

Calibration Check

Calibration Standards	Units of Measure	*True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20	20	0	15%
Toluene	ppb	20	19	6	15%
Ethylbenzene	ppb	20	19	7	15%
m,p-Xylene	ppb	40	37	8	15%
o-Xylene	ppb	20	18	11	15%

Spike Results

Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	99	104	(39-150)	3	20%
Toluene	100	99	(46-148)	1	20%
Ethylbenzene	100	105	(32-160)	3	20%
m,p-Xylene	102	103	(35-145)	1	20%
o-Xylene	101	98	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	S3 Percent Recovered
Limits	(70-130)		
2026-1611	100		

S1: Flourobenzene

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
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ON SITE TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT
for EPA Method 8020

Date Analyzed: 7/26/94

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

Method Blank

Analytes in Blank	*Amount*
Average Amount of All Analytes In Blank	<0.5 ppb

Calibration Check

Calibration Standards	*Units of Measure*	**True Value*	*Analyzed Value*	*% Diff*	*Limit*
Benzene	ppb	20	19	5	15%
Toluene	ppb	20	18	10	15%
Ethylbenzene	ppb	20	18	8	15%
m,p-Xylene	ppb	40	36	11	15%
o-Xylene	ppb	20	19	7	15%

Spike Results

Analyte	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Benzene	94	100	(39-150)	4	20%
Toluene	92	96	(46-148)	3	20%
Ethylbenzene	95	97	(32-160)	2	20%
m,p-Xylene	98	100	(35-145)	1	20%
o-Xylene	98	97	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*S3 Percent Recovered*
Limits	(70-130)		
2126-1673	98		

S1: Flourobenzene

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
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ON SITE TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT
for EPA Method 8020

Date Analyzed: 8/2/94

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

Method Blank

Analytes in Blank	Amount
Average Amount of All Analytes In Blank	<0.5 ppb

Calibration Check

Calibration Standards	Units of Measure	*True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20	20	2	15%
Toluene	ppb	20	20	2	15%
Ethylbenzene	ppb	20	20	2	15%
m,p-Xylene	ppb	40	38	4	15%
o-Xylene	ppb	20	20	0	15%

Spike Results

Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	94	100	(39-150)	4	20%
Toluene	92	96	(46-148)	3	20%
Ethylbenzene	95	97	(32-160)	2	20%
m,p-Xylene	98	100	(35-145)	1	20%
o-Xylene	98	97	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	S3 Percent Recovered
Limits	(70-130)		
2213-1677	99		

S1: Flourobenzene

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
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ON SITE TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT
for EPA Method 8020

Date Analyzed: 8/10/94

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

Method Blank

Analytes in Blank	Amount
Average Amount of All Analytes In Blank	<0.5 ppb

Calibration Check

Calibration Standards	Units of Measure	*True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20	20	1	15%
Toluene	ppb	20	18	8	15%
Ethylbenzene	ppb	20	19	6	15%
m,p-Xylene	ppb	40	36	11	15%
o-Xylene	ppb	20	18	12	15%

Spike Results

Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	103	104	(39-150)	0	20%
Toluene	99	100	(46-148)	0	20%
Ethylbenzene	98	102	(32-160)	3	20%
m,p-Xylene	102	97	(35-145)	3	20%
o-Xylene	101	100	(35-145)	0	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	S3 Percent Recovered
Limits	(70-130)		
2418-1686	95		

S1: Flourobenzene

FAX: (505) 327-1496 • 24 HR. – (505) 327-7105 • OFF.: (505) 325-8786
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Comb. Lock = 0300

LANDFARM

TERRENCE ARCHUNDE 632-224

ENVIROTECH Inc.

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

FIELD REPORT: CLOSURE VERIFICATION

JOB No: 92140
PAGE No: 1 of 1

LOCATION: LEASE: MARTINEZ GC WELL: G1 QD: NE/4 NE/4 (A)
SEC: 24 TWP: 29 N RNG: 10W BM: NM CNTY: SAN JUAN ST: NM PIT:
CONTRACTOR: PAUL SONS
EQUIPMENT USED: BACKHOE

DATE STARTED: 1/5/94
DATE FINISHED: 1/5/94
ENVIRONMENTAL SPECIALIST: NV

SOIL REMEDIATION: QUANTITY: UNKNOWN
DISPOSAL FACILITY: LANDFARM - SAME LEASE
LAND USE: RANGE
SURFACE CONDITIONS: LT. MED. GRAY SAND & GRAVEL

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY _____ YARDS _____ FROM WELLHEAD.

comp. = 524 ppm TPH

DEPTH TO GROUNDWATER: < 50'
NEAREST WATER SOURCE: > 1000'
NEAREST SURFACE WATER: < 200'

FROM SE INTERSECT LID ARCHUNDE #1 WELL HEAD

① 39' 527°W
② 58' 544 E
③ 81' N76E
④ 79' N32W
⑤ 120' S15E

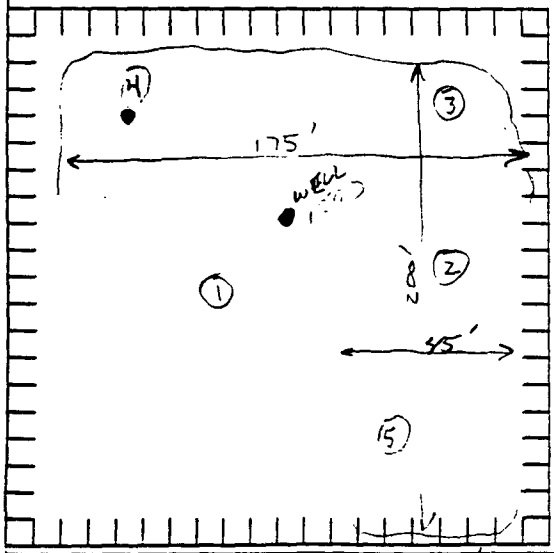
COLLECTED COMPOSITE SAMPLE (5 PTS) FOR 418.1 ~~AA~~ (NOT FOR CLOSURE)
AUTHORIZED VERBALLY BY BUDDY SHAW 1/5/94 0930.

FIELD 418.1 CALCULATIONS

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

SCALE
0 FEET N

PIT PERIMETER



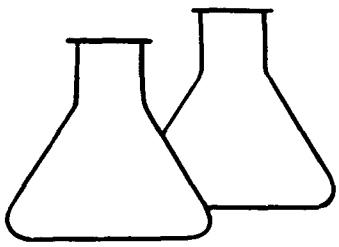
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)

PIT PROFILE

NOT APPLICABLE

TRAVEL NOTES: CALLOUT: 1/5/94 ONSITE: 1/5/94



ENVIROTECH LABS

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

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	1 @ Surface	Date Sampled:	01-05-94
Laboratory Number:	6712	Date Received:	01-06-94
Sample Matrix:	Soil	Date Analyzed:	01-06-94
Preservative:	Cool	Date Reported:	01-06-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	221	10

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

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

Comments: Martinez GC G1 Reserve Pit (Drilling Mud) C4956

Tony Tristano
Analyst

Review

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EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	Composite	Date Sampled:	01-05-94
Laboratory Number:	6711	Date Received:	01-06-94
Sample Matrix:	Soil	Date Analyzed:	01-06-94
Preservative:	Cool	Date Reported:	01-06-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	524	10

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

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

Comments: Martinez GC G1 Landfarm C4955

Tony Tristan
Analyst

Review

3303

RESERVE PIT

CHAIN OF CUSTODY RECORD

C4956

Client/Project Name	Project Location		ANALYSIS/PARAMETERS
Amoco 92140	~~STOCKPILE~~ (DRILLING MUD) MARTINEZ GC G1	9/8 1/6/94	
Sampler: (Signature) Nelson Velez	Chain of Custody Tape No.		

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (1.8)						Remarks
① @ SURFACE	1/5/94	1340	6712	SOIL	1	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	1/6/94	0711	Sherri L. Pierce	1-6-94	0711
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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3302

CHAIN OF CUSTODY RECORD

C4955

Client/Project Name			Project Location		ANALYSIS/PARAMETERS								
AMOCO 92140			LANDFARM MARTINEZ GC G1										
Sampler: (Signature) Nelson Velez			Chain of Custody Tape No.										Remarks
Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (418.1)							
COMPOSITE	1/5/94	1530	6711	SOIL	1	✓							

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	1/6/94	0709	[signature]	1-6-94	0709
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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CLIENT: AMOCO	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: C4954 C4956 C4939 C.O.C. NO: 5647

FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: NAME: MARTINEZ GC G WELL #: 1 PITS: BLOW, DEHY, ABAN.
QUAD/UNIT: A SEC: 24 TWP: 29N RNG: 10W PM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: NE/4 NE/4 CONTRACTOR: P&S

DATE STARTED: 12.4.97
DATE FINISHED:
ENVIRONMENTAL SPECIALIST: NV/EP

SOIL REMEDIATION:

REMEDIATION SYSTEM: LANDFARM APPROX. CUBIC YARDAGE: 1,467
LAND USE: RANGE LIFT DEPTH (ft): NA

FIELD NOTES & REMARKS:

DEPTH TO GROUNDWATER: <50' NEAREST WATER SOURCE: <1000' NEAREST SURFACE WATER: <200'

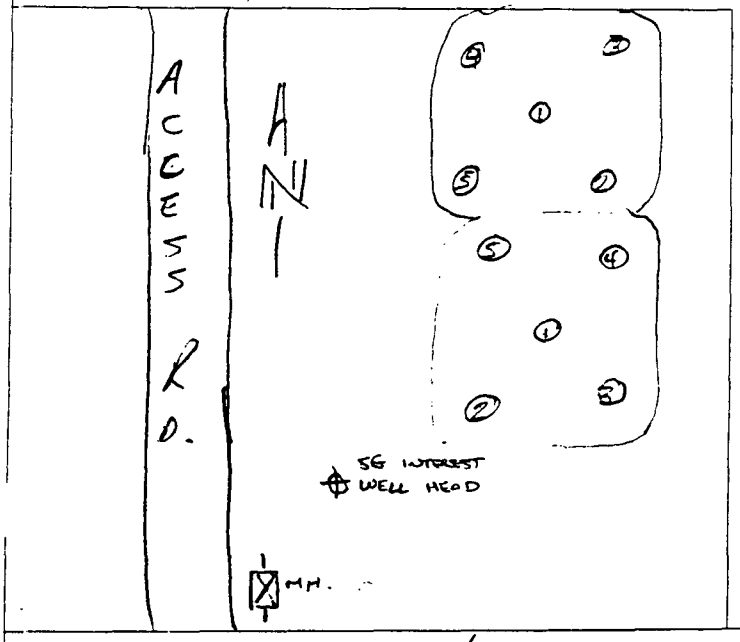
NMOCD RANKING SCORE: 50 NMOCD TPH CLOSURE STD: 100 PPM

SOIL IS A SLIGHTLY MOIST DARK YELLOW W/ LIGHT BROWN SILTY SAND. SOME LIGHT GRAY CLAYISH.
NO STAIN OR HC ODOR TOOK 5PT COMPOSITE ON TWO(2) AREAS OF LANDFARM DUE TO SIZE

FIELD 418.1 CALCULATIONS

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

SKETCH/SAMPLE LOCATIONS



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
LF-1	0.0
LF-2	0.0

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME	RESULTS
LF-1	8015	1300	ND
LF-2	8015	1350	ND

SCALE
0 FT

TRAVEL NOTES: CALLOUT: N/A ONSITE: 12.4.97 1300

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	LF - 1	Date Reported:	12-09-97
Laboratory Number:	C651	Date Sampled:	12-04-97
Chain of Custody No:	5647	Date Received:	12-05-97
Sample Matrix:	Soil	Date Extracted:	12-08-97
Preservative:	Cool	Date Analyzed:	12-08-97
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

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

Comments: **Martinez GC G #1 Landfarm. 5 Pt. Composite.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	LF - 2	Date Reported:	12-09-97
Laboratory Number:	C652	Date Sampled:	12-04-97
Chain of Custody No:	5647	Date Received:	12-05-97
Sample Matrix:	Soil	Date Extracted:	12-08-97
Preservative:	Cool	Date Analyzed:	12-08-97
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

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

Comments: **Martinez GC G #1 Landfarm. 5 Pt. Composite.**

Analyst

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CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
BLAGG / AMOCO	LANDFARM MARTINEZ GC G #1

Sampler: (Signature)	Chain of Custody Tape No.
Ed Potter NV	04034-10

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015)						Remarks
												BOTH SAMPLES PRESERV. - COOL
LF-1	12/4/97	1300	C651	SOIL	1	✓						5 PT. COMPOSITE
LF-2	12/4/97	1350	C652	SOIL	1	✓						5 PT. COMPOSITE

SAMPLES RECEIVED COOL & INTACT DLA

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Ed Potter NV	12/5/97	0700	Nelson Velez	12/5/97	0700
Nelson Velez	12/5/97	0945	Denise L. Alvarez	12-5-97	0945

Ref COC's 5638-5647

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	12-08-PM-TPH QA/QC	Date Reported:	12-09-97
Laboratory Number:	C649	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	12-08-97
Condition:	N/A	Analysis Requested:	TPH

Calibration	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	10-28-97	2.9715E-04	3.0698E-04	3.31%	0 - 15%
Diesel Range C10 - C28	10-28-97	2.9167E-04	3.0288E-04	3.84%	0 - 15%

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

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

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	249	100%	75 - 125%
Diesel Range C10 - C28	ND	250	250	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

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

Comments: **QA/QC for samples C649 - C656.**

Analyst

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ENVIROTECH INC.

MONITOR WELL QUARTERLY MONITORING DATA

DATE: 8-22-94 PROJECT NO: 92140

CLIENT: AMOCO CHAIN-OF-CUSTODY NO: 3445-3446

LOCATION: MARTINEZ G1

PROJECT MANAGER: REO SAMPLER: REO

MONITOR WELL DATA

WELL #	OVM (PPM)	pH	COND. (µMHO)	TEMP (°C)	D.T.W. (FT.)	T.D. (FT.)	BAILS BAILED ~~(GAL.)~~	PRODUCT (IN.)	
wp #1	—	7.1	1200	12°	9.36	12.08	2	ø	CLOUDY NO ODOR
#2	~	6.7	1200	12°	10.66	13.94	4.5	ø	CLOUDY NO ODOR
#3	~	7.0	1900	12°	10.99	13.92	2	ø	GRAY-SLIGHT
#4	—	6.7	1200	12°	10.83	13.53	3	ø	CLOUDY NO ODOR
#5	~	7.4	500	12°	9.60	12.06	2	ø	GRAY
#6	~	6.8	1000	12°	8.97	11.93	2	ø	CLOUDY
#7	~	6.8	1800	14°	7.37	10.30	2	ø	GRAY
#8	~	7.0	2000	12°	1.88	5.27	3	ø	CLOUDY
#9	~	7.0	700	12°	2.27	5.73	2	ø	CLOUDY
Weak → #10	~	6.8	1900	13°	2.58	5.75	6	ø	CLOUDY
#11	~	7.3	1200	12°	2.50	5.72	6	ø	CLOUDY
Hole #12	—	7.5	1600	11°	34.6"	—	—	ø	

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

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #1	Date Reported:	03-24-94
Laboratory Number:	7080	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl & Cool	Date Analyzed:	03-23-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	0.3
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.3
o-Xylene	ND	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	97 %
Bromofluorobenzene	99 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #2	Date Reported:	03-24-94
Laboratory Number:	7081	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl & Cool	Date Analyzed:	03-23-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	0.3	0.3
Ethylbenzene	0.4	0.2
p,m-Xylene	3.4	0.3
o-Xylene	0.7	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	98 %
Bromofluorobenzene	100 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #3	Date Reported:	03-24-94
Laboratory Number:	7082	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl & Cool	Date Analyzed:	03-23-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	0.9	0.2
Toluene	17.2	0.3
Ethylbenzene	ND	0.2
p,m-Xylene	26.6	0.3
o-Xylene	16.4	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	100 %
Bromofluorobenzene	99 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #4	Date Reported:	03-24-94
Laboratory Number:	7083	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl & Cool	Date Analyzed:	03-23-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	960	0.2
Toluene	1,670	0.3
Ethylbenzene	940	0.2
p,m-Xylene	1,770	0.3
o-Xylene	1,280	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	98 %
Bromofluorobenzene	97 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #5	Date Reported:	03-24-94
Laboratory Number:	7084	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl & Cool	Date Analyzed:	03-23-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	5.9	0.2
Toluene	6.6	0.3
Ethylbenzene	53	0.2
p,m-Xylene	550	0.3
o-Xylene	83	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	98 %
Bromofluorobenzene	97 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #6	Date Reported:	03-24-94
Laboratory Number:	7085	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl and Cool	Date Analyzed:	03-23-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	7,100	1.0
Toluene	49.3	2.0
Ethylbenzene	1,640	2.0
p,m-Xylene	6,600	2.5
o-Xylene	3,800	2.0

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99 %
Bromofluorobenzene	99 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G 1

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #7	Date Reported:	03-24-94
Laboratory Number:	7086	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl and Cool	Date Analyzed:	03-23-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	1,980	1.0
Toluene	710	2.0
Ethylbenzene	1,530	2.0
p,m-Xylene	7,700	2.5
o-Xylene	3,600	2.0

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	98 %
Bromofluorobenzene	101 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #8	Date Reported:	03-24-94
Laboratory Number:	7087	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl and Cool	Date Analyzed:	03-23-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	9.3	0.2
Toluene	14.8	0.4
Ethylbenzene	19.7	0.4
p,m-Xylene	281	0.5
o-Xylene	59	0.4

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	101 %
Bromofluorobenzene	100 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #9	Date Reported:	03-24-94
Laboratory Number:	7088	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl and Cool	Date Analyzed:	03-23-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	0.4
Ethylbenzene	0.5	0.4
p,m-Xylene	10.9	0.5
o-Xylene	2.4	0.4

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99 %
Bromofluorobenzene	99 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

Analyst

Review

ENVIROTECH LABS

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #10	Date Reported:	03-24-94
Laboratory Number:	7089	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl and Cool	Date Analyzed:	03-23-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	3.2	0.4
Ethylbenzene	ND	0.4
p,m-Xylene	0.7	0.5
o-Xylene	ND	0.4

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99 %
Bromofluorobenzene	98 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

Analyst

Review

ENVIROTECH LABS

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #11	Date Reported:	03-24-94
Laboratory Number:	7090	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl and Cool	Date Analyzed:	03-23-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	0.4
Ethylbenzene	ND	0.4
p,m-Xylene	1.4	0.5
o-Xylene	0.7	0.4

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99 %
Bromofluorobenzene	100 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	WP #12	Date Reported:	03-24-94
Laboratory Number:	7091	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Preservative:	HgCl and Cool	Date Analyzed:	03-23-94
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	0.7	0.2
Toluene	8.8	0.4
Ethylbenzene	2.2	0.4
p,m-Xylene	39.7	0.5
o-Xylene	7.1	0.4

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	100 %
Bromofluorobenzene	99 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments: Martinez G1

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QUALITY ASSURANCE/QUALITY CONTROL

DOCUMENTATION

ENVIROTECH LABS

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	03-24-94
Laboratory Number:	0323am.blk	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	03-23-94
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	0.3
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.3
o-Xylene	ND	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	95 %
Bromofluorobenzene	98 %

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

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

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

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** QUALITY ASSURANCE EPA METHOD 8020
MATRIX SPIKE - AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Sample Spike	Date Reported:	03-24-94
Laboratory Number:	7080-S-BTEX	Date Sampled:	03-22-94
Sample Matrix:	Water	Date Received:	03-22-94
Analysis Requested:	BTEX	Date Analyzed:	03-23-94
Condition:	NA		

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	ND	20.0	18.6	0.2	93	39-150
Toluene	ND	20.0	19.6	0.3	97	46-148
Ethylbenzene	ND	20.0	19.8	0.2	99	32-160
p,m-Xylene	ND	20.0	19.4	0.3	96	46-148
o-Xylene	ND	20.0	19.6	0.2	97	46-148

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

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

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

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CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
Amoco # 92140	MARTINEZ G1	
Sampler: (Signature) R. E. O'Neill	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX						Remarks
WP #1	3-22-94	0930	7080	WATER	2	✓						
WP #2	3-22-94	0950	7081	"	2	✓						
WP #3	3-22-94	1015	7082	"	2	✓						
WP #4	3-22-94	1035	7083	"	2	✓						
WP #5	3-22-94	1105	7084	"	2	✓						
WP #6	3-22-94	1120	7085	"	2	✓						
WP #7	3-22-94	1145	7086	"	2	✓						
WP #8	3-22-94	1200	7087	"	2	✓						
WP #9	3-22-94	1230	7088	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
R. E. O'Neill	3-22-94	1443	Kevin L. Gleason	3-22-94	1443
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
AMOCO # 92140	MARTINEZ 61	

Sampler: (Signature) R. E. O'Neill

Chain of Custody Tape No.

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX						Remarks
WP #10	3-22-94	1245	7089	WATER	2	✓						
WP #11	3-22-94	1315	7090	"	2	✓						
WP #12	3-22-94	1330	7091	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
R. E. O'Neill	3-22-94	1444	Denise L. Gibson	3-22-94	1444
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : AMOCO PRODUCTION CO.

CHAIN-OF-CUSTODY # : 5720
5729

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ENVIROTECH, INC.

Date : February 25, 1998

SAMPLER : N J V

Filename : 02-25-98.WK4

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING	pH TIME	CONDUCT (umhos)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
2R	101.59	89.55	12.04	13.90	0925	7.5	1,600	1.75	-
3R	100.71	89.31	11.40	15.90	1010	7.4	2,700	2.25	-
6R	98.47	89.30	9.17	14.60	1030	7.2	1,400	3.00	-
7R	101.52	89.23	12.29	17.00	1100	7.2	2,400	2.75	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

MW #'s 6R & 7R sampled on Feb. 2, 1998 . Collected BTEX and Anion / Cation samples for all MW's listed above . DTW for MW #'s 6R = 8.55 ft. & 7R = 11.65 ft. during 2 / 2 / 98 sampling.

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW # 2R	Date Reported:	02-26-98
Chain of Custody:	5729	Date Sampled:	02-25-98
Laboratory Number:	C948	Date Received:	02-25-98
Sample Matrix:	Water	Date Analyzed:	02-26-98
Preservative:	HgCl2 & Cool	Analysis Requested:	btex-mtbe
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**6.4**	**1**	**0.2**
Toluene	**19.2**	**1**	**0.2**
Ethylbenzene	**2.5**	**1**	**0.2**
p,m-Xylene	**13.6**	**1**	**0.2**
o-Xylene	**5.1**	**1**	**0.1**
Total BTEX	**46.8**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G # 1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW # 3R	Date Reported:	02-26-98
Chain of Custody:	5729	Date Sampled:	02-25-98
Laboratory Number:	C949	Date Received:	02-25-98
Sample Matrix:	Water	Date Analyzed:	02-26-98
Preservative:	HgCl2 & Cool	Analysis Requested:	btex-mtbe
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**173**	**10**	**1.8**
Toluene	**1,690**	**10**	**1.7**
Ethylbenzene	**302**	**10**	**1.5**
p,m-Xylene	**504**	**10**	**2.2**
o-Xylene	**446**	**10**	**1.0**
Total BTEX	**3,120**		

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: **Martinez GC G # 1.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #6R	Date Reported:	02-03-98
Chain of Custody:	5720	Date Sampled:	02-02-98
Laboratory Number:	C865	Date Received:	02-02-98
Sample Matrix:	Water	Date Analyzed:	02-03-98
Preservative:	HgCl2 & Cool	Analysis Requested:	btex-tmb
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**2,620**	**5**	**0.9**
Toluene	**12.5**	**5**	**0.8**
Ethylbenzene	**787**	**5**	**0.8**
p,m-Xylene	**2,050**	**5**	**1.1**
o-Xylene	**1,850**	**5**	**0.5**
Total BTEX	**7,320**		

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: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #7R	Date Reported:	02-03-98
Chain of Custody:	5720	Date Sampled:	02-02-98
Laboratory Number:	C866	Date Received:	02-02-98
Sample Matrix:	Water	Date Analyzed:	02-03-98
Preservative:	HgCl2 & Cool	Analysis Requested:	btex-tmb
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**236**	**5**	**0.9**
Toluene	**35.9**	**5**	**0.8**
Ethylbenzene	**208**	**5**	**0.8**
p,m-Xylene	**2,680**	**5**	**1.1**
o-Xylene	**535**	**5**	**0.5**
Total BTEX	**3,690**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW # 2R	Date Reported:	02-26-98
Laboratory Number:	C948	Date Sampled:	02-25-98
Chain of Custody:	5729	Date Received:	02-25-98
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	02-26-98
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	**7.05**	s.u.		
Conductivity @ 25° C	**1,980**	umhos/cm		
Total Dissolved Solids @ 180C	**985**	mg/L		
Total Dissolved Solids (Calc)	**973**	mg/L		
SAR	**2.4**	ratio		
Total Alkalinity as CaCO3	**516**	mg/L		
Total Hardness as CaCO3	**524**	mg/L		
Bicarbonate as HCO3	**516**	mg/L	8.46	meq/L
Carbonate as CO3	**<1**	mg/L	0.00	meq/L
Hydroxide as OH	**<1**	mg/L	0.00	meq/L
Nitrate Nitrogen	**2.8**	mg/L	0.05	meq/L
Nitrite Nitrogen	**0.017**	mg/L	0.00	meq/L
Chloride	**60.0**	mg/L	1.69	meq/L
Fluoride	**1.04**	mg/L	0.05	meq/L
Phosphate	**1.7**	mg/L	0.05	meq/L
Sulfate	**278**	mg/L	5.79	meq/L
Calcium	**152**	mg/L	7.58	meq/L
Magnesium	**35.2**	mg/L	2.90	meq/L
Potassium	**1.5**	mg/L	0.04	meq/L
Sodium	**128**	mg/L	5.57	meq/L
Cations			16.09	meq/L
Anions			16.09	meq/L
Cation/Anion Difference			**0.02%**	

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

Comments: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW # 3R	Date Reported:	02-26-98
Laboratory Number:	C949	Date Sampled:	02-25-98
Chain of Custody:	5729	Date Received:	02-25-98
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	02-26-98
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	**7.24**	s.u.		
Conductivity @ 25° C	**3,850**	umhos/cm		
Total Dissolved Solids @ 180C	**1,900**	mg/L		
Total Dissolved Solids (Calc)	**1,895**	mg/L		
SAR	**10.7**	ratio		
Total Alkalinity as CaCO3	**1,884**	mg/L		
Total Hardness as CaCO3	**460**	mg/L		
Bicarbonate as HCO3	**1,884**	mg/L	30.88	meq/L
Carbonate as CO3	**<1**	mg/L	0.00	meq/L
Hydroxide as OH	**<1**	mg/L	0.00	meq/L
Nitrate Nitrogen	**0.4**	mg/L	0.01	meq/L
Nitrite Nitrogen	**0.001**	mg/L	0.00	meq/L
Chloride	**37.8**	mg/L	1.07	meq/L
Fluoride	**1.04**	mg/L	0.05	meq/L
Phosphate	**2.3**	mg/L	0.07	meq/L
Sulfate	**6.8**	mg/L	0.14	meq/L
Calcium	**154**	mg/L	7.68	meq/L
Magnesium	**18.6**	mg/L	1.53	meq/L
Potassium	**2.0**	mg/L	0.05	meq/L
Sodium	**528**	mg/L	22.97	meq/L
Cations			32.23	meq/L
Anions			32.22	meq/L
Cation/Anion Difference			**0.04%**	

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

Comments: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW # 6R	Date Reported:	02-03-98
Laboratory Number:	C865	Date Sampled:	02-02-98
Chain of Custody:	5720	Date Received:	02-02-98
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	02-03-98
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	**7.02**	s.u.		
Conductivity @ 25° C	**1,488**	umhos/cm		
Total Dissolved Solids @ 180C	**750**	mg/L		
Total Dissolved Solids (Calc)	**737**	mg/L		
SAR	**4.8**	ratio		
Total Alkalinity as CaCO3	**730**	mg/L		
Total Hardness as CaCO3	**246**	mg/L		
Bicarbonate as HCO3	**730**	mg/L	11.96	meq/L
Carbonate as CO3	**<1**	mg/L	0.00	meq/L
Hydroxide as OH	**<1**	mg/L	0.00	meq/L
Nitrate Nitrogen	**0.2**	mg/L	0.00	meq/L
Nitrite Nitrogen	**<.001**	mg/L	0.00	meq/L
Chloride	**19.6**	mg/L	0.55	meq/L
Fluoride	**1.01**	mg/L	0.05	meq/L
Phosphate	**0.2**	mg/L	0.01	meq/L
Sulfate	**1.1**	mg/L	0.02	meq/L
Calcium	**82.4**	mg/L	4.11	meq/L
Magnesium	**9.76**	mg/L	0.80	meq/L
Potassium	**5.2**	mg/L	0.13	meq/L
Sodium	**174**	mg/L	7.57	meq/L
Cations			12.62	meq/L
Anions			12.60	meq/L
Cation/Anion Difference			**0.11%**	

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

Comments: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW # 7R	Date Reported:	02-03-98
Laboratory Number:	C866	Date Sampled:	02-02-98
Chain of Custody:	5720	Date Received:	02-02-98
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	02-03-98
Condition:	Cool & Intact		

Parameter	Analytical Result	Units		Units
pH	**7.12**	s.u.		
Conductivity @ 25° C	**3,055**	umhos/cm		
Total Dissolved Solids @ 180C	**1,525**	mg/L		
Total Dissolved Solids (Calc)	**1,513**	mg/L		
SAR	**6.5**	ratio		
Total Alkalinity as CaCO3	**904**	mg/L		
Total Hardness as CaCO3	**542**	mg/L		
Bicarbonate as HCO3	**904**	mg/L	14.82	meq/L
Carbonate as CO3	**<1**	mg/L	0.00	meq/L
Hydroxide as OH	**<1**	mg/L	0.00	meq/L
Nitrate Nitrogen	**0.4**	mg/L	0.01	meq/L
Nitrite Nitrogen	**0.006**	mg/L	0.00	meq/L
Chloride	**382**	mg/L	10.78	meq/L
Fluoride	**1.02**	mg/L	0.05	meq/L
Phosphate	**1.6**	mg/L	0.05	meq/L
Sulfate	**30.2**	mg/L	0.63	meq/L
Calcium	**153**	mg/L	7.63	meq/L
Magnesium	**39.1**	mg/L	3.22	meq/L
Potassium	**7.1**	mg/L	0.18	meq/L
Sodium	**350**	mg/L	15.23	meq/L
Cations			26.26	meq/L
Anions			26.33	meq/L
Cation/Anion Difference			**0.28%**	

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

Comments: **Martinez GC G #1.**

Analyst

Review

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5720

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
~~Amoco~~ BLAGG/AMOCO	MARTINEZ GC G #1	

Sampler: (Signature)	Chain of Custody Tape No.
Nelson Velez	04034-10

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8021)	ANION/ CATION					Remarks
												ANION/CATION SAMPLES PRESERV. - COOL
MW #6R	2/2/98	1030	C865	WATER	3	✓	✓					BTEX SAMPLES
MW #7R	2/2/98	1100	C864	WATER	3	✓	✓					PRESERV. - $HgCl_2$ & COOL
				SAMPLES RECEIVED COOL & INTACT								

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	2/2/98	1448	Dawn L. Aguirre	2-2-98	14:48
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Ref COC's 5720, 5724

ENVIROTECH INC.
5796 U.S. Highway 64-3014
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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

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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:	Laboratory Blank	Date Reported:	02-03-98
Laboratory Number:	02-03-BTEX.BLANK	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-03-98
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**

ND - Parameter not detected at the stated detection limit.

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

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 C864 - C868 and C870.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	02-03-98
Laboratory Number:	C865	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	HgCl and Cool	Date Analyzed:	02-03-98
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Sample Result (ug/L)	Duplicate Result (ug/L)	Percent Diff.	Det. Limit (ug/L)	Dilution Factor
Benzene	**2,620**	**2,570**	**2.0%**	**0.9**	**5**
Toluene	**12.5**	**12.4**	**1.0%**	**0.8**	**5**
Ethylbenzene	**787**	**779**	**1.0%**	**0.8**	**5**
p,m-Xylene	**2,050**	**2,020**	**1.4%**	**1.1**	**5**
o-Xylene	**1,850**	**1,830**	**1.0%**	**0.5**	**5**

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Maximum Difference
	8020 Compounds	**30 %**

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 C864 - C868 and C870.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Spike	Date Reported:	02-03-98
Laboratory Number:	C865	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	Cool	Date Analyzed:	02-03-98
Condition:	Cool and Intact		

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	**2,620**	**50.0**	**2,670**	**0.9**	**100%**	**39-150**
Toluene	**12.5**	**50.0**	**62.4**	**0.8**	**99%**	**46-148**
Ethylbenzene	**787**	**50.0**	**836**	**0.8**	**100%**	**32-160**
p,m-Xylene	**2,050**	**100**	**2,150**	**1.1**	**100%**	**46-148**
o-Xylene	**1,850**	**50.0**	**1,900**	**0.5**	**100%**	**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 C864 - C868 and C870.**

Analyst

Review

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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:	02-26-BTEX QA/QC	Date Reported:	02-26-98
Laboratory Number:	C946	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-26-98
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	6.8842E-05	7.1785E-05	4.28%	ND	0.2
Toluene	7.5643E-05	7.8386E-05	3.63%	ND	0.2
Ethylbenzene	8.8155E-05	9.1637E-05	3.95%	ND	0.2
p,m-Xylene	6.5684E-05	6.7715E-05	3.09%	ND	0.2
o-Xylene	8.7047E-05	9.0580E-05	4.06%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	ND	ND	0.0%	0 - 30%
Toluene	ND	ND	0.0%	0 - 30%
Ethylbenzene	ND	ND	0.0%	0 - 30%
p,m-Xylene	0.7	0.7	0.0%	0 - 30%
o-Xylene	0.3	0.3	0.0%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	ND	50.0	50.0	100.0%	39 - 150
Toluene	ND	50.0	50.1	100.3%	46 - 148
Ethylbenzene	ND	50.0	50.1	100.2%	32 - 160
p,m-Xylene	0.7	100.0	100.7	100.0%	46 - 148
o-Xylene	0.3	50.0	50.3	100.0%	46 - 148

ND - Parameter not detected at the stated detection limit.

* - Administrative Recovery Acceptance Range = 80% - 115%.

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 C946 - C949.**

Analyst

Review

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5729

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
BLAGG / AMOCO	MARTINEZ GC G#1	
Sampler: (Signature) Nelson Velez	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8021)	ANIONS/ CATIONS					Remarks
												BTEX SAMPLES
												PRESERV. - $HgCl_2$ & COOL
MW #2R	2/25/98	0925	C948	WATER	3	✓	✓					
MW #3R	2/25/98	1010	C949	WATER	3	✓	✓					ANION/CATION
												PRESERV. - COOL ONLY
				SAMPLES RECEIVED COOL & INTACT								

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	2/25/98	1401	Glenn L. Copeland	2-25-98	1401
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Rep COC 5729 - 5730

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BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : AMOCO PRODUCTION CO.

CHAIN-OF-CUSTODY # : 6005

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ENVIROTECH, INC.

Date : May 29, 1998

Filename : 05-29-98.WK3

SAMPLER : N J V

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING	pH TIME	CONDUCT (umhos)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
2R	101.59	91.42	10.17	13.90	1255	7.0	1,100	2.00	-
3R	100.71	90.97	9.74	15.90	1325	7.2	3,000	3.00	-
6R	98.47	91.04	7.43	14.60	1350	7.2	1,400	3.50	-
7R	101.52	91.00	10.52	17.00	1430	7.2	1,200	3.25	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

Collected BTEX samples for all MW's listed above . MW # 3R & # 6R poor recovery .

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #2R	Date Reported:	06-01-98
Chain of Custody:	6005	Date Sampled:	05-29-98
Laboratory Number:	D318	Date Received:	06-01-98
Sample Matrix:	Water	Date Analyzed:	06-01-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**0.4**	**1**	**0.2**
Toluene	**ND**	**1**	**0.2**
Ethylbenzene	**0.2**	**1**	**0.2**
p,m-Xylene	**3.2**	**1**	**0.2**
o-Xylene	**1.6**	**1**	**0.1**
Total BTEX	**5.4**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #3R	Date Reported:	06-01-98
Chain of Custody:	6005	Date Sampled:	05-29-98
Laboratory Number:	D319	Date Received:	06-01-98
Sample Matrix:	Water	Date Analyzed:	06-01-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**665**	**10**	**1.8**
Toluene	**230**	**10**	**1.7**
Ethylbenzene	**484**	**10**	**1.5**
p,m-Xylene	**4,350**	**10**	**2.2**
o-Xylene	**1,410**	**10**	**1.0**
Total BTEX	**7,140**		

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: **Martinez GC G #1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #6R	Date Reported:	06-01-98
Chain of Custody:	6005	Date Sampled:	05-29-98
Laboratory Number:	D320	Date Received:	06-01-98
Sample Matrix:	Water	Date Analyzed:	06-01-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**59.6**	**10**	**1.8**
Toluene	**ND**	**10**	**1.7**
Ethylbenzene	**16.5**	**10**	**1.5**
p,m-Xylene	**295**	**10**	**2.2**
o-Xylene	**98.5**	**10**	**1.0**
Total BTEX	**469**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW - 7R	Date Reported:	06-01-98
Chain of Custody:	6005	Date Sampled:	05-29-98
Laboratory Number:	D321	Date Received:	06-01-98
Sample Matrix:	Water	Date Analyzed:	06-01-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**213**	**10**	**1.8**
Toluene	**19.2**	**10**	**1.7**
Ethylbenzene	**58.6**	**10**	**1.5**
p,m-Xylene	**1,020**	**10**	**2.2**
o-Xylene	**153**	**10**	**1.0**
Total BTEX	**1,460**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

Analyst

Review

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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-BTEX QA/QC	Date Reported:	06-01-98
Laboratory Number:	D317	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	06-01-98
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff.	Blank	Detect. Limit
Benzene	1.4863E-02	1.5028E-02	1.11%	ND	0.2
Toluene	2.2878E-02	2.2993E-02	0.50%	ND	0.2
Ethylbenzene	1.0578E-02	1.0663E-02	0.81%	ND	0.2
p,m-Xylene	8.4559E-03	8.5672E-03	1.32%	ND	0.2
o-Xylene	8.7385E-03	8.8357E-03	1.11%	ND	0.1
1,3,5-trimethylbenzene	6.2277E-03	6.2402E-03	0.20%	ND	0.2
1,2,4-trimethylbenzene	7.3319E-03	7.3687E-03	0.50%	ND	0.2

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	3.4	3.3	2.9%	0 - 30%
Toluene	1.6	1.6	0.0%	0 - 30%
Ethylbenzene	3.0	3.0	0.0%	0 - 30%
p,m-Xylene	37.4	36.9	1.3%	0 - 30%
o-Xylene	6.7	6.7	0.0%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	3.4	50.0	53.2	100%	39 - 150
Toluene	1.6	50.0	51.5	100%	46 - 148
Ethylbenzene	3.0	50.0	52.9	100%	32 - 160
p,m-Xylene	37.4	100.0	135.2	98%	46 - 148
o-Xylene	6.7	50.0	56.4	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 D317 - D324.**

Analyst

Review

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CHAIN OF CUSTODY RECORD

6005

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG / AMOCO	MARTNEZ GC G #1	
Sampler: NJV	Client No. 04034-10	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8021)						Remarks
												ALL SAMPLES
												PRESERV. - $HgCl_2$ & COOL
MW # 2R	5/29/98	1255	D318	WATER	2	✓						
MW # 3R	5/29/98	1325	D319	WATER	2	✓						
MW # 6R	5/29/98	1350	D320	WATER	2	✓						
MW # 7R	5/29/98	1430	D321	WATER	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	6/1/98	0710	Dennis P. Oquinn	6.1.98	0710
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Rf COC's 6004 · 6005
6007-6008

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Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : AMOCO PRODUCTION CO.

CHAIN-OF-CUSTODY # : 6219

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ENVIROTECH, INC.

Date : September 24, 1998

SAMPLER : N J V

Filename : 09-24-98.WK3

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)
2R	101.59	93.25	8.34	13.90	1100	7.3	1,300	2.75	-
3R	100.71	92.77	7.94	15.90	1205	7.1	3,300	4.00	-
6R	98.47	92.70	5.77	14.60	1150	7.5	1,200	4.50	-
7R	101.52	92.63	8.89	17.00	1130	7.5	1,100	4.00	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

Collected BTEX samples for all MW's listed above . MW # 3R poor recovery .

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #2R	Date Reported:	09-26-98
Chain of Custody:	6219	Date Sampled:	09-24-98
Laboratory Number:	D978	Date Received:	09-25-98
Sample Matrix:	Water	Date Analyzed:	09-26-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**0.5**	**1**	**0.2**
Toluene	**1.0**	**1**	**0.2**
Ethylbenzene	**0.2**	**1**	**0.2**
p,m-Xylene	**1.2**	**1**	**0.2**
o-Xylene	**0.8**	**1**	**0.1**
Total BTEX	**3.7**		

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: **Martinez GC G #1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #3R	Date Reported:	09-26-98
Chain of Custody:	6219	Date Sampled:	09-24-98
Laboratory Number:	D979	Date Received:	09-25-98
Sample Matrix:	Water	Date Analyzed:	09-26-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**713**	**10**	**1.8**
Toluene	**40.5**	**10**	**1.7**
Ethylbenzene	**529**	**10**	**1.5**
p,m-Xylene	**4,670**	**10**	**2.2**
o-Xylene	**1,310**	**10**	**1.0**
Total BTEX	**7,260**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #6R	Date Reported:	09-26-98
Chain of Custody:	6219	Date Sampled:	09-24-98
Laboratory Number:	D980	Date Received:	09-25-98
Sample Matrix:	Water	Date Analyzed:	09-26-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**226**	**10**	**1.8**
Toluene	**21.9**	**10**	**1.7**
Ethylbenzene	**250**	**10**	**1.5**
p,m-Xylene	**2,790**	**10**	**2.2**
o-Xylene	**662**	**10**	**1.0**
Total BTEX	**3,950**		

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: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #7R	Date Reported:	09-26-98
Chain of Custody:	6219	Date Sampled:	09-24-98
Laboratory Number:	D981	Date Received:	09-25-98
Sample Matrix:	Water	Date Analyzed:	09-26-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**23.5**	**1**	**0.2**
Toluene	**6.9**	**1**	**0.2**
Ethylbenzene	**8.9**	**1**	**0.2**
p,m-Xylene	**90.6**	**1**	**0.2**
o-Xylene	**20.1**	**1**	**0.1**
Total BTEX	**150**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

Analyst

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CHAIN OF CUSTODY RECORD

6219

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG / AMOCO	MARTINEZ GC G #1	
Sampler: REP	Client No. 04034-10	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8021)						Remarks
MW #2R	9/24/98	1100	D978	WATER	2	✓						PRESERV. - COOL
MW #3R	9/24/98	1205	D979	WATER	2	✓						PRESERV. - COOL
MW #6R	9/24/98	1150	D980	WATER	2	✓						PRESERV. - COOL
MW #7R	9/24/98	1130	D981	WATER	2	✓						PRESERV. - COOL

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	9/25/98	1509	[signature]	9/25/98	1509
[signature]	9/25/98	1527	[signature]	9.25.98	1527
Relinquished by: (Signature)			Received by: (Signature)		

Rp COC's 6218 - 6221

ENVIROTECH INC.

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Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

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:	09-26-BTEX QA/QC	Date Reported:	09-26-98
Laboratory Number:	D977	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	09-26-98
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	2.4349E-002	2.4428E-002	0.32%	ND	0.2
Toluene	1.1333E-002	1.1356E-002	0.20%	ND	0.2
Ethylbenzene	1.4295E-002	1.4355E-002	0.42%	ND	0.2
p,m-Xylene	1.1212E-002	1.1214E-002	0.02%	ND	0.2
o-Xylene	1.1772E-002	1.1807E-002	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	0.5	0.5	0.0%	0 - 30%
Toluene	0.5	0.5	0.0%	0 - 30%
Ethylbenzene	0.3	0.3	0.0%	0 - 30%
p,m-Xylene	1.5	1.5	0.0%	0 - 30%
o-Xylene	1.9	1.9	0.0%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	0.5	50.0	50.4	100%	39 - 150
Toluene	0.5	50.0	50.5	100%	46 - 148
Ethylbenzene	0.3	50.0	50.2	100%	32 - 160
p,m-Xylene	1.5	100	101	100%	46 - 148
o-Xylene	1.9	50.0	51.8	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 D977 - D985.**

Analyst

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BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : AMOCO PRODUCTION CO.

CHAIN-OF-CUSTODY # : 6431

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ENVIROTECH, INC.

Date : December 18, 1998

SAMPLER : N J V

Filename : 12-18-98.WK3

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)
2R	101.59	91.55	10.04	13.90	1225	7.7	1,100	2.00	-
3R	100.71	91.43	9.28	15.90	1345	7.7	2,500	3.25	-
6R	98.47	91.56	6.91	14.60	1315	7.3	1,300	3.75	-
7R	101.52	91.24	10.28	17.00	1255	7.3	2,000	3.50	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

Collected BTEX samples for all MW's listed above . MW # 3R poor recovery .

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #2 R	Date Reported:	12-22-98
Chain of Custody:	6431	Date Sampled:	12-18-98
Laboratory Number:	E415	Date Received:	12-21-98
Sample Matrix:	Water	Date Analyzed:	12-22-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**0.7**	**1**	**0.2**
Toluene	**0.5**	**1**	**0.2**
Ethylbenzene	**ND**	**1**	**0.2**
p,m-Xylene	**0.4**	**1**	**0.2**
o-Xylene	**ND**	**1**	**0.1**
Total BTEX	**1.6**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #3 R	Date Reported:	12-22-98
Chain of Custody:	6431	Date Sampled:	12-18-98
Laboratory Number:	E416	Date Received:	12-21-98
Sample Matrix:	Water	Date Analyzed:	12-22-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**257**	**1**	**0.2**
Toluene	**222**	**1**	**0.2**
Ethylbenzene	**143**	**1**	**0.2**
p,m-Xylene	**391**	**1**	**0.2**
o-Xylene	**270**	**1**	**0.1**
Total BTEX	**1,280**		

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: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #6 R	Date Reported:	12-22-98
Chain of Custody:	6431	Date Sampled:	12-18-98
Laboratory Number:	E417	Date Received:	12-21-98
Sample Matrix:	Water	Date Analyzed:	12-22-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**161**	**1**	**0.2**
Toluene	**34.0**	**1**	**0.2**
Ethylbenzene	**77.8**	**1**	**0.2**
p,m-Xylene	**389**	**1**	**0.2**
o-Xylene	**111**	**1**	**0.1**
Total BTEX	**773**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	04034-10
Sample ID:	MW #7 R	Date Reported:	12-22-98
Chain of Custody:	6431	Date Sampled:	12-18-98
Laboratory Number:	E418	Date Received:	12-21-98
Sample Matrix:	Water	Date Analyzed:	12-22-98
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**75.6**	**1**	**0.2**
Toluene	**18.6**	**1**	**0.2**
Ethylbenzene	**19.4**	**1**	**0.2**
p,m-Xylene	**164**	**1**	**0.2**
o-Xylene	**42.4**	**1**	**0.1**
Total BTEX	**320**		

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: **Martinez GC G #1.**

Analyst

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CHAIN OF CUSTODY RECORD

6431

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG / AMOCO	MARTINEZ GC G #1	
Sampler: REP	Client No. 0403410	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8021)						Remarks
MW #2R	12/18/98	1225	E415	WATER	2	✓						PRESERV. - HgCl2 & COOL
MW #3R	12/18/98	1345	E416	WATER	2	✓						"
MW #6R	12/18/98	1315	E417	WATER	2	✓						"
MW #7R	12/18/98	1255	E418	WATER	2	✓						"

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	12/21/98	0949	[signature]	12.21.98	0949
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

RP COC 6430-6431

ENVIROTECH INC.

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Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

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:	12-22-BTEX QA/QC	Date Reported:	12-22-98
Laboratory Number:	E413	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	12-22-98
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc.	Detect. Limit
Benzene	3.3006E-002	3.3112E-002	0.32%	ND	0.2
Toluene	1.3687E-002	1.3715E-002	0.20%	ND	0.2
Ethylbenzene	1.7638E-002	1.7712E-002	0.42%	ND	0.2
p,m-Xylene	1.5312E-002	1.5315E-002	0.02%	ND	0.2
o-Xylene	1.5548E-002	1.5595E-002	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	301	301	0.0%	0 - 30%
Toluene	44.2	44.5	0.7%	0 - 30%
Ethylbenzene	49.9	50.3	0.8%	0 - 30%
p,m-Xylene	140	146	4.2%	0 - 30%
o-Xylene	29.6	29.8	0.7%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	301	50.0	341	97%	39 - 150
Toluene	44.2	50.0	92.5	98%	46 - 148
Ethylbenzene	49.9	50.0	98.0	98%	32 - 160
p,m-Xylene	140	100.0	234	97%	46 - 148
o-Xylene	29.6	50.0	78.7	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 E413 - E418.**

Analyst

Review

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BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : AMOCO PRODUCTION CO.

CHAIN-OF-CUSTODY # : 6571

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ENVIROTECH, INC.

Date : February 15, 1999

SAMPLER : R E P

Filename : 02-15-99.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)
3R	100.71	89.94	10.77	15.90	1110	-	-	2.75	-
5R	100.31	90.01	10.30	16.00	1050	-	-	2.75	-
6R	98.47	89.95	8.52	14.60	1120	-	-	3.25	-
7R	101.52	89.84	11.68	17.00	1030	-	-	2.25	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

Collected BTEX samples for all MW's listed above . MW # 3R & # 6R poor recovery .

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW - 3 R	Date Reported:	02-16-99
Chain of Custody:	6571	Date Sampled:	02-15-99
Laboratory Number:	E646	Date Received:	02-15-99
Sample Matrix:	Water	Date Analyzed:	02-16-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**599**	**5**	**0.9**
Toluene	**102**	**5**	**0.8**
Ethylbenzene	**335**	**5**	**0.8**
p,m-Xylene	**1,850**	**5**	**1.1**
o-Xylene	**655**	**5**	**0.5**
Total BTEX	**3,540**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW - 5 R	Date Reported:	02-16-99
Chain of Custody:	6571	Date Sampled:	02-15-99
Laboratory Number:	E647	Date Received:	02-15-99
Sample Matrix:	Water	Date Analyzed:	02-16-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**32.3**	**5**	**0.9**
Toluene	**27.5**	**5**	**0.8**
Ethylbenzene	**60.2**	**5**	**0.8**
p,m-Xylene	**475**	**5**	**1.1**
o-Xylene	**113**	**5**	**0.5**
Total BTEX	**708**		

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: **Martinez GC G #1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW - 6 R	Date Reported:	02-16-99
Chain of Custody:	6571	Date Sampled:	02-15-99
Laboratory Number:	E648	Date Received:	02-15-99
Sample Matrix:	Water	Date Analyzed:	02-16-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**779**	**5**	**0.9**
Toluene	**17.8**	**5**	**0.8**
Ethylbenzene	**312**	**5**	**0.8**
p,m-Xylene	**1,630**	**5**	**1.1**
o-Xylene	**198**	**5**	**0.5**
Total BTEX	**2,940**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW - 7 R	Date Reported:	02-16-99
Chain of Custody:	6571	Date Sampled:	02-15-99
Laboratory Number:	E649	Date Received:	02-15-99
Sample Matrix:	Water	Date Analyzed:	02-16-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**97.5**	**1**	**0.2**
Toluene	**5.0**	**1**	**0.2**
Ethylbenzene	**13.8**	**1**	**0.2**
p,m-Xylene	**126**	**1**	**0.2**
o-Xylene	**32.7**	**1**	**0.1**
Total BTEX	**275**		

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: **Martinez GC G #1.**

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CHAIN OF CUSTODY RECORD

6571

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG / AMOCO	MARTINEZ GC. G# 1	
Sampler: REP	**Client No.** 403410	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8021)					Remarks
MW - 3R	2.15.99	1110	E646	WATER	2	✓					
MW - 5R	2.15.99	1150	E647	WATER	2	✓					
MW - 6R	2.15.99	1120	E648	WATER	2	✓					
MW - 7R	2.15.99	1030	E649	WATER	2	✓					
											SAMPLES PRESERVED
											$HgCl_2$ - COOL

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2.15.99	11:45	[signature]	2.15.99	11:45
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

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:	02-16-BTEX QA/QC	Date Reported:	02-16-99
Laboratory Number:	E646	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-16-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	7.0480E-002	7.0706E-002	0.32%	ND	0.9
Toluene	3.5438E-002	3.5445E-002	0.02%	ND	0.8
Ethylbenzene	4.3145E-002	4.3196E-002	0.12%	ND	0.8
p,m-Xylene	3.9965E-002	3.9973E-002	0.02%	ND	1.1
o-Xylene	3.9081E-002	3.9199E-002	0.30%	ND	0.5

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff	Accept Limit
Benzene	599	600	0.1%	0 - 30%
Toluene	102	103	0.9%	0 - 30%
Ethylbenzene	335	339	1.0%	0 - 30%
p,m-Xylene	1,850	1,930	4.3%	0 - 30%
o-Xylene	655	660	0.8%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	599	50.0	648	100%	39 - 150
Toluene	102	50.0	151	99%	46 - 148
Ethylbenzene	335	50.0	381	99%	32 - 160
p,m-Xylene	1,850	100.0	1,940	99%	46 - 148
o-Xylene	655	50.0	702	100%	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 E646 - E649.**

Analyst (signature)

Review Stacy W Sendler

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BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : AMOCO PRODUCTION CO.

CHAIN-OF-CUSTODY # : 6669

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ENVIROTECH, INC.

Date : May 24, 1999

SAMPLER : N J V

Filename : 05-24-99.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)
2R	101.59	91.96	9.63	13.90	-	-	-	-	-
3R	100.71	91.56	9.15	15.90	0900	7.1	2,900	3.50	-
5R	100.31	91.99	8.32	16.00	0800	7.4	1,200	3.75	-
6R	98.47	91.92	6.55	14.60	0930	6.7	1,200	4.00	-
7R	101.52	91.44	10.08	17.00	0830	7.2	1,500	3.50	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

Collected BTEX samples for all MW's listed above except MW # 2R . MW # 3R & # 6R poor recovery . BEI reclam. sys. shut down since 5 / 17 / 99 (no gas to compressor) .

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW # 3R	Date Reported:	05-25-99
Chain of Custody:	6669	Date Sampled:	05-24-99
Laboratory Number:	F377	Date Received:	05-24-99
Sample Matrix:	Water	Date Analyzed:	05-25-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**37.6**	**1**	**0.2**
Toluene	**12.4**	**1**	**0.2**
Ethylbenzene	**128**	**1**	**0.2**
p,m-Xylene	**741**	**1**	**0.2**
o-Xylene	**280**	**1**	**0.1**
Total BTEX	**1,200**		

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: **Martinez GC G #1.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW # 5R	Date Reported:	05-25-99
Chain of Custody:	6669	Date Sampled:	05-24-99
Laboratory Number:	F378	Date Received:	05-24-99
Sample Matrix:	Water	Date Analyzed:	05-25-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**56.5**	**1**	**0.2**
Toluene	**63.7**	**1**	**0.2**
Ethylbenzene	**9.2**	**1**	**0.2**
p,m-Xylene	**109**	**1**	**0.2**
o-Xylene	**24.8**	**1**	**0.1**
Total BTEX	**263**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW # 6R	Date Reported:	05-25-99
Chain of Custody:	6669	Date Sampled:	05-24-99
Laboratory Number:	F379	Date Received:	05-24-99
Sample Matrix:	Water	Date Analyzed:	05-25-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**397**	**10**	**1.8**
Toluene	**182**	**10**	**1.7**
Ethylbenzene	**80.9**	**10**	**1.5**
p,m-Xylene	**452**	**10**	**2.2**
o-Xylene	**388**	**10**	**1.0**
Total BTEX	**1,500**		

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: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW # 7R	Date Reported:	05-25-99
Chain of Custody:	6669	Date Sampled:	05-24-99
Laboratory Number:	F380	Date Received:	05-24-99
Sample Matrix:	Water	Date Analyzed:	05-25-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**2.8**	**1**	**0.2**
Toluene	**7.0**	**1**	**0.2**
Ethylbenzene	**5.2**	**1**	**0.2**
p,m-Xylene	**24.3**	**1**	**0.2**
o-Xylene	**7.8**	**1**	**0.1**
Total BTEX	**47.1**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**95 %**
	Bromofluorobenzene	**95 %**

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: **Martinez GC G #1.**

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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:	05-25-BTEX QA/QC	Date Reported:	05-25-99
Laboratory Number:	F377	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	05-25-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	[illegible]	[illegible]	[illegible] Accept. Range [illegible]	[illegible] Conc	[illegible] Limit
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	37.6	36.2	3.7%	0 - 30%
Toluene	12.4	12.0	3.2%	0 - 30%
Ethylbenzene	128	125	2.8%	0 - 30%
p,m-Xylene	741	746	0.6%	0 - 30%
o-Xylene	280	272	3.0%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	37.6	50.0	88.0	100%	39 - 150
Toluene	12.4	50.0	62.7	100%	46 - 148
Ethylbenzene	128	50.0	181	102%	32 - 160
p,m-Xylene	741	100.0	849	101%	46 - 148
o-Xylene	280	50.0	336	102%	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 F377 - F380.**

Analyst

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CHAIN OF CUSTODY RECORD

6669

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG / AMOCO	MARTINEZ GC G #1	
Sampler: NJV	Client No. 403410	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8021)						Remarks
												ALL SAMPLES PRESERV. HgCl2 & COOL
MW #3R	5/24/99	0900	F377	WATER	2	✓						
MW #5R	5/24/99	0800	F378	WATER	2	✓						
MW #6R	5/24/99	0930	F379	WATER	2	✓						
MW #7R	5/24/99	0830	F380	WATER	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	5/24/99	1334	Deana R. Ojeda	5.24.99	1334
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

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Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : AMOCO PRODUCTION CO.

CHAIN-OF-CUSTODY # : 6699

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ENVIROTECH, INC.

Date : August 23, 1999

Filename : 08-23-99.WK4

SAMPLER : N J V

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)
2R	101.59	92.63	8.96	13.90	-	-	-	-	-
3R	100.71	92.34	8.37	15.90	1130	7.0	3,200	3.75	-
5R	100.31	92.38	7.93	16.00	1200	7.3	1,000	4.00	-
6R	98.47	92.39	6.08	14.60	1230	7.1	1,000	4.25	-
7R	101.52	92.08	9.44	17.00	1100	7.0	800	3.75	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2".

Collected BTEX samples for all MW's listed above except MW # 2R . MW # 3R & # 6R poor recovery . BEI reclam. system not operating @ time of sampling .

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW #3R	Date Reported:	08-24-99
Chain of Custody:	6699	Date Sampled:	08-23-99
Laboratory Number:	F966	Date Received:	08-23-99
Sample Matrix:	Water	Date Analyzed:	08-24-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**11.2**	**2**	**0.4**
Toluene	**1.3**	**2**	**0.3**
Ethylbenzene	**9.2**	**2**	**0.3**
p,m-Xylene	**575**	**2**	**0.4**
o-Xylene	**238**	**2**	**0.2**
Total Xylene	**813**		
Total BTEX	**835**		

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: **Martinez GC G #1.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW #5R	Date Reported:	08-24-99
Chain of Custody:	6699	Date Sampled:	08-23-99
Laboratory Number:	F967	Date Received:	08-23-99
Sample Matrix:	Water	Date Analyzed:	08-24-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**14.2**	**1**	**0.2**
Toluene	**1.7**	**1**	**0.2**
Ethylbenzene	**12.0**	**1**	**0.2**
p,m-Xylene	**90.6**	**1**	**0.2**
o-Xylene	**20.9**	**1**	**0.1**
Total Xylene	**112**		
Total BTEX	**139**		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**95 %**
	Bromofluorobenzene	**95 %**

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: **Martinez GC G #1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW #6R	Date Reported:	08-24-99
Chain of Custody:	6699	Date Sampled:	08-23-99
Laboratory Number:	F968	Date Received:	08-23-99
Sample Matrix:	Water	Date Analyzed:	08-24-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**13.9**	**2**	**0.4**
Toluene	**17.4**	**2**	**0.3**
Ethylbenzene	**12.7**	**2**	**0.3**
p,m-Xylene	**411**	**2**	**0.4**
o-Xylene	**84.4**	**2**	**0.2**
Total Xylene	**495**		
Total BTEX	**539**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW #7R	Date Reported:	08-24-99
Chain of Custody:	6699	Date Sampled:	08-23-99
Laboratory Number:	F969	Date Received:	08-23-99
Sample Matrix:	Water	Date Analyzed:	08-24-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**1.8**	**1**	**0.2**
Toluene	**0.2**	**1**	**0.2**
Ethylbenzene	**0.4**	**1**	**0.2**
p,m-Xylene	**12.3**	**1**	**0.2**
o-Xylene	**2.5**	**1**	**0.1**
Total Xylene	**14.8**		
Total BTEX	**17.2**		

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: **Martinez GC G #1.**

Analyst

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CHAIN OF CUSTODY RECORD

6699

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG/AMOCO	MARTINEZ GC G#1	
Sampler: NJV	Client No. 403410	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8021)						Remarks
MW #3R	8/23/99	1130	F966	WATER	2+1	✓						ALL SAMPLES PRESERV. - $HgCl_2$ + COOL
MW #5R	8/23/99	1200	F967	WATER	2+1	✓						
MW #6R	8/23/99	1230	F968	WATER	2+1	✓						
MW #7R	8/23/99	1100	F969	WATER	2+1	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	8/23/99	1346	Debra P. Quinn	8.23.99	1346
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

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(505) 632-0615

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

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:	08-24-BTEX QA/QC	Date Reported:	08-24-99
Laboratory Number:	F964	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-24-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	3.6219E-001	3.6335E-001	0.32%	ND	0.2
Toluene	2.7867E-002	2.7872E-002	0.02%	ND	0.2
Ethylbenzene	4.1931E-002	4.1981E-002	0.12%	ND	0.2
p,m-Xylene	3.6569E-002	3.6576E-002	0.02%	ND	0.2
o-Xylene	3.1955E-002	3.2051E-002	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	1.0	1.0	0.0%	0 - 30%
Toluene	2.4	2.4	0.0%	0 - 30%
Ethylbenzene	0.2	0.2	0.0%	0 - 30%
p,m-Xylene	8.6	8.9	3.5%	0 - 30%
o-Xylene	2.7	2.7	0.0%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	1.0	50.0	51.1	100%	39 - 150
Toluene	2.4	50.0	52.5	100%	46 - 148
Ethylbenzene	0.2	50.0	50.2	100%	32 - 160
p,m-Xylene	8.6	100.0	109	100%	46 - 148
o-Xylene	2.7	50.0	52.8	100%	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 F964 - F969.**

Analyst

Review

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BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : AMOCO PRODUCTION CO.

CHAIN-OF-CUSTODY # : 7447

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ENVIROTECH, INC.

Date : December 6, 1999

SAMPLER : N J V

Filename : 12-06-99.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)
2R			-	13.90	-	-	-	-	-
3R	100.71	91.77	8.94	15.90	0900	7.2	3,000	3.50	-
5R	100.31	91.88	8.43	16.00	0930	7.3	1,100	3.75	-
6R	98.47	92.36	6.11	14.60	1000	7.2	1,000	4.25	-
7R	101.52	91.62	9.90	17.00	0830	7.0	700	3.50	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

Collected BTEX samples for all MW's listed above except MW # 2R . MW # 3R & # 6R poor recovery . BEI reclam. system not operating @ time of sampling . MW # 2R - top of casing destroyed . MW # 6R had possibly been tampered with , visual evidence revealed mud / solid material around the inside of the casing top and bailer left inside (black discoloration) . In addition, insects observed during first 2 bails with new disposable bailer .

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW # 3R	Date Reported:	12-07-99
Chain of Custody:	7447	Date Sampled:	12-06-99
Laboratory Number:	G538	Date Received:	12-06-99
Sample Matrix:	Water	Date Analyzed:	12-06-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**42.7**	**1**	**0.2**
Toluene	**119**	**1**	**0.2**
Ethylbenzene	**113**	**1**	**0.2**
p,m-Xylene	**1,100**	**1**	**0.2**
o-Xylene	**540**	**1**	**0.1**
Total Xylene	**1,640**		
Total BTEX	**1,910**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW # 5R	Date Reported:	12-07-99
Chain of Custody:	7447	Date Sampled:	12-06-99
Laboratory Number:	G539	Date Received:	12-06-99
Sample Matrix:	Water	Date Analyzed:	12-06-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**3.9**	**1**	**0.2**
Toluene	**21.6**	**1**	**0.2**
Ethylbenzene	**7.5**	**1**	**0.2**
p,m-Xylene	**30.7**	**1**	**0.2**
o-Xylene	**1.6**	**1**	**0.1**
Total Xylene	**32.3**		
Total BTEX	**65.3**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW # 6R	Date Reported:	12-07-99
Chain of Custody:	7447	Date Sampled:	12-06-99
Laboratory Number:	G540	Date Received:	12-06-99
Sample Matrix:	Water	Date Analyzed:	12-06-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**312**	**1**	**0.2**
Toluene	**213**	**1**	**0.2**
Ethylbenzene	**255**	**1**	**0.2**
p,m-Xylene	**1,270**	**1**	**0.2**
o-Xylene	**380**	**1**	**0.1**
Total Xylene	**1,650**		
Total BTEX	**2,430**		

ND - Parameter not detected at the stated detection limit.

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

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: **Martinez GC G #1.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / AMOCO	Project #:	403410
Sample ID:	MW # 7R	Date Reported:	12-07-99
Chain of Custody:	7447	Date Sampled:	12-06-99
Laboratory Number:	G541	Date Received:	12-06-99
Sample Matrix:	Water	Date Analyzed:	12-06-99
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	**14.7**	**1**	**0.2**
Toluene	**11.1**	**1**	**0.2**
Ethylbenzene	**11.0**	**1**	**0.2**
p,m-Xylene	**28.8**	**1**	**0.2**
o-Xylene	**42.6**	**1**	**0.1**
Total Xylene	**71.4**		
Total BTEX	**108**		

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: **Martinez GC G #1.**

Analyst

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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:	12-06-BTEX QA/QC	Date Reported:	12-07-99
Laboratory Number:	G538	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	12-06-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	1.0021E+000	1.0054E+000	0.32%	ND	0.2
Toluene	6.8221E-001	6.8234E-001	0.02%	ND	0.2
Ethylbenzene	6.1562E-002	6.1636E-002	0.12%	ND	0.2
p,m-Xylene	5.6170E-002	5.6181E-002	0.02%	ND	0.2
o-Xylene	5.1027E-002	5.1180E-002	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	42.7	41.1	3.7%	0 - 30%
Toluene	119	119	0.0%	0 - 30%
Ethylbenzene	113	110	2.8%	0 - 30%
p,m-Xylene	1,100	1,080	1.8%	0 - 30%
o-Xylene	540	524	2.9%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	42.7	50.0	93.0	100%	39 - 150
Toluene	119	50.0	172	102%	46 - 148
Ethylbenzene	113	50.0	165	101%	32 - 160
p,m-Xylene	1,100	100.0	1,200	100%	46 - 148
o-Xylene	540	50.0	600	102%	46 - 148

ND - Parameter not detected at the stated detection limit.

* - Administrative level 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 G538 - G545.**

Analyst

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CHAIN OF CUSTODY RECORD

7447

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG/ AMOCO	MARTINEZ GC G#1	
Sampler: NJV	Client No. 403410	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8021)						Remarks
MW #3R	12/6/99	0900	G538	WATER	2	✓						ALL SAMPLES PRESERV. - $HgCl_2$ & COOL
MW #5R	12/6/99	0930	G539	WATER	2	✓						
MW #6R	12/6/99	1000	G540	WATER	2	✓						
MW #7R	12/6/99	0830	G541	WATER	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson V[illegible]	12/6/99	1359	Christini M Walter	12.6.99	13:59
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

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Farmington, New Mexico 87401
(505) 632-0615

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : BP AMOCO

CHAIN-OF-CUSTODY # : 10360

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ON - SITE TECH.

Date : February 23, 2000

SAMPLER : N J V

Filename : 02-23-00.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)
3R	100.71	89.80	10.91	15.90	0930	7.3	2,900	2.50	-
5R	100.31	89.94	10.37	16.00	0920	8.7	1,000	2.75	-
6R	98.47	89.91	8.56	14.60	0910	8.6	1,300	3.00	-
7R	101.52	89.76	11.76	17.00	0900	8.4	1,100	2.50	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

Collected BTEX samples from all MW's listed above . MW # 3R & # 6R poor recovery . BEI reclam. system operating @ time of sampling . Collected true DTW measurements on 2 / 24 / 00 .

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *01-Mar-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0002053	**Client Sample ID:**	MW #3R
Lab ID:	0002053-01A **Matrix:** AQUEOUS	**Collection Date:**	2/23/2000 9:30:00 AM
Project:	BP Amoco - Martinez GC G#1	**COC Record:**	10360

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	5		µg/L	10	2/28/2000
Toluene	19	5		µg/L	10	2/28/2000
Ethylbenzene	28	5		µg/L	10	2/28/2000
m,p-Xylene	600	10		µg/L	10	2/28/2000
o-Xylene	310	5		µg/L	10	2/28/2000

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

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OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *01-Mar-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0002053	**Client Sample ID:**	MW #5R
Lab ID:	0002053-02A **Matrix:** AQUEOUS	**Collection Date:**	2/23/2000 9:20:00 AM
Project:	BP Amoco - Martinez GC G#1	**COC Record:**	10360

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	2/28/2000
Toluene	ND	0.5		µg/L	1	2/28/2000
Ethylbenzene	ND	0.5		µg/L	1	2/28/2000
m,p-Xylene	ND	1		µg/L	1	2/28/2000
o-Xylene	ND	0.5		µg/L	1	2/28/2000

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

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OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *01-Mar-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0002053	**Client Sample ID:**	MW #6R
Lab ID:	0002053-03A **Matrix:** AQUEOUS	**Collection Date:**	2/23/2000 9:10:00 AM
Project:	BP Amoco - Martinez GC G#1	**COC Record:**	10360

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	2/28/2000
Toluene	2.1	0.5		µg/L	1	2/28/2000
Ethylbenzene	1.8	0.5		µg/L	1	2/28/2000
m,p-Xylene	8.2	1		µg/L	1	2/28/2000
o-Xylene	ND	0.5		µg/L	1	2/28/2000

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

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OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *01-Mar-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0002053	**Client Sample ID:**	MW #7R
Lab ID:	0002053-04A **Matrix:** AQUEOUS	**Collection Date:**	2/23/2000 9:00:00 AM
Project:	BP Amoco - Martinez GC G#1	**COC Record:**	10360

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	2/28/2000
Toluene	ND	0.5		µg/L	1	2/28/2000
Ethylbenzene	ND	0.5		µg/L	1	2/28/2000
m,p-Xylene	ND	1		µg/L	1	2/28/2000
o-Xylene	ND	0.5		µg/L	1	2/28/2000

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

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10360

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 2/23/00

Page: 1 of 1

Purchase Order No.:	Project No.		
SEND INVOICE TO — Name	Nelson Velez	REPORT RESULTS TO — Name	same
Company	Blagg Engineering, Inc.	Dept.	Company	Title
Address	P.O. Box 87	Mailing Address	
City, State, Zip	Bloomfield, NM 87413	City, State, Zip	
		Telephone No. 632-1199	Telefax No. 632-3903

PROJECT LOCATION: BP Amoco - Martinez GC G #1

SAMPLER'S SIGNATURE: Nelson Velez

SAMPLE IDENTIFICATION	SAMPLE DATE	TIME	MATRIX	PRES.	Number of Containers	BTEX (8021)	LAB ID
MW # 3R	2/23/00	0930	WATER	COOL & HCl	2	✓	020403-01A
MW # 5R	2/23/00	0920	WATER	COOL & HCl	2	✓	-02A
MW # 6R	2/23/00	0910	WATER	COOL & HCl	2	✓	-03A
MW # 7R	2/23/00	0900	WATER	COOL & HCl	2	✓	-04A

Relinquished by: Nelson Velez	Date/Time 2/23/00 1300	Received by: David D. Martin	Date/Time 2/23/00 1305
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date 3/2/00

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

Special Instructions / Remarks:
Please Fax Results upon Analytical Completion

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

On Site Technologies, LTD.

Date: *01-Mar-00*

CLIENT: Blagg Engineering
Work Order: 0002053
Project: BP Amoco - Martinez GC G#1

QC SUMMARY REPORT

Method Blank

Sample ID: **MB1** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:

Client ID: **0002053** Run ID: **GC-1_000228A** SeqNo: **24562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.0832	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: *01-Mar-00*

CLIENT: Blagg Engineering
Work Order: 0002053
Project: BP Amoco - Martinez GC G#1

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **0002039-02AMS** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:

Client ID: **0002053** Run ID: **GC-1_000228A** SeqNo: **24563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	893.8	10	800	119.1	96.8%	73	126				
Ethylbenzene	1399	10	800	637.1	95.3%	88	113				
m,p-Xylene	6044	20	1600	4542	93.8%	83	112				
Methyl tert-Butyl Ether	812.5	20	800	35.51	97.1%	81	125				
o-Xylene	1389	10	800	617.7	96.5%	93	110				
Toluene	2642	10	800	1861	97.7%	76	126				

Sample ID: **0002039-02AMSD** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:

Client ID: **0002053** Run ID: **GC-1_000228A** SeqNo: **24564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	891.7	10	800	119.1	96.6%	73	126	893.8	0.2%	6	
Ethylbenzene	1394	10	800	637.1	94.6%	88	113	1399	0.4%	5	
m,p-Xylene	6019	20	1600	4542	92.3%	83	112	6044	0.4%	7	
Methyl tert-Butyl Ether	819.4	20	800	35.51	98.0%	81	125	812.5	0.8%	9	
o-Xylene	1390	10	800	617.7	96.6%	93	110	1389	0.0%	6	
Toluene	2634	10	800	1861	96.7%	76	126	2642	0.3%	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: *01-Mar-00*

CLIENT: Blagg Engineering
Work Order: 0002053
Project: BP Amoco - Martinez GC G#1

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:

Client ID: **0002053** Run ID: **GC-1_000228A** SeqNo: **24561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.38	0.5	40	0	100.9%	89	112				
Ethylbenzene	41.28	0.5	40	0	103.2%	93	112				
m,p-Xylene	78.41	1	80	0	98.0%	88	108				
Methyl tert-Butyl Ether	40.59	1	40	0	101.5%	87	115				
o-Xylene	41.17	0.5	40	0	102.9%	93	112				
Toluene	40.9	0.5	40	0.0832	102.0%	92	111				

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: *01-Mar-00*

CLIENT: Blagg Engineering
Work Order: 0002053
Project: BP Amoco - Martinez GC G#1

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0001** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:
Client ID: **0002053** Run ID: **GC-1_000228A** SeqNo: **24558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.18	0.5	20	0	100.9%	85	115				
Ethylbenzene	20.93	0.5	20	0	104.7%	85	115				
m,p-Xylene	39.52	1	40	0	98.8%	85	115				
Methyl tert-Butyl Ether	19.8	1	20	0	99.0%	85	115				
o-Xylene	20.84	0.5	20	0	104.2%	85	115				
Toluene	20.44	0.5	20	0	102.2%	85	115				
1,4-Difluorobenzene	89.71	0	100	0	89.7%	80	105				
4-Bromochlorobenzene	89.1	0	100	0	89.1%	78	108				
Fluorobenzene	88.62	0	100	0	88.6%	78	108				

Sample ID: **CCV2 BTEX_0001** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:
Client ID: **0002053** Run ID: **GC-1_000228A** SeqNo: **24559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.4	0.5	20	0	97.0%	85	115				
Ethylbenzene	20.04	0.5	20	0	100.2%	85	115				
m,p-Xylene	37.84	1	40	0	94.6%	85	115				
Methyl tert-Butyl Ether	20.64	1	20	0	103.2%	85	115				
o-Xylene	20.14	0.5	20	0	100.7%	85	115				
Toluene	19.68	0.5	20	0	98.4%	85	115				
1,4-Difluorobenzene	89.28	0	100	0	89.3%	80	105				
4-Bromochlorobenzene	89.66	0	100	0	89.7%	78	108				
Fluorobenzene	88.78	0	100	0	88.8%	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: 0002053
Project: BP Amoco - Martinez GC G#1

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0001** Batch ID: **GC-1_000228** Test Code: **SW8021B** Units: **µg/L** Analysis Date **2/28/2000** Prep Date:

Client ID: **0002053** Run ID: **GC-1_000228A** SeqNo: **24560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.89	0.5	40	0	97.2%	85	115				
Ethylbenzene	39.58	0.5	40	0	99.0%	85	115				
m,p-Xylene	75.31	1	80	0	94.1%	85	115				
Methyl tert-Butyl Ether	41.12	1	40	0	102.8%	85	115				
o-Xylene	40.19	0.5	40	0	100.5%	85	115				
Toluene	39.55	0.5	40	0	98.9%	85	115				
1,4-Difluorobenzene	89.13	0	100	0	89.1%	80	105				
4-Bromochlorobenzene	92.77	0	100	0	92.8%	78	108				
Fluorobenzene	87.92	0	100	0	87.9%	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

On Site Technologies, LTD.

Date: 01-Mar-00

CLIENT: Blagg Engineering
Work Order: 0002053
Project: BP Amoco - Martinez GC G#1
Test No: SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
0002039-02A	87.2	88	87.8
0002039-02AMS	87.3	89.3	86
0002039-02AMSD	87.1	89.6	86.4
0002039-03A	84.8	89.3	86.2
0002039-05A	86.3	87.9	86.5
0002039-06A	84.6	86	84.8
0002042-04A	88.4	89.7	86.8
0002043-02A	85.4	89.5	85.3
0002044-02A	91.2	90	90.4
0002048-01A	90	89.6	89
0002048-02A	91.4	91.1	90
0002050-01A	90.1	90.4	89
0002050-02A	90.4	89.4	89.2
0002050-03A	89.8	89.5	89.7
0002050-04A	90.7	89.9	89
0002051-01A	89.5	89.9	89.5
0002053-01A	89.1	88.1	89.6
0002053-02A	89.6	89.5	88.4
0002053-03A	89.6	88.6	89.7
0002053-04A	89.5	89.7	89.4
CCV1 BTEX_00010	89.7	89.1	88.6
CCV2 BTEX_00010	89.3	89.6	88.8
CCV3 BTEX_00010	89.1	92.8	87.9
LCS WATER	88.9	89.1	87.8
MB1	90.2	88.3	89.7

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	80-105
4BCBZ	=	4-Bromochlorobenzene	78-108
FLBZ	=	Fluorobenzene	78-108

*** Surrogate recovery outside acceptance limits**

BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : BP AMOCO

CHAIN-OF-CUSTODY # : 10582

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ON - SITE TECH.

Date : May 15, 2000

SAMPLER : N J V

Filename : 05-15-00.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)
3R	100.71	91.99	8.72	15.90	1335	7.1	3,000	3.50	-
5R	100.31	92.51	7.80	16.00	1205	8.3	1,100	4.00	-
6R	98.47	92.04	6.43	14.60	1235	8.3	1,400	4.00	-
7R	101.52	92.20	9.32	17.00	1305	8.1	1,300	3.75	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

Collected BTEX samples from all MW's listed above . MW # 3R & # 6R poor recovery . BEI reclam. system operating @ time of sampling . Collected true DTW measurements on 5 / 19 / 00 .

AMOCO GROUNDWATER MONITOR WELL LABORATORY RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

REVISED DATE: MAY 23, 2000
FILENAME: (G1-2Q-00.WK4) NJV

SAMPLE DATE	MONITOR WELL #	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
02-Feb-98	MW #2R	12.04	13.90	973	1,600	7.5		6.4	19.2	2.5	18.7
29-May-98		10.17			1,100	7.0		0.4	ND	0.2	4.8
24-Sep-98		8.34			1,300	7.3		0.5	1.0	0.2	2.0
18-Dec-98		10.04			1,100	7.7		0.7	0.5	ND	0.4
02-Feb-98	MW #3R	11.40	15.90	1895	2,700	7.4		173	1690	302	950
29-May-98		9.74			3,000	7.2		665	230	484	5760
24-Sep-98		7.94			3,300	7.1		713	40.5	529	5980
18-Dec-98		9.28			2,500	7.7		257	222	143	661
15-Feb-99		10.77						599	102	335	2505
24-May-99		9.15			2,900	7.1		37.6	12.4	128	1021
23-Aug-99		8.37			3,200	7.0		11.2	1.3	9.2	813
06-Dec-99		8.94			3,000	7.2		42.7	119	113	1640
23-Feb-00		10.91			2,900	7.3		ND	19.0	28.0	910
15-May-00		8.72			3,000	7.1		ND	ND	5.8	66
15-Feb-99	MW #5R	10.30	16.00					32.3	27.5	60.2	588
24-May-99		8.32			1,200	7.4		56.5	63.7	9.2	133.8
23-Aug-99		7.93			1,000	7.3		14.2	1.7	12.0	111.5
06-Dec-99		8.43			1,100	7.3		3.9	21.6	7.5	32.3
23-Feb-00		10.37			1,000	8.7		ND	ND	ND	ND
15-May-00		7.80			1,100	8.3		ND	ND	ND	ND
02-Feb-98	MW #6R	9.17	14.60	737	1,400	7.2		2620	12.5	787	3900
29-May-98		7.43			1,400	7.2		59.6	ND	16.5	393.5
24-Sep-98		5.77			1,200	7.5		226	21.9	250	3452
18-Dec-98		6.91			1,300	7.3		161	34.0	77.8	500
15-Feb-99		8.52						779	17.8	312	1828
24-May-99		6.55			1,200	6.7		397	182	80.9	840
23-Aug-99		6.08			1,000	7.1		13.9	17.4	12.7	495.4
06-Dec-99		6.11			1,000	7.2		312	213	255	1650
23-Feb-00		8.56			1,300	8.6		ND	2.1	1.8	8.2
15-May-00		6.43			1,400	8.3		ND	ND	ND	3.8
02-Feb-98	MW #7R	12.29	17.00	1513	2400	7.2		236	35.9	208	3215
29-May-98		10.52			1200	7.2		213	19.2	58.6	1173
24-Sep-98		8.89			1100	7.5		23.5	6.9	8.9	110.7
18-Dec-98		10.28			2000	7.3		75.6	18.6	19.4	206.4
15-Feb-99		11.68						97.5	5.0	13.8	158.7
24-May-99		10.08			1,500	7.2		2.8	7.0	5.2	32.1
23-Aug-99		9.44			800	7.0		1.8	0.2	0.4	14.8
06-Dec-99		9.90			700	7.0		14.7	11.1	11	71.4
23-Feb-00		11.76			1,100	8.4		ND	ND	ND	ND
15-May-00		9.32			1,300	8.1		ND	ND	0.5	ND

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ON SITE TECHNOLOGIES, LTD.

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FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *22-May-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0005031	**Client Sample ID:**	MW #3R
Lab ID:	0005031-01A **Matrix:** AQUEOUS	**Collection Date:**	5/15/2000 1:35:00 PM -
Project:	BP Amoco - Martinez GC G#1	**COC Record:**	10582

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	5/20/2000
Toluene	ND	0.5		µg/L	1	5/20/2000
Ethylbenzene	5.8	0.5		µg/L	1	5/20/2000
m,p-Xylene	39	1		µg/L	1	5/20/2000
o-Xylene	27	0.5		µg/L	1	5/20/2000

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

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LAB: (505) 325-1556
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ANALYTICAL REPORT

Date: *22-May-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0005031	**Client Sample ID:**	MW #5R
Lab ID:	0005031-02A **Matrix:** AQUEOUS	**Collection Date:**	5/15/2000 12:05:00 PM
Project:	BP Amoco - Martinez GC G#1	**COC Record:**	10582

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	5/20/2000
Toluene	ND	0.5		µg/L	1	5/20/2000
Ethylbenzene	ND	0.5		µg/L	1	5/20/2000
m,p-Xylene	ND	1		µg/L	1	5/20/2000
o-Xylene	ND	0.5		µg/L	1	5/20/2000

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

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ANALYTICAL REPORT

Date: *22-May-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0005031	**Client Sample ID:**	MW #6R
Lab ID:	0005031-03A **Matrix:** AQUEOUS	**Collection Date:**	5/15/2000 12:35:00 PM
Project:	BP Amoco - Martinez GC G#1	**COC Record:**	10582

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	5/20/2000
Toluene	ND	0.5		µg/L	1	5/20/2000
Ethylbenzene	ND	0.5		µg/L	1	5/20/2000
m,p-Xylene	3.8	1		µg/L	1	5/20/2000
o-Xylene	ND	0.5		µg/L	1	5/20/2000

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

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ON SITE TECHNOLOGIES, LTD.

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

ANALYTICAL REPORT

Date: *22-May-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0005031	**Client Sample ID:**	MW #7R
Lab ID:	0005031-04A **Matrix:** AQUEOUS	**Collection Date:**	5/15/2000 1:05:00 PM
Project:	BP Amoco - Martinez GC G#1	**COC Record:**	10582

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	5/20/2000
Toluene	ND	0.5		µg/L	1	5/20/2000
Ethylbenzene	0.5	0.5		µg/L	1	5/20/2000
m,p-Xylene	ND	1		µg/L	1	5/20/2000
o-Xylene	ND	0.5		µg/L	1	5/20/2000

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

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10582

CHAIN OF CUSTODY RECORD

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 5/15/00

Page: 1 of 1

Purchase Order No.:	Project No.
SEND INVOICE TO Name	[illegible]
Company	[illegible] Inc.
Dept.	
Address	P.O. Box 87
City, State, Zip	[illegible], NM [illegible]
REPORT RESULTS TO Name	[illegible]
Title	
Company	Same
Mailing Address	
City, State, Zip	
Telephone No.	[illegible]-1199
Telefax No.	632-3903

PROJECT LOCATION: [illegible]

SAMPLER'S SIGNATURE: [signature]

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	SAMPLE PRES.	Number of Containers	BTEX (8021)								LAB ID
MW #3R	5/15/00	1335	Water	HCl Cool	2	✓								[illegible]-01A
MW #5R	5/15/00	1205	Water	HCl Cool	2	✓								-02A
MW #6R	5/15/00	1235	Water	HCl Cool	2	✓								-03A
MW #7R	5/15/00	1305	Water	HCl Cool	2	✓								-04A

Relinquished by: [signature]	Date/Time 5/15/00 1550	Received by: David O Martin	Date/Time 5/15/00 15[illegible]
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

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

Special Instructions / Remarks:

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

On Site Technologies, LTD.

Date: *22-May-00*

CLIENT: Blagg Engineering
Work Order: 0005031
Project: BP Amoco - Martinez GC G#1

QC SUMMARY REPORT

Method Blank

Sample ID: **MB1** Batch ID: **GC-1_000520** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/20/2000** Prep Date:

Client ID: **0005031** Run ID: **GC-1_000520A** SeqNo: **27838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.0893	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: *22-May-00*

CLIENT: Blagg Engineering
Work Order: 0005031
Project: BP Amoco - Martinez GC G#1

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_000520** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/20/2000** Prep Date:

Client ID: **0005031** Run ID: **GC-1_000520A** SeqNo: **27837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.46	0.5	40	0	106.1%	89	112				
Ethylbenzene	42.76	0.5	40	0	106.9%	93	112				
m,p-Xylene	79.8	1	80	0	99.7%	88	108				
Methyl tert-Butyl Ether	43.17	1	40	0	107.9%	87	115				
o-Xylene	42.04	0.5	40	0	105.1%	93	112				
Toluene	42.16	0.5	40	0.0893	105.2%	92	111				

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: *22-May-00*

CLIENT: Blagg Engineering
Work Order: 0005031
Project: BP Amoco - Martinez GC G#1

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0004** Batch ID: **GC-1_000520** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/20/2000** Prep Date:

Client ID: **0005031** Run ID: **GC-1_000520A** SeqNo: **27834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	22.59	0.5	20	0	112.9%	85	115				
Ethylbenzene	22.45	0.5	20	0	112.3%	85	115				
m,p-Xylene	41.89	1	40	0	104.7%	85	115				
Methyl tert-Butyl Ether	22.37	1	20	0	111.8%	85	115				
o-Xylene	22.1	0.5	20	0	110.5%	85	115				
Toluene	21.9	0.5	20	0	109.5%	85	115				
1,4-Difluorobenzene	88.27	0	100	0	88.3%	80	105				
4-Bromochlorobenzene	94.25	0	100	0	94.3%	78	108				
Fluorobenzene	84.19	0	100	0	84.2%	78	108				

Sample ID: **CCV2 BTEX_0004** Batch ID: **GC-1_000520** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/20/2000** Prep Date:

Client ID: **0005031** Run ID: **GC-1_000520A** SeqNo: **27835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.55	0.5	20	0	107.7%	85	115				
Ethylbenzene	21.85	0.5	20	0	109.2%	85	115				
m,p-Xylene	40.65	1	40	0	101.6%	85	115				
Methyl tert-Butyl Ether	22.5	1	20	0	112.5%	85	115				
o-Xylene	21.57	0.5	20	0	107.8%	85	115				
Toluene	21.37	0.5	20	0	106.9%	85	115				
1,4-Difluorobenzene	87.86	0	100	0	87.9%	80	105				
4-Bromochlorobenzene	95.32	0	100	0	95.3%	78	108				
Fluorobenzene	83.48	0	100	0	83.5%	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: 0005031
Project: BP Amoco - Martinez GC G#1

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0004** Batch ID: **GC-1_000520** Test Code: **SW8021B** Units: **µg/L** Analysis Date **5/20/2000** Prep Date:

Client ID: **0005031** Run ID: **GC-1_000520A** SeqNo: **27836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.16	0.5	40	0	102.9%	85	115				
Ethylbenzene	41.2	0.5	40	0	103.0%	85	115				
m,p-Xylene	76.73	1	80	0	95.9%	85	115				
Methyl tert-Butyl Ether	43.95	1	40	0	109.9%	85	115				
o-Xylene	40.74	0.5	40	0	101.9%	85	115				
Toluene	40.75	0.5	40	0	101.9%	85	115				
1,4-Difluorobenzene	87.67	0	100	0	87.7%	80	105				
4-Bromochlorobenzene	94.93	0	100	0	94.9%	78	108				
Fluorobenzene	83.13	0	100	0	83.1%	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

On Site Technologies, LTD.

Date: 22-May-00

CLIENT: Blagg Engineering
Work Order: 0005031
Project: BP Amoco - Martinez GC G#1
Test No: SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
0005018-01A	86.2	96.2	81.3
0005020-04A	88.4	93.9	84.4
0005022-01A	88.8	94.4	84.4
0005022-03A	86.6	95.1	82.1
0005022-03AMS	86.4	95.4	82.3
0005022-03AMSD	86.3	95.4	82.2
0005022-06A	83.2	93.4	79.3
0005022-08A	87.5	92.8	83.1
0005023-01A	86.5	94.1	82.6
0005031-01A	87	94.3	83.8
0005031-02A	87.8	94.7	83.9
0005031-03A	87.9	95.1	83.8
0005031-04A	87.6	94.6	83.7
0005032-01A	88	95	83.5
0005032-02A	88	94.6	84
0005036-01A	88.3	94.9	84.6
0005036-02A	88.3	95.1	84.1
0005036-03A	85.1	93.1	81.6
0005036-04A	88.3	95.1	84.2
0005036-05A	87.7	94.9	83.5
0005049-03A	87.6	92.9	83.3
0005049-05A	88.5	95	84.5
CCV1 BTEX_00040	88.3	94.2	84.2
CCV2 BTEX_00040	87.8	95.3	83.5
CCV3 BTEX_00040	87.7	94.9	83.1
LCS WATER	87.7	95	83
MB1	88.5	92.1	83.8

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	80-105
4BCBZ	=	4-Bromochlorobenzene	78-108
FLBZ	=	Fluorobenzene	78-108

*** Surrogate recovery outside acceptance limits**

BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : BP AMOCO

CHAIN-OF-CUSTODY # : 10765

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ON - SITE TECH.

Date : August 24, 2000

SAMPLER : N J V

Filename : 08-24-00.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)
3R	100.71	93.04	7.67	15.90	1455	7.3	3,400	4.00	-
5R	100.31	93.45	6.86	16.00	1325	8.0	1,400	4.50	-
6R	98.47	93.19	5.28	14.60	1355	8.1	1,300	4.50	-
7R	101.52	93.09	8.43	17.00	1425	7.9	900	4.25	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

Collected BTEX samples from all MW's listed above . MW # 3R & # 6R fair recovery . BEI reclam. system operating @ time of sampling . Collected true DTW measurements on 8 / 25 / 00 .

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

ANALYTICAL REPORT

Date: *28-Aug-00*

Client:	Blagg Engineering	**Client Sample Info:**	BP - Martinez GC G #1
Work Order:	0008042	**Client Sample ID:**	MW #3R
Lab ID:	0008042-01A **Matrix:** AQUEOUS	**Collection Date:**	8/24/2000 2:55:00 PM
Project:	BP Martinez GC G #1	**COC Record:**	10765

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	2.5		µg/L	5	8/24/2000
Toluene	ND	2.5		µg/L	5	8/24/2000
Ethylbenzene	ND	2.5		µg/L	5	8/24/2000
m,p-Xylene	24	5		µg/L	5	8/24/2000
o-Xylene	11	2.5		µg/L	5	8/24/2000

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

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LAB: (505) 325-1556
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ANALYTICAL REPORT

Date: *28-Aug-00*

Client:	Blagg Engineering	**Client Sample Info:**	BP - Martinez GC G #1
Work Order:	0008042	**Client Sample ID:**	MW #5R
Lab ID:	0008042-02A **Matrix:** AQUEOUS	**Collection Date:**	8/24/2000 1:25:00 PM
Project:	BP Martinez GC G #1	**COC Record:**	10765

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	8/24/2000
Toluene	ND	0.5		µg/L	1	8/24/2000
Ethylbenzene	ND	0.5		µg/L	1	8/24/2000
m,p-Xylene	ND	1		µg/L	1	8/24/2000
o-Xylene	ND	0.5		µg/L	1	8/24/2000

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

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

ANALYTICAL REPORT

Date: *28-Aug-00*

Client:	Blagg Engineering	**Client Sample Info:**	BP - Martinez GC G #1
Work Order:	0008042	**Client Sample ID:**	MW #6R
Lab ID:	0008042-03A **Matrix:** AQUEOUS	**Collection Date:**	8/24/2000 1:55:00 PM
Project:	BP Martinez GC G #1	**COC Record:**	10765

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	8/24/2000
Toluene	ND	0.5		µg/L	1	8/24/2000
Ethylbenzene	4.7	0.5		µg/L	1	8/24/2000
m,p-Xylene	88	1		µg/L	1	8/24/2000
o-Xylene	ND	0.5		µg/L	1	8/24/2000

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

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

ANALYTICAL REPORT

Date: *28-Aug-00*

Client:	Blagg Engineering	**Client Sample Info:**	BP - Martinez GC G #1
Work Order:	0008042	**Client Sample ID:**	MW #7R
Lab ID:	0008042-04A **Matrix:** AQUEOUS	**Collection Date:**	8/24/2000 2:25:00 PM
Project:	BP Martinez GC G #1	**COC Record:**	10765

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	8/24/2000
Toluene	ND	0.5		µg/L	1	8/24/2000
Ethylbenzene	ND	0.5		µg/L	1	8/24/2000
m,p-Xylene	ND	1		µg/L	1	8/24/2000
o-Xylene	ND	0.5		µg/L	1	8/24/2000

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

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10765

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 8/24/00

Page: 1 of 1

Purchase Order No.:	Project No.		
SEND INVOICE TO: Name	T. RUCC	REPORT RESULTS TO: Name	NELSON VELEZ / Title
Company	RUCC ENERGY, INC. / Dept.	Company	SAME
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No.	632-1199 / Telefax No. 632-3903.

PROJECT LOCATION: BP - MARTINEZ GC G #1

SAMPLER'S SIGNATURE: Nelson Velez

SAMPLE IDENTIFICATION	SAMPLE DATE	TIME	MATRIX	PRES.	Number of Containers	ANALYSIS REQUESTED: WATER (8021)	LAB ID
MW # 3R	8/24/00	1455	WATER	HCl & COOL	2	✓	008412 OIN
MW # 5R	8/24/00	1325	WATER	HCl & COOL	2	✓	OCA
MW # 6R	8/24/00	1355	WATER	HCl & COOL	2	✓	OIN
MW # 7R	8/24/00	1425	WATER	HCl & COOL	2	✓	OIN

Relinquished by: Nelson Velez	Date/Time 8/24/00 1534	Received by: David O. Martin	Date/Time 8/24/00 1535
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

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

Special Instructions / Remarks:

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

On Site Technologies, LTD.

Date: *28-Aug-00*

CLIENT: Blagg Engineering
Work Order: 0008042
Project: BP Martinez GC G #1

QC SUMMARY REPORT

Method Blank

Sample ID: **MB1** Batch ID: **GC-1_000824** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/24/2000** Prep Date:

Client ID: **0008042** Run ID: **GC-1_000824A** SeqNo: **30799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	.2677	1									J
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	ND	0.5									

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: *28-Aug-00*

CLIENT: Blagg Engineering
Work Order: 0008042
Project: BP Martinez GC G #1

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **0008040-01AMS** Batch ID: **GC-1_000824** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/24/2000** Prep Date:

Client ID: **0008042** Run ID: **GC-1_000824A** SeqNo: **30800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	403	5	400	0	100.7%	88	112				
Ethylbenzene	412	5	400	0	103.0%	86	113				
m,p-Xylene	817.5	10	800	2.293	101.9%	85	108				
Methyl tert-Butyl Ether	387.5	10	400	0	96.9%	86	117				
o-Xylene	409.4	5	400	0	102.3%	92	110				
Toluene	407.5	5	400	0	101.9%	88	116				

Sample ID: **0008040-01AMSD** Batch ID: **GC-1_000824** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/24/2000** Prep Date:

Client ID: **0008042** Run ID: **GC-1_000824A** SeqNo: **30801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	397.4	5	400	0	99.3%	88	112	403	1.4%	6	
Ethylbenzene	405.5	5	400	0	101.4%	86	113	412	1.6%	6	
m,p-Xylene	805	10	800	2.293	100.3%	85	108	817.5	1.5%	6	
Methyl tert-Butyl Ether	388	10	400	0	97.0%	86	117	387.5	0.1%	7	
o-Xylene	404	5	400	0	101.0%	92	110	409.4	1.3%	6	
Toluene	400.7	5	400	0	100.2%	88	116	407.5	1.7%	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: *28-Aug-00*

CLIENT: Blagg Engineering
Work Order: 0008042
Project: BP Martinez GC G #1

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_000824** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/24/2000** Prep Date:

Client ID: **0008042** Run ID: **GC-1_000824A** SeqNo: **30798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.66	0.5	40	0	101.6%	96	111				
Ethylbenzene	41.75	0.5	40	0	104.4%	96	111				
m,p-Xylene	83.14	1	80	0.2677	103.6%	92	105				
Methyl tert-Butyl Ether	39.68	1	40	0	99.2%	93	113				
o-Xylene	41.51	0.5	40	0	103.8%	97	110				
Toluene	41.25	0.5	40	0	103.1%	97	109				

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: *28-Aug-00*

CLIENT: Blagg Engineering
Work Order: 0008042
Project: BP Martinez GC G #1

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0007** Batch ID: **GC-1_000824** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/24/2000** Prep Date:

Client ID: **0008042** Run ID: **GC-1_000824A** SeqNo: **30795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.12	0.5	20	0	100.6%	85	115				
Ethylbenzene	20.73	0.5	20	0	103.6%	85	115				
m,p-Xylene	41.54	1	40	0	103.8%	85	115				
Methyl tert-Butyl Ether	19.75	1	20	0	98.8%	85	115				
o-Xylene	20.68	0.5	20	0	103.4%	85	115				
Toluene	20.4	0.5	20	0	102.0%	85	115				
1,4-Difluorobenzene	88.33	0	100	0	88.3%	79	101				
4-Bromochlorobenzene	89.11	0	100	0	89.1%	78	99				
Fluorobenzene	87.85	0	100	0	87.9%	76	103				

Sample ID: **CCV2 BTEX_0007** Batch ID: **GC-1_000824** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/24/2000** Prep Date:

Client ID: **0008042** Run ID: **GC-1_000824A** SeqNo: **30796**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.08	0.5	20	0	100.4%	85	115				
Ethylbenzene	20.59	0.5	20	0	102.9%	85	115				
m,p-Xylene	41.12	1	40	0	102.8%	85	115				
Methyl tert-Butyl Ether	19.55	1	20	0	97.8%	85	115				
o-Xylene	20.6	0.5	20	0	103.0%	85	115				
Toluene	20.28	0.5	20	0	101.4%	85	115				
1,4-Difluorobenzene	88.36	0	100	0	88.4%	79	101				
4-Bromochlorobenzene	90.14	0	100	0	90.1%	78	99				
Fluorobenzene	87.7	0	100	0	87.7%	76	103				

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: 0008042
Project: BP Martinez GC G #1

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0007** Batch ID: **GC-1_000824** Test Code: **SW8021B** Units: **µg/L** Analysis Date **8/24/2000** Prep Date:

Client ID: **0008042** Run ID: **GC-1_000824A** SeqNo: **30797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.61	0.5	20	0	103.0%	85	115				
Ethylbenzene	21.14	0.5	20	0	105.7%	85	115				
m,p-Xylene	42.25	1	40	0	105.6%	85	115				
Methyl tert-Butyl Ether	19.99	1	20	0	99.9%	85	115				
o-Xylene	21.12	0.5	20	0	105.6%	85	115				
Toluene	20.92	0.5	20	0	104.6%	85	115				
1,4-Difluorobenzene	88.62	0	100	0	88.6%	79	101				
4-Bromochlorobenzene	89.11	0	100	0	89.1%	78	99				
Fluorobenzene	87.92	0	100	0	87.9%	76	103				

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: 28-Aug-00

CLIENT: Blagg Engineering
Work Order: 0008042
Project: BP Martinez GC G #1
Test No: SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
0008040-01A	88.1	88.1	87.5
0008040-01AMS	87.9	89.7	87.4
0008040-01AMSD	87.8	89.9	87.6
0008040-02A	89.7	89.2	88.5
0008040-03A	88.9	88.8	88.3
0008040-04A	88.7	89.7	88.5
0008040-05A	88.7	89.1	88.7
0008042-01A	89	88.8	88.1
0008042-02A	89.1	89.5	88.2
0008042-03A	88.3	89.6	89.1
0008042-04A	88.4	88.6	87.6
CCV1 BTEX_00070	88.3	89.1	87.8
CCV2 BTEX_00070	88.4	90.1	87.7
CCV3 BTEX_00070	88.6	89.1	87.9
LCS WATER	88	89.5	87.5
MB1	89.1	88.4	88.5

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	79-101
4BCBZ	=	4-Bromochlorobenzene	78-99
FLBZ	=	Fluorobenzene	76-103

*** Surrogate recovery outside acceptance limits**

BLAGG ENGINEERING, INC.

MONITOR WELL SAMPLING DATA

CLIENT : BP AMOCO

CHAIN-OF-CUSTODY # : 10774

MARTINEZ GC G # 1
UNIT A, SEC. 24, T29N, R10W

LABORATORY (S) USED : ON - SITE TECH.

Date : November 28, 2000

SAMPLER : N J V

Filename : 11-28-00.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)
3R	100.71	90.95	9.76	15.90	1420	7.1	5,000	3.25	-
5R	100.31	91.32	8.99	16.00	1255	8.4	1,100	3.75	-
6R	98.47	91.24	7.23	14.60	1320	8.5	1,300	4.00	-
7R	101.52	91.13	10.39	17.00	1335	8.3	800	4.00	-

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

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

Ideally a minimum of three (3) wellbore volumes:

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

2 bails per foot - small teflon bailer.

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

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

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

Comments or note well diameter if not standard 2 ".

Collected BTEX samples from all MW's listed above . MW # 3R & # 6R fair recovery . BEI reclam. system operating @ time of sampling . Collected true DTW measurements on 11 / 29 / 00 .

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

ON SITE TECHNOLOGIES, LTD.

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

ANALYTICAL REPORT

Date: *15-Dec-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0011048	**Client Sample ID:**	MW #3R
Lab ID:	0011048-01A **Matrix:** AQUEOUS	**Collection Date:**	11/28/2000 2:20:00 PM
Project:	BP - Martinez GC G#1	**COC Record:**	10774

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DC**
Benzene	ND	0.5		µg/L	1	12/5/2000
Toluene	ND	0.5		µg/L	1	12/5/2000
Ethylbenzene	1.5	0.5		µg/L	1	12/5/2000
m,p-Xylene	10	1		µg/L	1	12/5/2000
o-Xylene	7.2	0.5		µg/L	1	12/5/2000

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

P.O. BOX 2606 • FARMINGTON, NM 87499
EMAIL: ONSITE@ONSITELTD.COM

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

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

ANALYTICAL REPORT

Date: *15-Dec-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0011048	**Client Sample ID:**	MW #5R
Lab ID:	0011048-02A **Matrix:** AQUEOUS	**Collection Date:**	11/28/2000 12:55:00 PM
Project:	BP - Martinez GC G#1	**COC Record:**	10774

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DC**
Benzene	ND	0.5		µg/L	1	12/5/2000
Toluene	ND	0.5		µg/L	1	12/5/2000
Ethylbenzene	ND	0.5		µg/L	1	12/5/2000
m,p-Xylene	ND	1		µg/L	1	12/5/2000
o-Xylene	ND	0.5		µg/L	1	12/5/2000

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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EMAIL: ONSITE@ONSITELTD.COM

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

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FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *15-Dec-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0011048	**Client Sample ID:**	MW #6R
Lab ID:	0011048-03A **Matrix:** AQUEOUS	**Collection Date:**	11/28/2000 1:20:00 PM
Project:	BP - Martinez GC G#1	**COC Record:**	10774

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DC**
Benzene	ND	0.5		µg/L	1	12/5/2000
Toluene	ND	0.5		µg/L	1	12/5/2000
Ethylbenzene	1.7	0.5		µg/L	1	12/5/2000
m,p-Xylene	22	1		µg/L	1	12/5/2000
o-Xylene	1.1	0.5		µg/L	1	12/5/2000

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
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- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

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LAB: (505) 325-1556
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ANALYTICAL REPORT

Date: *15-Dec-00*

Client:	Blagg Engineering	**Client Sample Info:**	Martinez GC G#1
Work Order:	0011048	**Client Sample ID:**	MW #7R
Lab ID:	0011048-04A **Matrix:** AQUEOUS	**Collection Date:**	11/28/2000 1:35:00 PM
Project:	BP - Martinez GC G#1	**COC Record:**	10774

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DC**
Benzene	ND	0.5		µg/L	1	12/5/2000
Toluene	ND	0.5		µg/L	1	12/5/2000
Ethylbenzene	ND	0.5		µg/L	1	12/5/2000
m,p-Xylene	ND	1		µg/L	1	12/5/2000
o-Xylene	ND	0.5		µg/L	1	12/5/2000

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

P.O. BOX 2606 • FARMINGTON, NM 87499
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10774

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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

Date: 11/28/00

Page: 1 of 1

Purchase Order No.:	Project No.		
SEND INVOICE TO Name: JEFF BLAGG		**REPORT RESULTS TO** Name: NELSON VELEZ	Title
Company: BLAGG ENGINEERING, INC.	Dept.	Company: SAME	
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No. 632-1199	Telefax No. 632-3903

PROJECT LOCATION: KP - MARMEL GC G #1

SAMPLER'S SIGNATURE: Nelson V

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	SAMPLE PRES.	Number of Containers	BTEX (8021)									LAB ID
MW #3R	11/28/00	1420	WATER	HCl & COOL	2	✓									[illegible]
MW #5R	11/28/00	1255	WATER	HCl & COOL	2	✓									[illegible]
MW #6R	11/28/00	1320	WATER	HCl & COOL	2	✓									[illegible]
MW #7R	11/28/00	1335	WATER	HCl & COOL	2	✓									[illegible]

Relinquished by: Nelson V	Date/Time 11/28/00 1515	Received by: David O. Martin	Date/Time 11/28/01 1516
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Method of Shipment:		Rush / 24-48 Hours / 10 Working Days / By Date	

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

Special Instructions / Remarks:

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

On Site Technologies, LTD.

Date: *15-Dec-00*

CLIENT: Blagg Engineering
Work Order: 0011048
Project: BP - Martinez GC G#1

QC SUMMARY REPORT
Method Blank

Sample ID: **MB1** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:

Client ID: **0011048** Run ID: **GC-1_001205A** SeqNo: **33206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	.0771	0.5									J
m,p-Xylene	.2174	1									J
Methyl tert-Butyl Ether	ND	1									
o-Xylene	.2053	0.5									J
Toluene	ND	0.5									

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: *15-Dec-00*

CLIENT: Blagg Engineering
Work Order: 0011048
Project: BP - Martinez GC G#1

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:

Client ID: **0011048** Run ID: **GC-1_001205A** SeqNo: **33205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.45	0.5	40	0	96.1%	96	111				
Ethylbenzene	38.65	0.5	40	0.0771	96.4%	96	111				
m,p-Xylene	77.64	1	80	0.2174	96.8%	92	105				
Methyl tert-Butyl Ether	38.91	1	40	0	97.3%	93	113				
o-Xylene	39.21	0.5	40	0.2053	97.5%	97	110				
Toluene	39.05	0.5	40	0	97.6%	97	109				

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: *15-Dec-00*

CLIENT: Blagg Engineering
Work Order: 0011048
Project: BP - Martinez GC G#1

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0010** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:

Client ID: **0011048** Run ID: **GC-1_001205A** SeqNo: **33202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.34	0.5	20	0	101.7%	85	115				
Ethylbenzene	21.73	0.5	20	0	108.7%	85	115				
m,p-Xylene	42.14	1	40	0	105.3%	85	115				
Methyl tert-Butyl Ether	20.24	1	20	0	101.2%	85	115				
o-Xylene	20.94	0.5	20	0	104.7%	85	115				
Toluene	20.71	0.5	20	0	103.5%	85	115				
1,4-Difluorobenzene	73.54	0	80	0	91.9%	70	130				
4-Bromochlorobenzene	80.05	0	80	0	100.1%	70	130				
Fluorobenzene	73.2	0	80	0	91.5%	70	130				

Sample ID: **CCV2 BTEX_0010** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:

Client ID: **0011048** Run ID: **GC-1_001205A** SeqNo: **33203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.51	0.5	20	0	97.6%	85	115				
Ethylbenzene	19.8	0.5	20	0	99.0%	85	115				
m,p-Xylene	39.72	1	40	0	99.3%	85	115				
Methyl tert-Butyl Ether	19.93	1	20	0	99.7%	85	115				
o-Xylene	20.17	0.5	20	0	100.9%	85	115				
Toluene	19.77	0.5	20	0	98.9%	85	115				
1,4-Difluorobenzene	73.34	0	80	0	91.7%	70	130				
4-Bromochlorobenzene	82.12	0	80	0	102.7%	70	130				
Fluorobenzene	73.54	0	80	0	91.9%	70	130				

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: 0011048
Project: BP - Martinez GC G#1

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0010** Batch ID: **GC-1_001205** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/5/2000** Prep Date:

Client ID: **0011048** Run ID: **GC-1_001205A** SeqNo: **33204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.45	0.5	40	0	101.1%	85	115				
Ethylbenzene	40.3	0.5	40	0	100.8%	85	115				
m,p-Xylene	80.27	1	80	0	100.3%	85	115				
Methyl tert-Butyl Ether	41.06	1	40	0	102.7%	85	115				
o-Xylene	40.79	0.5	40	0	102.0%	85	115				
Toluene	40.68	0.5	40	0	101.7%	85	115				
1,4-Difluorobenzene	72.99	0	80	0	91.2%	70	130				
4-Bromochlorobenzene	82.48	0	80	0	103.1%	70	130				
Fluorobenzene	73.06	0	80	0	91.3%	70	130				

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: 15-Dec-00

CLIENT: Blagg Engineering
Work Order: 0011048
Project: BP - Martinez GC G#1
Test No: SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
0011047-01A	91.1	102	90.4
0011048-01A	90.2	98.1	89.6
0011048-02A	92.4	99.9	92.4
0011048-03A	92.3	101	94.2
0011048-04A	91.3	100	91.8
0011049-01A	93.7	103	92.6
0011049-02A	92	100	92.3
0011049-03A	91.5	99.6	91.8
0011049-04A	91.9	100	91
0011050-01A	88.1	96	87.6
0011050-02A	91.9	101	91.2
0011050-03A	89.2	99.6	92.3
0011050-04A	93.4	103	92.3
0012001-01A	91.2	101	91.6
0012002-01A	92.5	102	92.4
0012002-02A	92.8	102	93.1
0012002-03AMS	90.9	104	91.2
0012002-03AMSD	91	104	91
CCV1 BTEX_00100	91.9	100	91.5
CCV2 BTEX_00100	91.7	103	91.9
CCV3 BTEX_00100	91.2	103	91.3
LCS WATER	91	96.4	91.2
MB1	92.5	95.4	92.2

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

*** Surrogate recovery outside acceptance limits**