

3R-026

Ground Water Remediation Report

**DATE:
Sept 2008**

3 R0026
COPY

BP AMERICA PRODUCTION CO.

GROUNDWATER REMEDIATION REPORT

**JACQUES COM A #1
(M) SECTION 25, T30N, R9W, NMPM
SAN JUAN COUNTY, NEW MEXICO**

**PREPARED FOR:
NEW MEXICO OIL CONSERVATION DIVISION
1220 ST. FRANCIS DRIVE
SANTA FE, NEW MEXICO 87504**

SEPTEMBER 2008

**PREPARED BY:
BLAGG ENGINEERING, INC.**

**Consulting Petroleum / Reclamation Services
P.O. Box 87
Bloomfield, New Mexico 87413**

BP AMERICA PRODUCTION COMPANY
Jacques Com A #1
SW/4 SW/4, Sec. 25, T30N, R9W

Well Site Plugged & Abandoned: **March 1993**

Pit Closure Date: **March 2000 (abandoned pit II)**

Monitor Well Installation Date: **November 2007**

Monitor Well Sampling Dates: **11/29/07, 04/04/08, 06/23/08, 08/25/08**

Site History:

Groundwater was encountered at a depth of approximately 12 feet below surface grade during excavation of impacted soils from an abandoned pit in March 2000 (documentation attached). The excavation perimeter was measured at approximately 48 X 37 X 15 feet depth. Approximately 950 cubic yards of soils were removed and transported BP America Production Company (BP) Crouch Mesa facility. The groundwater within the excavation perimeter was pumped via water hauling trucks and disposed at an approved facility. Afterwards, the exposed groundwater was sampled and tested for benzene, toluene, ethylbenzene, and total xylenes (BTEX) per US EPA method 8020. The discovery of confirmed groundwater impact during the pit closure activity was transmitted via telecommunication to the New Mexico Oil Conservation Division's (NMOCD) Santa Fe office on May 11, 2000. NMOCD was notified with letter dated May 11, 2000 of the groundwater impact (attached). Resampling of the groundwater in a subsequent event was conducted in April 2000. The BTEX results of the groundwater sampling from the excavation and adjacent test hole in the suspected down gradient direction are as follows;

Sample ID	Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)
Pit Water	03/06/00	130	31	69	789
Pit Water	04/19/00	16.0	ND	7.2	43
TW1 (gw)	03/06/00	ND	ND	ND	1.2
NMWQCC regulatory standards		10	750	750	620

Note: gw = groundwater, NMWQCC = New Mexico Water Quality Control Commission, ppb = parts per billion, ND = Not detectable at reported limits (less than regulatory standards by at least a magnitude of 10).

Groundwater Investigation and Soil Lithology:

Groundwater monitor wells were installed in November 2007 to test groundwater quality (see Figure 1). Boring logs for all three (3) monitor wells along with well completion information are contained within this report. There are no known receptors impacted by the previous discovery of impacted soil and/or groundwater.

Soil lithology at the site consists of primarily coarse grained sand with varying size gravel at greater depths, non cohesive, and firm. Medium dark gray sand phasing into sand and gravel with an apparent hydrocarbon odor was observed from the drill cuttings at an estimated 12-20 feet below grade within the source area boring only (MW #2).

Groundwater Monitor Well Sampling Procedures:

Monitor wells were developed by hand-bailing, using new disposable bailers after installation. Prior to sample collections, the monitor wells were purged approximately three (3) well bore volumes with new disposable bailers. The groundwater samples were collected following US EPA: SW-846 protocol, were placed into laboratory supplied containers with appropriate preservative, and stored in an ice chest for express delivery to an analytical laboratory for testing under strict chain-of-custody procedures. Analytical testing included BTEX by US EPA Method 8021B or Method 8260B and general water quality parameters.

Fluids generated during monitor well development and purging were managed by discarding into a tank pit located at the adjacent Jacques #1 well site. The tank pit contents are then disposed through approved NMOCD operational procedures for removal of produced fluids.

Groundwater Quality & Flow Direction Information:

Quarterly groundwater monitor well sampling was initiated in November 2007. Summary of laboratory BTEX and general water chemistry analytical results are included in the table on the following pages. The data indicates all BTEX constituents tested at non-detectable or very low levels for four (4) consecutive sampling events within the source and down gradient areas. All field data and laboratory reports for each quarterly sampling event are contained within this report.

Groundwater elevations have consistently been measured with a gradient towards the south and southwest directions (Figure 2 through Figure 5).

Summary and Recommendations:

Hydrocarbon impacted soil and groundwater at the site appear to have been remediated via excavation of impacted soils. All site wells tested at non-detectable or low levels for BTEX; therefore, meeting NMWQCC standards for groundwater. Permanent site closure is recommended. Following approval by the NMOCD, site monitor wells will be abandoned pursuant to the approved BP Ground Water Management Plan.

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

JACQUES COM A # 1

UNIT M, SEC. 25, T30N, R9W

REVISED DATE: September 8, 2008

FILENAME: (JA1-3Q08.WK4) NJV

								BTEX EPA METHOD 8021B (ppb)			
SAMPLE DATE	WELL NAME or No.	D.T.W. (ft)	T.D. (ft)	TDS (mg/L)	COND. umhos	pH	PRODUCT (ft)	Benzene	Toluene	Ethyl Benzene	Total Xylene
29-Nov-07	MW #1	15.22	22.50	4,800	3,800	7.27		ND	ND	ND	ND
29-Nov-07	MW #2	13.59	21.50	5,800	4,800	7.39		ND	ND	16	19
04-Apr-08		13.12			4,700	6.99		ND	ND	1.3	ND
23-Jun-08		12.35			2,400	7.42		ND	ND	ND	ND
25-Aug-08		13.02			3,100	7.23		ND	ND	ND	ND
29-Nov-07	MW #3	13.97	22.50	4,500	3,700	7.42		ND	ND	ND	ND
04-Apr-08		13.48			3,400	7.09		ND	ND	ND	ND
23-Jun-08		12.75			2,600	7.30		ND	ND	ND	ND
25-Aug-08		13.43			2,500	7.26		ND	ND	ND	ND
NMWQCC GROUNDWATER STANDARDS								10	750	750	620

NOTES : 1) ND INDICATES NOT DETECTED AT THE REPORTING LIMITS (less than regulatory standards of at least a magnitude of 10).

GENERAL WATER QUALITY
BP AMERICA PRODUCTION COMPANY

JACQUES COM A # 1

Sample Date : November 29 , 2007

PARAMETERS	MW # 1	MW # 2	MW # 3	NMWQCC STANDARDS	Units
LAB pH	7.32	7.43	7.31	6 - 9	s. u.
TOTAL DISSOLVED SOLIDS	4,800	5,800	4,500	1,000	mg / L
NITROGEN, NITRITE	ND	ND	ND	10.0	mg / L
NITROGEN , NITRATE	1.1	ND	1.5	10.0	mg / L
CHLORIDE	89	230	71	250	mg / L
FLUORIDE	1.2	1.0	ND	1.6	mg / L
SULFATE	2,900	3,900	2,600	600	mg / L
IRON	ND	ND	ND	1.0	mg / L

Notes :

- 1) NMWQCC - New Mexico Water Quality Control Commission .
- 2) s. u. - stanadard unit .
- 3) mg / L - milligrams per liter or otherwise known as parts per million (ppm) .
- 4) New Mexico Oil Conservation Division (NMOCD) recognizes the NMWQCC or background levels (statistical equivalence) as the standards for each site specific scenario .

3004520381

CLIENT: <u>AMOCO</u>	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: <u>85722</u> C.O.C. NO: <u>10365</u> <u>7462</u>
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FIELD REPORT: <u>CLOSURE VERIFICATION</u>		PAGE No: <u>1</u> of <u>1</u>
LOCATION: NAME: <u>JACQUES</u> <u>corn</u> A WELL #: <u>1</u> PIT: <u>ABANDONED</u> (II)	DATE STARTED: <u>3/6/00</u> DATE FINISHED: _____	
QUAD/UNIT: <u>M</u> SEC: <u>25</u> TWP: <u>30N</u> RNG: <u>9W</u> PM: <u>NM</u> CNTY: <u>ST</u> ST: <u>NM</u>	ENVIRONMENTAL SPECIALIST: <u>NV</u>	
QTR/FOOTAGE: <u>990' FSL / 990' FWL</u> SWLSW CONTRACTOR: <u>P & S</u>		

EXCAVATION APPROX. 48 FT. x 37 FT. x 15 FT. DEEP. CUBIC YARDAGE: 950
 DISPOSAL FACILITY: BP CROUCH MESA LF REMEDIATION METHOD: STOCKPILED
 LAND USE: RANGE LEASE: FEDERAL FEE FORMATION: PC

FIELD NOTES & REMARKS:	PIT LOCATED APPROXIMATELY <u>105</u> FT. <u>568W</u> FROM WELLHEAD.
DEPTH TO GROUNDWATER: <u>< 50'</u>	NEAREST WATER SOURCE: <u>> 1000'</u>
	NEAREST SURFACE WATER: <u>< 1000'</u>
NMOC D RANKING SCORE: <u>30</u>	NMOC D TPH CLOSURE STD: <u>100</u> PPM
SOIL AND EXCAVATION DESCRIPTION:	

CHECK ONE:

- ☒ PIT ABANDONED
☐ STEEL TANK INSTALLED
☐ FIBERGLASS TANK INSTALLED

SIDEWALLS CONSISTED OF MOSTLY MOD. TO DK. YELL. BROWN SAND PHASING INTO SILTY CLAY @ GREATER DEPTH, 10-12' INTERVAL BELOW GRADE - MOD. TO DK. GRAY SILTY CLAY TO CLAY, SIDEWALL OVM SAMPLES APPEAR FREE OF ANY HC ODOR & DISCOLORATION, NO NOTICEABLE STRENGTH OBSERVED @ GW SURFACE WITH EXCAVATION, TEST HOLE SOIL SIMILAR TO PIT EXCAVATION EXCEPT MOD. GRAY DISCOLORATION OBSERVED WHEN GW WAS ENCOUNTERED (CONTAINED VARYING SIZE GRAVEL WITH GW). IRRIGATION DITCH APPROX. 435 FT. FROM SOUTH PERIMETER OF EXCAVATION.

P & A LOCATION - 3/6/93

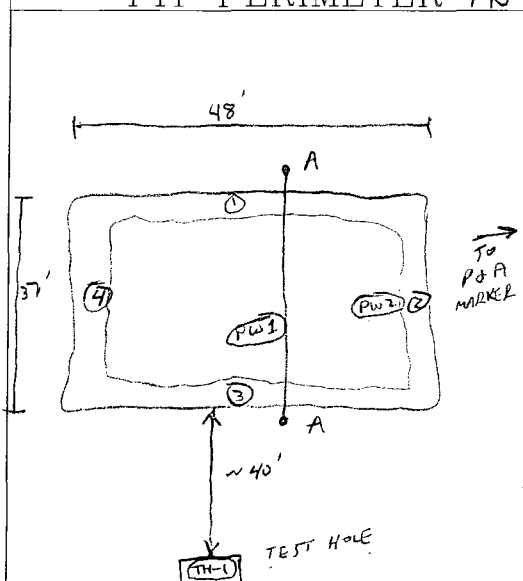
FIELD 418.1 CALCULATIONS

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

SCALE

0 FT

PIT PERIMETER 4N



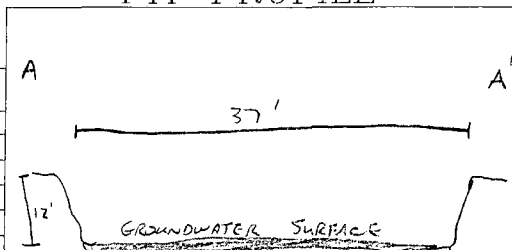
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 6'	0.0
2 @ 6'	0.0
3 @ 7'	0.0
4 @ 7'	0.0
5 @	

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
PW1EGW(12)	BTEX / A/C	0955
TH1EGW(12)	BTEX / A/C	1020
PW2EGW(14)	BTEX	1320

PIT PROFILE



TRAVEL NOTES: CALLOUT: 3/3/00 AFTER. ONSITE: 3/6/00 MORN.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 08-Mar-00

Client: Blagg Engineering

Client Sample Info: ~~Jaquez~~ Com A#1 - Abandoned Pit (II)

Work Order: 0003005

Client Sample ID: PW1 @ GW (12ft)

Lab ID: 0003005-01A Matrix: AQUEOUS

Collection Date: 3/6/2000 9:55:00 AM

Project: BP Amoco - ~~Jaquez~~ Com A 1

COC Record: 10365

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	130	0.5		µg/L	1	3/7/2000
Toluene	31	0.5		µg/L	1	3/7/2000
Ethylbenzene	69	0.5		µg/L	1	3/7/2000
m,p-Xylene	720	5		µg/L	5	3/7/2000
o-Xylene	69	0.5		µg/L	1	3/7/2000

Qualifiers:

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

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



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

ANALYTICAL REPORT

Date: 26-Apr-00

JV JACQUES

Client:	Blagg Engineering	Client Sample Info:	Laguer Com A#1, Abandoned Pit
Work Order:	0004047	Client Sample ID:	PW2 @ GW (14ft.)
Lab ID:	0004047-01A	Matrix:	AQUEOUS
Project:	BP Amoco - Laguer Com A#1	Collection Date:	4/19/2000 1:20:00 PM
		COC Record:	10579

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	16	0.5		µg/L	1	4/24/2000
Toluene	ND	0.5		µg/L	1	4/24/2000
Ethylbenzene	7.2	0.5		µg/L	1	4/24/2000
m,p-Xylene	42	1		µg/L	1	4/24/2000
o-Xylene	1	0.5		µg/L	1	4/24/2000

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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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

nv
JACQUES

Date: 08-Mar-00

Client: Blagg Engineering

Client Sample Info: ~~Jacquez~~ Com A#1 - Abandoned Pit (II)

Work Order: 0003005

Client Sample ID: TW1 @ GW (12ft)

Lab ID: 0003005-02A Matrix: AQUEOUS

Collection Date: 3/6/2000 10:20:00 AM

Project: BP Amoco - ~~Jacquez~~ Com A 1

COC Record: 10365

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	ND	0.5		µg/L	1	3/7/2000
Toluene	ND	0.5		µg/L	1	3/7/2000
Ethylbenzene	ND	0.5		µg/L	1	3/7/2000
m,p-Xylene	1.2	1		µg/L	1	3/7/2000
o-Xylene	ND	0.5		µg/L	1	3/7/2000

Qualifiers:

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

1 of 1

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client: Blagg / AMOCO
Sample ID: PW 1 @ GW (12")
Laboratory Number: G895
Chain of Custody: 7462
Sample Matrix: Water
Preservative: Cool
Condition: Cool & Intact

Project #: 403410
Date Reported: 03-07-00
Date Sampled: 03-06-00
Date Received: 03-06-00
Date Extracted: N/A
Date Analyzed: 03-07-00

Parameter	Analytical Result	Units		Units
pH	7.46	s.u.		
Conductivity @ 25° C	13,500	umhos/cm		
Total Dissolved Solids @ 180C	6,700	mg/L		
Total Dissolved Solids (Calc)	6,660	mg/L		
SAR	14.3	ratio		
Total Alkalinity as CaCO3	410	mg/L		
Total Hardness as CaCO3	1,960	mg/L		
Bicarbonate as HCO3	410	mg/L	6.71	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.1	mg/L	0.00	meq/L
Nitrite Nitrogen	<0.001	mg/L	0.00	meq/L
Chloride	390	mg/L	11.00	meq/L
Fluoride	1.76	mg/L	0.09	meq/L
Phosphate	1.1	mg/L	0.03	meq/L
Sulfate	3,890	mg/L	80.99	meq/L
Iron	0.007	mg/L		
Calcium	636	mg/L	31.74	meq/L
Magnesium	65.9	mg/L	5.42	meq/L
Potassium	4.5	mg/L	0.12	meq/L
Sodium	1,420	mg/L	61.77	meq/L
Cations			99.04	meq/L
Anions			98.83	meq/L
Cation/Anion Difference			0.21%	

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

Comments:

JACQUES
Jaques Com A #1

Abandoned Pit. (II)

Analyst

Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

CATION / ANION ANALYSIS

Client: Blagg / AMOCO
Sample ID: TH - 1 @ GW (12')
Laboratory Number: G896
Chain of Custody: 7462
Sample Matrix: Water
Preservative: Cool
Condition: Cool & Intact

Project #: 403410
Date Reported: 03-07-00
Date Sampled: 03-06-00
Date Received: 03-06-00
Date Extracted: N/A
Date Analyzed: 03-07-00

Parameter	Analytical Result	Units	Units
pH	7.50	s.u.	
Conductivity @ 25° C	12,700	umhos/cm	
Total Dissolved Solids @ 180C	6,320	mg/L	
Total Dissolved Solids (Calc)	6,280	mg/L	
SAR	13.6	ratio	
Total Alkalinity as CaCO3	333	mg/L	
Total Hardness as CaCO3	1,760	mg/L	
Bicarbonate as HCO3	333	mg/L	5.46 meq/L
Carbonate as CO3	<0.1	mg/L	0.00 meq/L
Hydroxide as OH	<0.1	mg/L	0.00 meq/L
Nitrate Nitrogen	<0.1	mg/L	0.00 meq/L
Nitrite Nitrogen	<0.001	mg/L	0.00 meq/L
Chloride	90.0	mg/L	2.54 meq/L
Fluoride	1.57	mg/L	0.08 meq/L
Phosphate	1.0	mg/L	0.03 meq/L
Sulfate	4,040	mg/L	84.11 meq/L
Iron	0.020	mg/L	
Calcium	504	mg/L	25.15 meq/L
Magnesium	122	mg/L	10.05 meq/L
Potassium	4.5	mg/L	0.12 meq/L
Sodium	1,310	mg/L	56.99 meq/L
Cations			92.30 meq/L
Anions			92.23 meq/L
Cation/Anion Difference			0.08%

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

Comments:

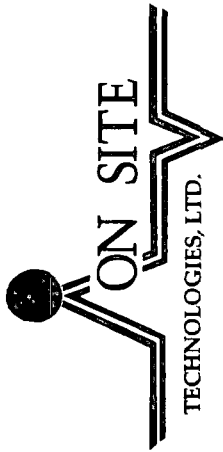
JACQUES

Jaquez Com A #1

Abandoned Pit. (II)

Analyst

Review



CHAIN OF CUSTODY RECORD

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

40365

Date: 3/6/00

Page: 1 of 1

Purchase Order No.:		Project No.	
Name: <u>TEFF BURG</u>		Title:	
Company: <u>BUGG ENGINEERING, INC.</u>		Company: <u>same</u>	
Address: <u>P.O. Box 87</u>		Mailing Address:	
City, State, Zip: <u>Albuquerque, NM 87413</u>		City, State, Zip:	
Telephone No.:		Telephone No.:	
Fax No.:		Fax No.:	
PROJECT LOCATION: <u>JACQUES</u>		ANALYSIS REQUESTED	
PROJECT LOCATION: <u>BP Amoco - former from A & I - ADDITIONAL PIT (II)</u>			
SAMPLER'S SIGNATURE: <u>Alison Velaz</u>			
SAMPLE IDENTIFICATION		LAB ID	
DATE	TIME	MATRIX	PRES.
3/6/00	12:00	WATER	COOL + HCL
3/6/00	12:00	WATER	COOL + HCL
RELINQUISHED BY: <u>Alison Velaz</u>		Date/Time: <u>3/6/00 13:10</u>	
RELINQUISHED BY:		Date/Time:	
RELINQUISHED BY:		Date/Time:	
Method of Shipment:		Rush ☒ 24-48 Hours ☐ 10 Working Days ☐ By Date	
Authorized by: <u>Alison Velaz</u>		Special Instructions / Remarks:	
(Client Signature Must Accompany Request)		PLEASE PHONE UPON COMPLETION OF ANALYTICAL RESULTS. FAX RUSH	

7462

ENVIROTECH INC.

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



200

9/5/1

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

Page: 1 of 1[illegible]

Distribution:	White - On Site	Yellow - LAB	Pink - Sampler	Goldenrod - Client
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BLAGG ENGINEERING, INC.

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

May 11, 2000

Mr. William C. Olson - Hydrologist
State of New Mexico Oil Conservation Division
2040 So. Pacheco
Santa Fe, New Mexico 87505

RE: Formal Notification of Groundwater Impact
BP Amoco's Jaquez Com A # 1 - Abandoned pit (II)
Unit M, Sec. 25, T30N, R9W
San Juan County, New Mexico
(Gas well plugged & abandoned 3 / 6 / 93)

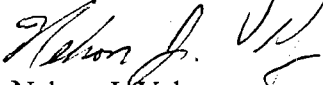
Dear Mr. Olson:

Initial groundwater sample analytical results at the above referenced well site during pit closure activity reveal hydrocarbon contamination to be above the State of New Mexico Water Quality Control Commission's regulatory standards for benzene and total xylenes. Sampling was conducted March 6, 2000. Depth to water is estimated at twelve (12) feet below grade. Listed below are summary analytical results for benzene, toluene, ethylbenzene, and total xylenes (BTEX):

Parameters	Abandoned Pit (parts per billion)
benzene	130
toluene	31
ethylbenzene	69
total xylenes	789

If you have any questions concerning this information, please do not hesitate to contact us at the aforementioned phone number. Thank you for your cooperation.

Respectfully submitted,
Blagg Engineering, Inc.


Nelson J. Velez
Staff Geologist

cc: Denny Foust, Environmental Geologist, NMOCD, Aztec, NM
Buddy Shaw, Environmental Coordinator, BP Amoco, Farmington, NM

NV/nv

JAQ-A1.LTR

BLAGG ENGINEERING, INC.

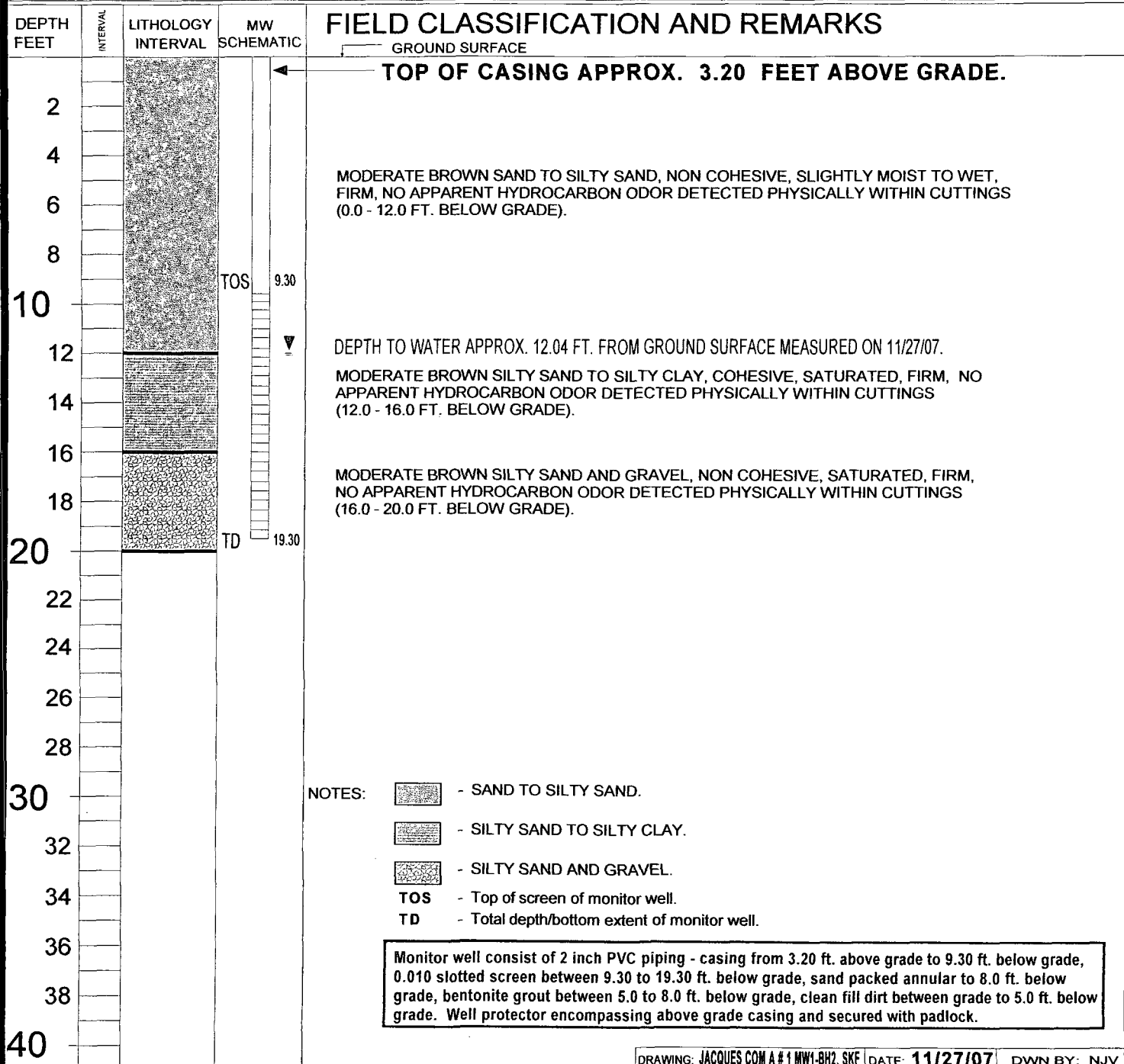
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW #1

BORE / TEST HOLE REPORT

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: JACQUES COM A # 1 UNIT M, SEC. 25, T30N, R9W
CONTRACTOR: BLAGG ENGINEERING, INC. / ENVIROTECH, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 75)
BORING LOCATION: 183 FT., S86W FROM WELL HEAD.

BORING #..... BH-2
MW #..... 1
PAGE #..... 1
DATE STARTED 11/27/07
DATE FINISHED 11/27/07
OPERATOR..... DP
PREPARED BY NJV



BLAGG ENGINEERING, INC.

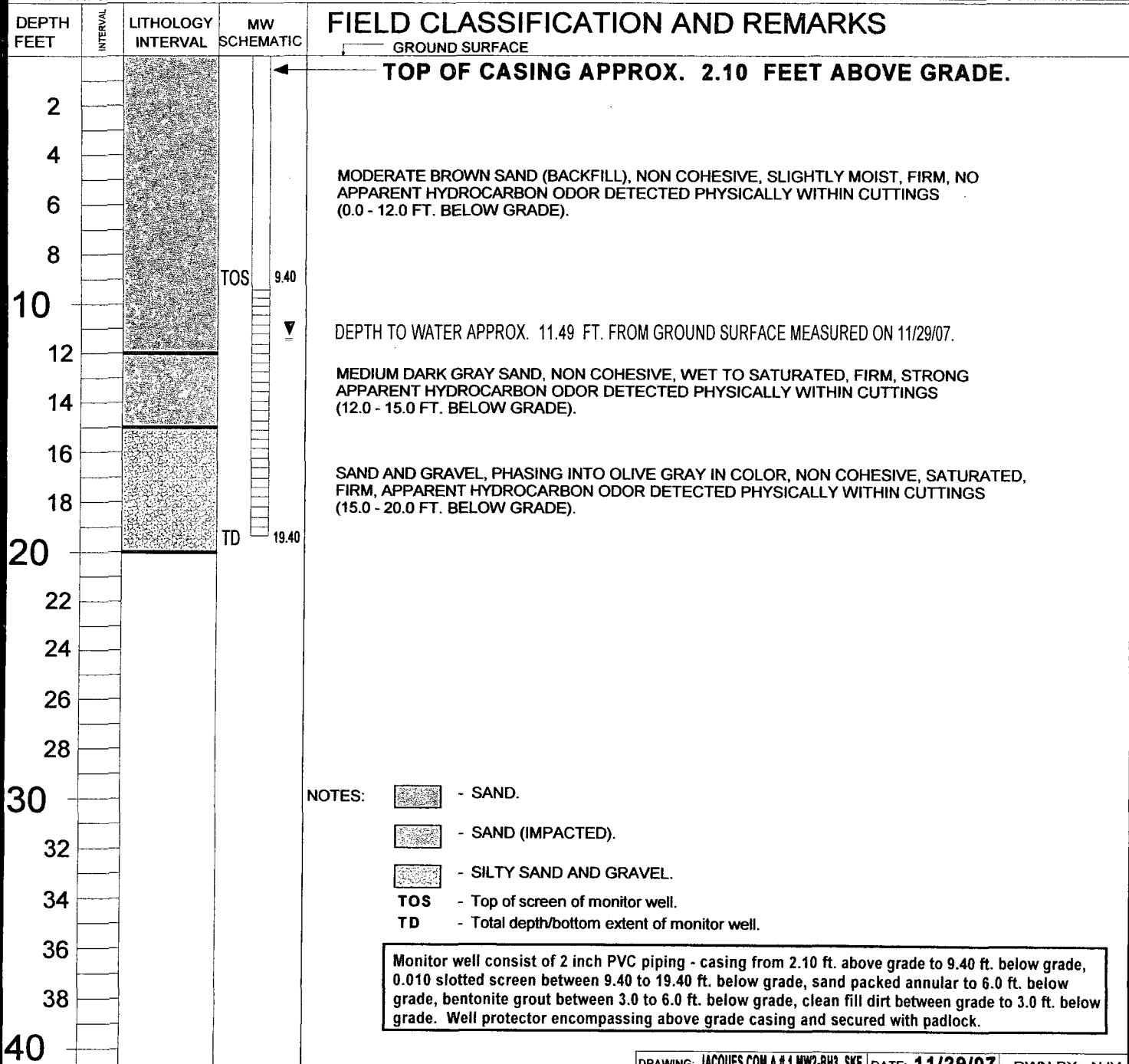
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW #2

BORE / TEST HOLE REPORT

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: JACQUES COM A # 1 UNIT M, SEC. 25, T30N, R9W
CONTRACTOR: BLAGG ENGINEERING, INC. / ENVIROTECH, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 75)
BORING LOCATION: 113 FT., S67W FROM WELL HEAD.

BORING #..... BH-3
MW #..... 2
PAGE #..... 2
DATE STARTED 11/27/07
DATE FINISHED 11/27/07
OPERATOR..... DP
PREPARED BY NJV



BLAGG ENGINEERING, INC.

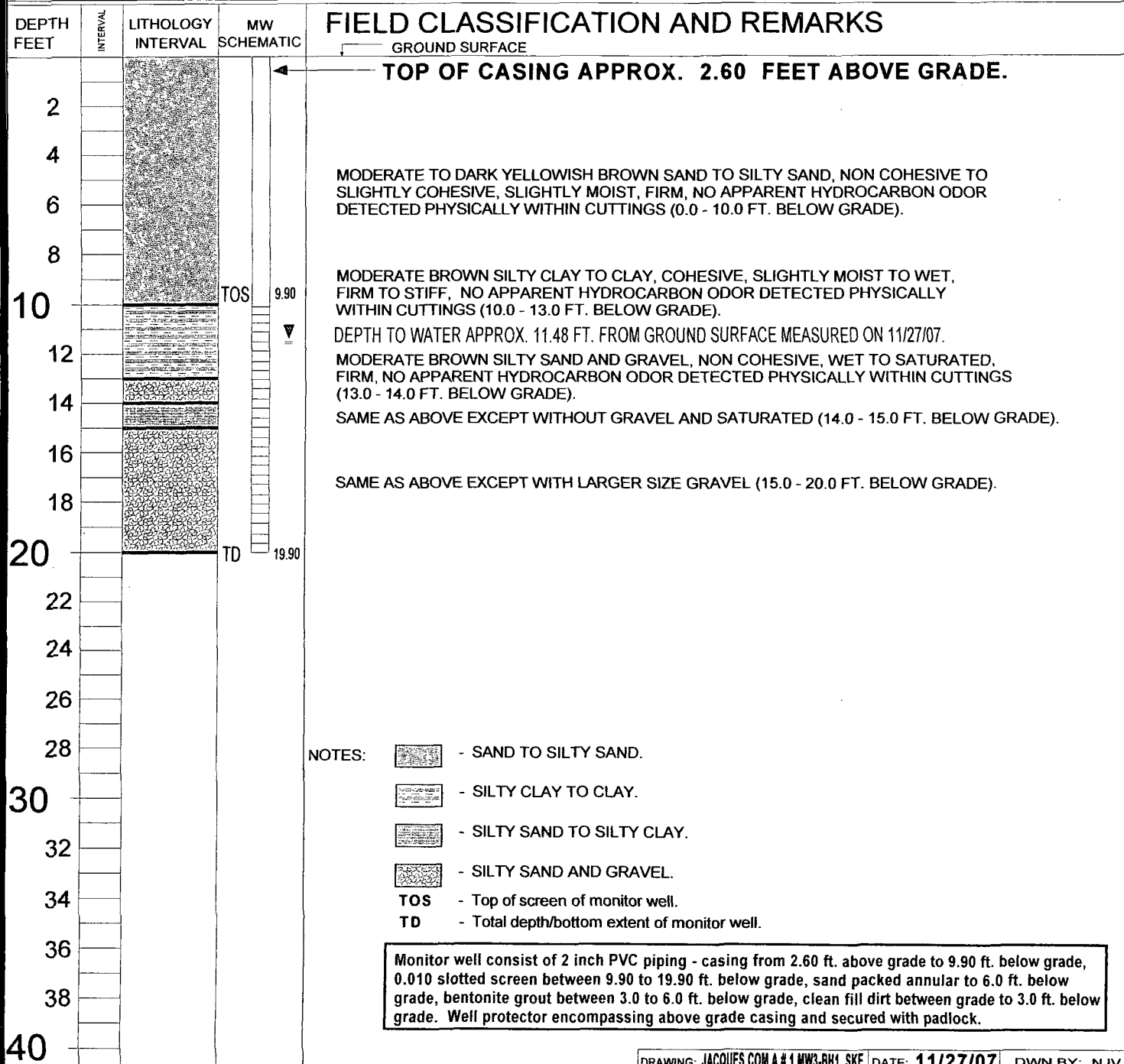
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

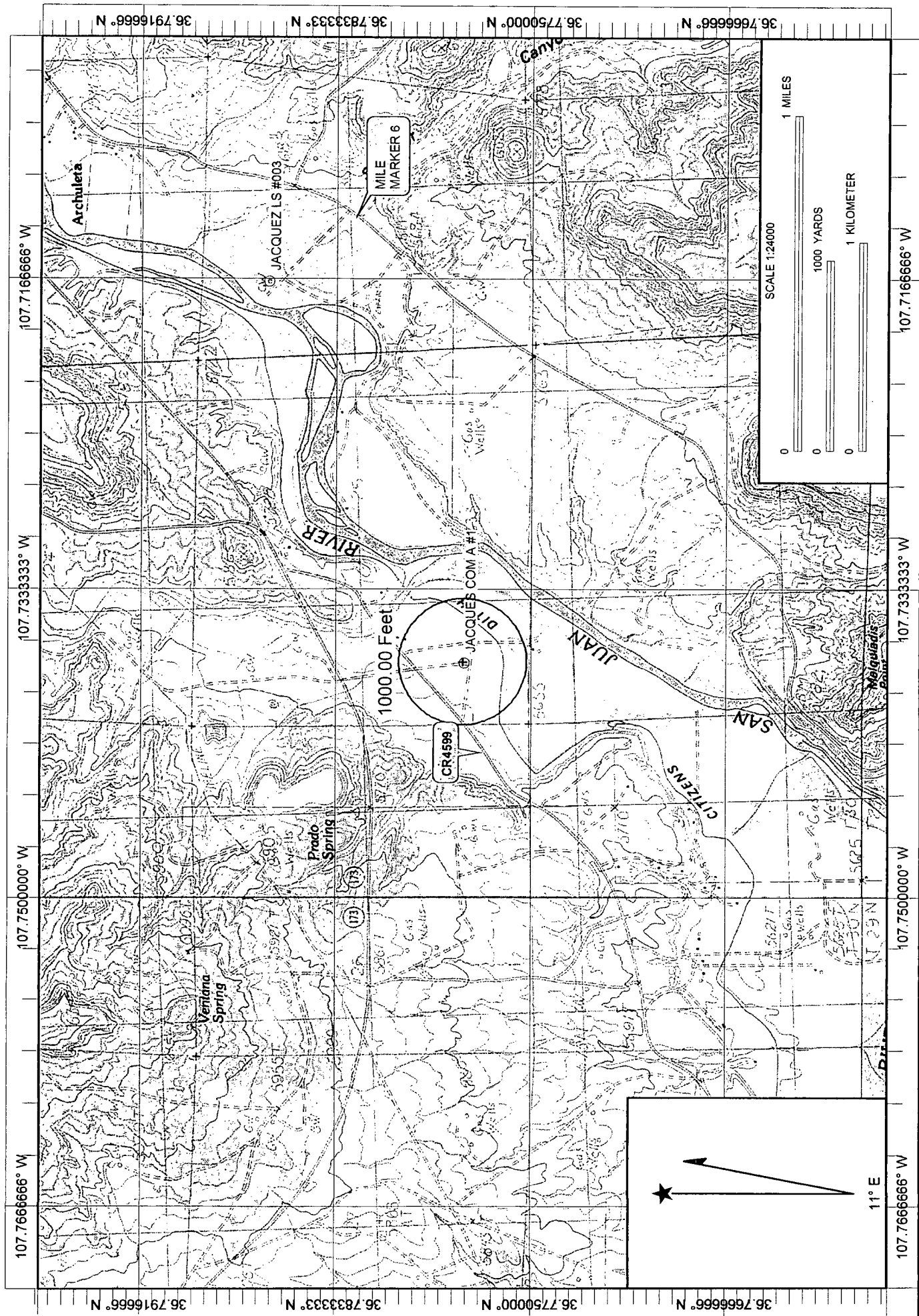
MW #3

BORE / TEST HOLE REPORT

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: JACQUES COM A # 1 UNIT M, SEC. 25, T30N, R9W
CONTRACTOR: BLAGG ENGINEERING, INC. / ENVIROTECH, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 75)
BORING LOCATION: 134 FT., S43.5W FROM WELL HEAD.

BORING #..... BH-1
MW #..... 3
PAGE #..... 3
DATE STARTED 11/27/07
DATE FINISHED 11/27/07
OPERATOR..... DP
PREPARED BY NJV





Name: ARCHULETA
 Date: 11/23/2007
 Scale: 1 inch equals 2000 feet

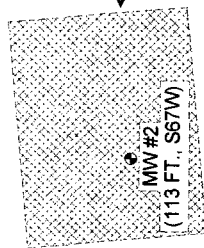
Location: 036.7778784° N 107.7373880° W
 Caption: JACQUES COM A #1
 UNIT M, SEC. 25, T30N, R9W

FIGURE 1



PLUGGED &
ABANDONED
MARKER ⊕

MW #1
(183 FT., S86W)



ABANDONED PIT (II)
EXCAVATED MARCH, 2000

TEST HOLE ADVANCED
MARCH, 2000

MW #3
(134 FT., S43.5W)

1 INCH = 40 FT.
0 40 80 FT.

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

BP AMERICA PRODUCTION CO.

JACQUES COM A # 1

SW/4 SW/4 SEC. 25, T30N, R9W

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 INSTALLATIONS

DRAWN BY: NJV

FILENAME: JACQUES COM A 1-SM.SKF

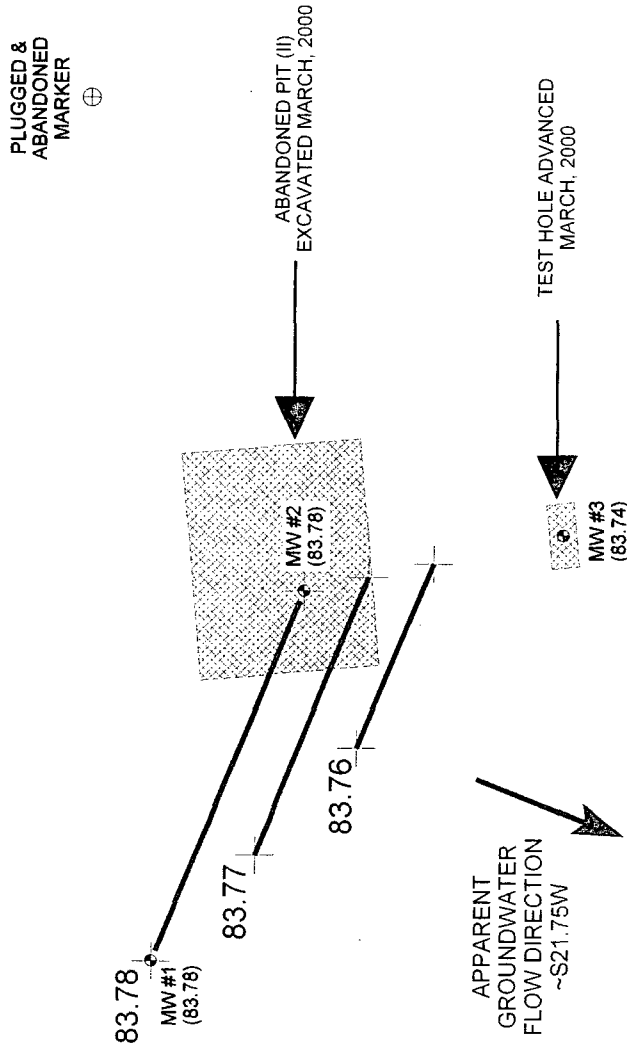
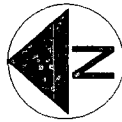
REVISED: 11-27-07 NJV

SITE MAP

11/07

FIGURE 2

(4th 1/4, 2007)



1 INCH = 40 FT.



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

MW #	Top of Well Elevation
MW #1	(99.00)
MW #2	(97.37)
MW #3	(97.71)
MW #1	Groundwater Elevation as of 11/29/07.
(83.78)	

BP AMERICA PRODUCTION CO.
JACQUES COMA # 1
SW/4 SW/4 SEC. 25, T30N, R9W
SANDHURST COUNTY, NEW MEXICO

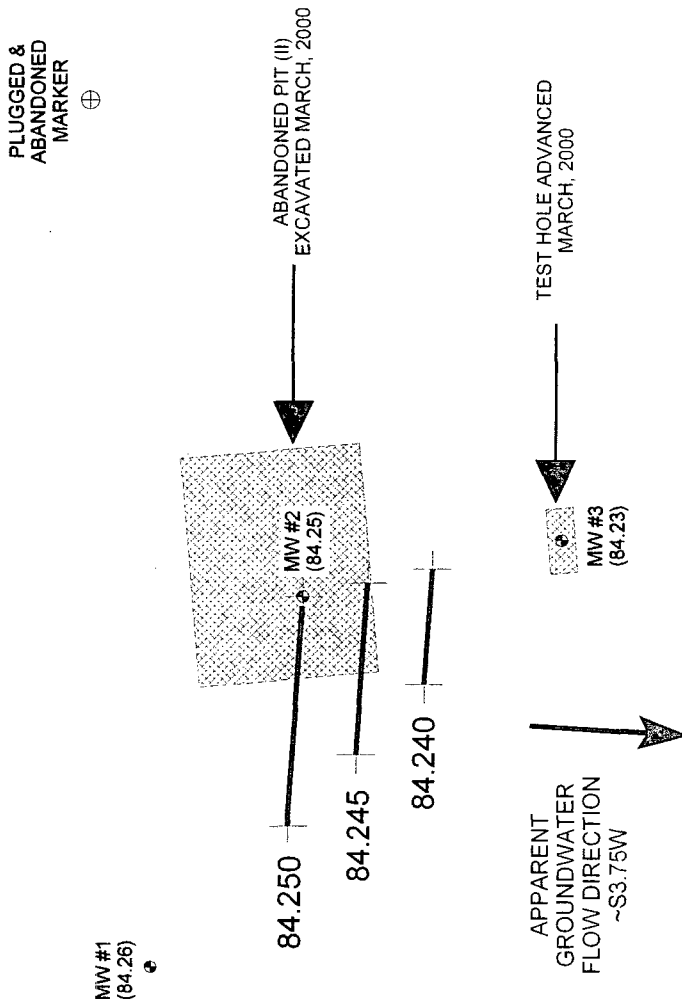
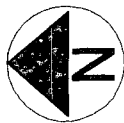
BLAGG ENGINEERING, INC.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PROJECT: MW SAMPLING
DRAWN BY: NJV
FILENAME: 11-29-07-GW-SKF
REVISED: 11-29-07 NJV

GROUNDWATER
CONTOUR
MAP
11/07

FIGURE 3

(2nd 1/4, 2008)



1 INCH = 40 FT.



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

Top of Well Elevation	
MW #1	(99.00)
MW #2	(97.37)
MW #3	(97.71)
MW #1	Groundwater Elevation as of 4/04/08.
⊕ (83.78)	

BP AMERICA PRODUCTION CO.

JACQUES COMA # 1

SW/4 SW/4 SEC. 25, T30N, R9W

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 04-04-08-GW-SKF

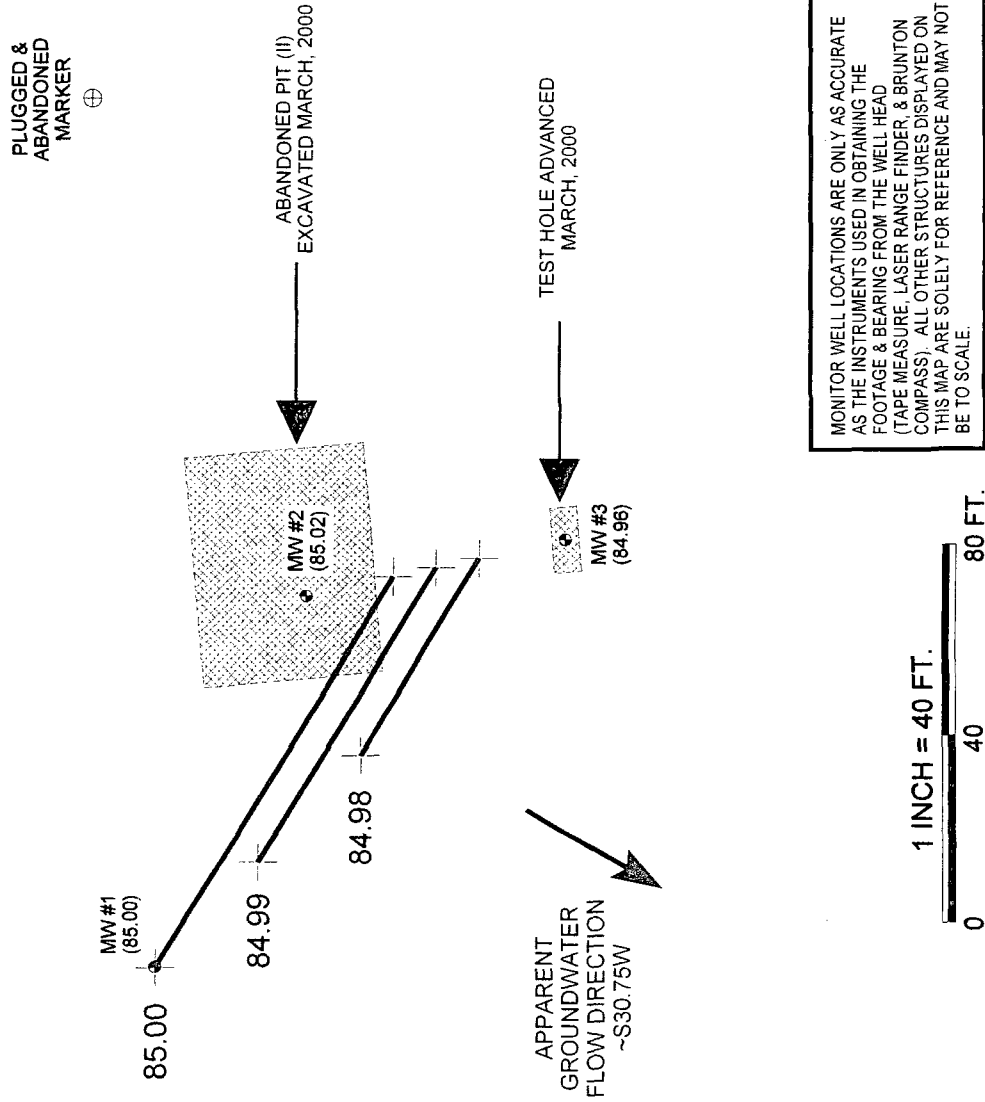
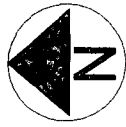
REVISED: 04_04_08 NJV

GROUNDWATER
CONTOUR
MAP

04/08

FIGURE 4

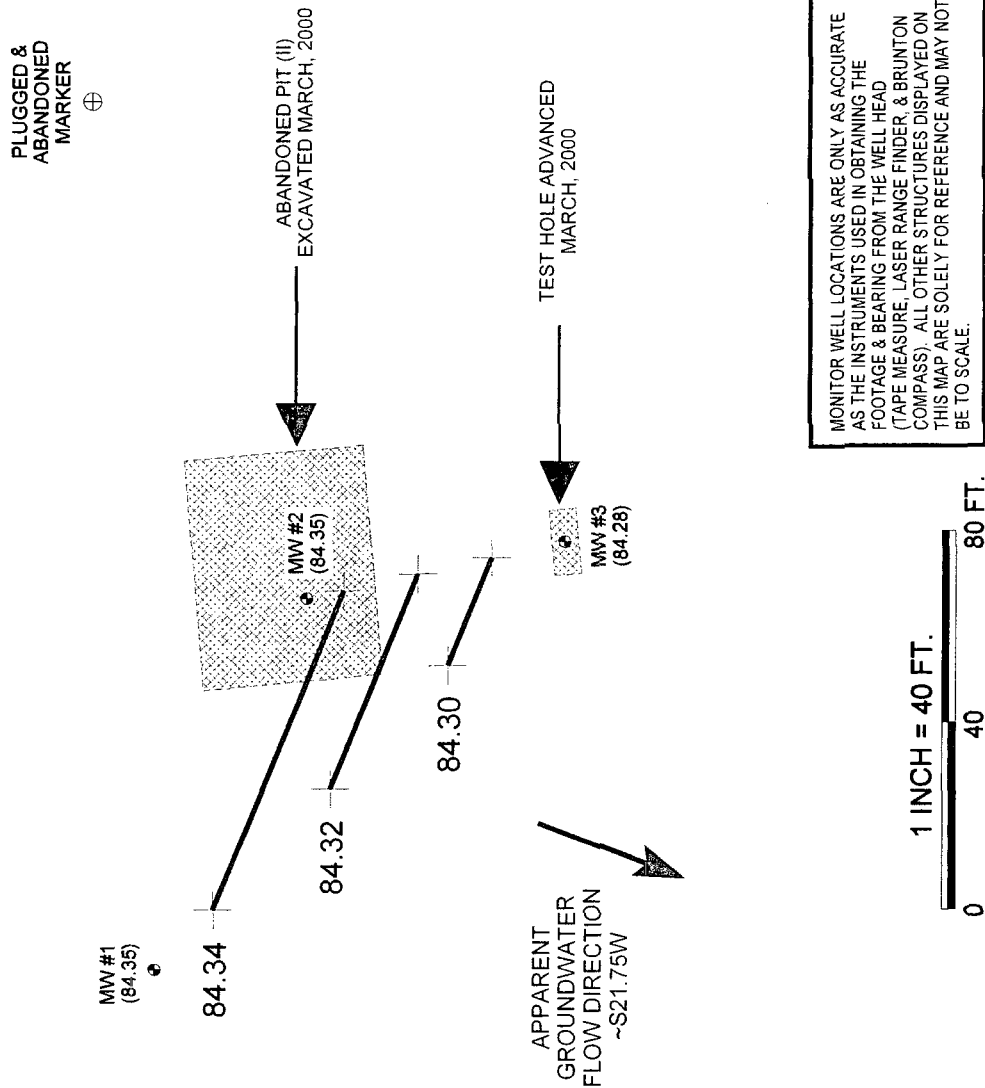
(2nd 1/4, 2008)



GROUNDWATER CONTOUR MAP 06/08	PROJECT: MW SAMPLING DRAWN BY: NJV FILENAME: 06-23-08-GW.SKF REVISED: 06-25-08 NJV	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	BP AMERICA PRODUCTION CO. JACQUES.COM A # 1 SW/4 SW/4 SEC. 25, T30N, R9W SAN JUAN COUNTY, NEW MEXICO
--	--	--	---

FIGURE 5

(3rd 1/4, 2008)



BP AMERICA PRODUCTION CO.
JACQUES COM A # 1
SW 1/4 SW 1/4 SEC. 25, T30N, R9W
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 SAMPLING
DRAWN BY: NJV
FILENAME: 08-25-08-GW.SKF
REVISED: 08-28-08 NJV

GROUNDWATER
CONTOUR
MAP
08/08

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT: BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY #: N / A

JACQUES COM A #1

LABORATORY (S) USED: HALL ENVIRONMENTAL

UNIT M, SEC. 25, T30N, R9W

Date: November 29, 2007

SAMPLER: N J V

Filename: 11-29-07.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)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	99.00	83.78	15.22	22.50	1310	7.27	3,800	16.5	3.50
2	97.37	83.78	13.59	21.50	1345	7.39	4,800	15.7	2.00
3	97.71	83.74	13.97	22.50	1325	7.42	3,700	15.9	4.25

INSTRUMENT CALIBRATIONS =

DATE & TIME =

7.00	2,800
11/28/07	1410

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

Ideally a minimum of three (3) wellbore volumes:

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

Comments or note well diameter if not standard 2".

MW tops surveyed on 11/28/07.

Excellent recovery in MW #1, #3, poor recovery in MW #2. All showed murky brown appearance, slight hydrocarbon odor in MW #2. Collected BTEX, anions, pH, TDS, and iron samples from all MW's.

Top of casings: MW #1 ~ 3.20 ft., MW #2 ~ 2.10 ft., MW #3 ~ 2.60 ft. above grade.

Hall Environmental Analysis Laboratory, Inc.

Date: 11-Dec-07

CLIENT: Blagg Engineering

Client Sample ID: MW #1

Lab Order: 0711488

Collection Date: 11/29/2007 1:10:00 PM

Project: Jacquez Com A #1 (Jacques #1)

Date Received: 11/30/2007

Lab ID: 0711488-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/5/2007 5:09:19 PM
Toluene	ND	1.0		µg/L	1	12/5/2007 5:09:19 PM
Ethylbenzene	ND	1.0		µg/L	1	12/5/2007 5:09:19 PM
Xylenes, Total	ND	2.0		µg/L	1	12/5/2007 5:09:19 PM
Surr: 4-Bromofluorobenzene	86.6	70.2-105		%REC	1	12/5/2007 5:09:19 PM
EPA METHOD 300.0: ANIONS						Analyst: SMP
Fluoride	1.2	1.0		mg/L	10	12/8/2007 12:35:11 PM
Chloride	89	1.0		mg/L	10	12/8/2007 12:35:11 PM
Nitrogen, Nitrite (As N)	ND	1.0	H	mg/L	10	12/8/2007 12:35:11 PM
Nitrogen, Nitrate (As N)	1.1	1.0	H	mg/L	10	12/8/2007 12:35:11 PM
Phosphorus, Orthophosphate (As P)	ND	5.0	H	mg/L	10	12/8/2007 12:35:11 PM
Sulfate	2900	25		mg/L	50	12/8/2007 1:27:25 PM
FERROUS IRON						Analyst: SLB
Ferrous Iron	ND	0.10		mg/L	1	12/3/2007
SM4500-H+B: PH						Analyst: LMM
pH	7.32	0.1		pH units	1	11/30/2007
SM 2540C: TDS						Analyst: TAF
Total Dissolved Solids	4800	400		mg/L	1	12/4/2007

Qualifiers: * Value exceeds Maximum Contaminant Level
E Value above quantitation range
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 11-Dec-07

CLIENT: Blagg Engineering

Client Sample ID: MW #2

Lab Order: 0711488

Collection Date: 11/29/2007 1:45:00 PM

Project: Jacquez Com A #1 (Jacques #1)

Date Received: 11/30/2007

Lab ID: 0711488-02

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/5/2007 6:09:34 PM
Toluene	ND	1.0		µg/L	1	12/5/2007 6:09:34 PM
Ethylbenzene	16	1.0		µg/L	1	12/5/2007 6:09:34 PM
Xylenes, Total	19	2.0		µg/L	1	12/5/2007 6:09:34 PM
Surr: 4-Bromofluorobenzene	107	70.2-105	S	%REC	1	12/5/2007 6:09:34 PM
EPA METHOD 300.0: ANIONS						Analyst: SMP
Fluoride	1.0	1.0		mg/L	10	12/8/2007 12:52:35 PM
Chloride	230	1.0		mg/L	10	12/8/2007 12:52:35 PM
Nitrogen, Nitrite (As N)	ND	1.0	H	mg/L	10	12/8/2007 12:52:35 PM
Nitrogen, Nitrate (As N)	ND	1.0	H	mg/L	10	12/8/2007 12:52:35 PM
Phosphorus, Orthophosphate (As P)	ND	5.0	H	mg/L	10	12/8/2007 12:52:35 PM
Sulfate	3900	25		mg/L	50	12/8/2007 1:44:49 PM
FERROUS IRON						Analyst: SLB
Ferrous Iron	ND	0.10		mg/L	1	12/3/2007
SM4500-H+B: PH						Analyst: LMM
pH	7.43	0.1		pH units	1	11/30/2007
SM 2540C: TDS						Analyst: TAF
Total Dissolved Solids	5800	400		mg/L	1	12/4/2007

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 11-Dec-07

CLIENT: Blagg Engineering**Client Sample ID:** MW #3**Lab Order:** 0711488**Collection Date:** 11/29/2007 1:25:00 PM**Project:** Jacques Com A #1 (Jacques #1)**Date Received:** 11/30/2007**Lab ID:** 0711488-03**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/5/2007 6:39:37 PM
Toluene	ND	1.0		µg/L	1	12/5/2007 6:39:37 PM
Ethylbenzene	ND	1.0		µg/L	1	12/5/2007 6:39:37 PM
Xylenes, Total	ND	2.0		µg/L	1	12/5/2007 6:39:37 PM
Surr: 4-Bromofluorobenzene	89.5	70.2-105		%REC	1	12/5/2007 6:39:37 PM
EPA METHOD 300.0: ANIONS						Analyst: SMP
Fluoride	ND	1.0		mg/L	10	12/8/2007 1:10:00 PM
Chloride	71	1.0		mg/L	10	12/8/2007 1:10:00 PM
Nitrogen, Nitrite (As N)	ND	1.0	H	mg/L	10	12/8/2007 1:10:00 PM
Nitrogen, Nitrate (As N)	1.5	1.0	H	mg/L	10	12/8/2007 1:10:00 PM
Phosphorus, Orthophosphate (As P)	ND	5.0	H	mg/L	10	12/8/2007 1:10:00 PM
Sulfate	2600	25		mg/L	50	12/8/2007 2:02:14 PM
FERROUS IRON						Analyst: SLB
Ferrous Iron	ND	0.10		mg/L	1	12/3/2007
SM4500-H+B: PH						Analyst: LMM
pH	7.31	0.1		pH units	1	11/30/2007
SM 2540C: TDS						Analyst: TAF
Total Dissolved Solids	4500	200		mg/L	1	12/4/2007

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CHAIN-OF-CUSTODY RECORD

Client: BLACK ENER. / BP AMERICA

Address: P.O. Box 87

B.F.D. NM 87413

Phone #: 632-1199

Fax #:

QA / QC Package:

Std ☐ Level 4 ☐

Other:

Project Name:
JACQUES com A #1
(JACQUES #1)

Project #:

Project Manager:

Sampler:

Sample Temperature:

Number/Volume

Preservative

HgCl₂

HNO₃

HEAL No.

07/1488

Date

Sample I.D. No.

Matrix

Time

11/29/07

1310

WATER

MW #1

2-40m

✓

1

11/29/07

1345

WATER

MW #2

2-40m

✓

2

11/29/07

1325

WATER

MW #3

2-40m

✓

3

11/29/07

1325

WATER

MW #3

2-40m

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11/29/07

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✓

3

11/29/07

1325

WATER

MW #3

2-40m

✓

3

11/29/07

1325

WATER

MW #3

2-40m

✓

3

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: Jacquez Com A #1 (Jacques #1)

Work Order: 0711488

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

Method: EPA Method 300.0: Anions

Sample ID: MBLK

MBLK

Batch ID: R26423 Analysis Date: 12/8/2007 12:00:23 PM

Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						

Method: Ferrous Iron

Sample ID: 0711488-03C MSD

MSD

Batch ID: R26321 Analysis Date: 12/3/2007

Ferrous Iron	0.9240	mg/L	0.10	92.4	50	150	4.55	20	
--------------	--------	------	------	------	----	-----	------	----	--

Sample ID: 0711488-03C MS

MS

Batch ID: R26321 Analysis Date: 12/3/2007

Ferrous Iron	0.9670	mg/L	0.10	96.7	50	150			
--------------	--------	------	------	------	----	-----	--	--	--

Method: EPA Method 8021B: Volatiles

Sample ID: 5ML RB

MBLK

Batch ID: R26381 Analysis Date: 12/5/2007 8:29:31 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						

Sample ID: 100NG BTEX LCS

LCS

Batch ID: R26381 Analysis Date: 12/5/2007 11:44:35 PM

Benzene	19.64	µg/L	1.0	98.2	85.9	113			
Toluene	19.43	µg/L	1.0	96.6	86.4	113			
Ethylbenzene	19.64	µg/L	1.0	98.2	83.5	118			
Xylenes, Total	59.27	µg/L	2.0	98.8	83.4	122			

Sample ID: 100NG BTEX LCSD

LCSD

Batch ID: R26381 Analysis Date: 12/6/2007 12:14:45 AM

Benzene	20.41	µg/L	1.0	102	85.9	113	3.85	27	
Toluene	20.15	µg/L	1.0	100	86.4	113	3.66	19	
Ethylbenzene	20.53	µg/L	1.0	103	83.5	118	4.42	10	
Xylenes, Total	61.86	µg/L	2.0	103	83.4	122	4.28	13	

Method: SM 2540C: TDS

Sample ID: MB-14556

MBLK

Batch ID: 14556 Analysis Date: 12/4/2007

Total Dissolved Solids	ND	mg/L	20						
------------------------	----	------	----	--	--	--	--	--	--

Sample ID: LCS-14556

LCS

Batch ID: 14556 Analysis Date: 12/4/2007

Total Dissolved Solids	1037	mg/L	20	103	80	120			
------------------------	------	------	----	-----	----	-----	--	--	--

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG**

Date Received:

11/30/2007

Work Order Number **0711488**

Received by: **TLS**

Checklist completed by:

Janet Shomin
Signature

11/30/07
Date

Sample ID labels checked by

TS
Initials

Matrix

Carrier name **UPS**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☒

No ☐

N/A ☐

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

Container/Temp Blank temperature?

3°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding

Comments:

Corrective Action

BLAGG ENGINEERING, INC.**MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA****CLIENT : BP AMERICA PROD. CO.****CHAIN-OF-CUSTODY # : 156387****JACQUES COM A # 1****LABORATORY (S) USED : PACE ANALYTICAL****UNIT M, SEC. 25, T30N, R9W****Date : April 4, 2008****SAMPLER : NJV****Filename : 04-04-08.WK4****PROJECT MANAGER : NJV**

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	99.00	84.26	14.74	22.50	-	-	-	-	-
2	97.37	84.25	13.12	21.50	1230	6.99	4,700	17.8	2.00
3	97.71	84.23	13.48	22.50	1150	7.09	3,400	19.0	4.50

INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00

2,800

DATE & TIME =

04/03/08

1030

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

Ideally a minimum of three (3) wellbore volumes:

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

Comments or note well diameter if not standard 2".

Excellent recovery in MW # 3 , fair / poor recovery in MW # 2 . Both showed murky brown appearance , no apparent hydrocarbon odor in MW # 2 . Collected samples for BTEX per US EPA Method 8260 from MW # 2 & # 3 only .

Top of casings : MW # 1 ~ 3.20 ft. , MW # 2 ~ 2.10 ft. , MW # 3 ~ 2.60 ft. above grade .

ANALYTICAL RESULTS

Project: JACQUEZ COM A #1
Pace Project No.: 6038273

Sample: MW #2		Lab ID: 6038273001	Collected: 04/04/08 12:30	Received: 04/08/08 08:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water		Analytical Method: EPA 8260						
Benzene	ND	ug/L	1.0	1		04/12/08 08:41	71-43-2	
Ethylbenzene	1.3	ug/L	1.0	1		04/12/08 08:41	100-41-4	
Toluene	ND	ug/L	1.0	1		04/12/08 08:41	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		04/12/08 08:41	1330-20-7	
Dibromofluoromethane (S)	99	%	85-114	1		04/12/08 08:41	1868-53-7	
Toluene-d8 (S)	102	%	82-114	1		04/12/08 08:41	2037-26-5	
4-Bromofluorobenzene (S)	100	%	85-119	1		04/12/08 08:41	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	81-118	1		04/12/08 08:41	17060-07-0	
Preservation pH	1.0		1.0	1		04/12/08 08:41		

Date: 04/15/2008 05:50 PM

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JACQUEZ COM A #1
Pace Project No.: 6038273

Sample: MW #3		Lab ID: 6038273002	Collected: 04/04/08 11:50	Received: 04/08/08 08:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water		Analytical Method: EPA 8260						
Benzene	ND	ug/L	1.0	1		04/12/08 08:57	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		04/12/08 08:57	100-41-4	
Toluene	ND	ug/L	1.0	1		04/12/08 08:57	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		04/12/08 08:57	1330-20-7	
Dibromofluoromethane (S)	99 %		85-114	1		04/12/08 08:57	1868-53-7	
Toluene-d8 (S)	99 %		82-114	1		04/12/08 08:57	2037-26-5	
4-Bromofluorobenzene (S)	92 %		85-119	1		04/12/08 08:57	460-00-4	
1,2-Dichloroethane-d4 (S)	106 %		81-118	1		04/12/08 08:57	17060-07-0	
Preservation pH	1.0		1.0	1		04/12/08 08:57		

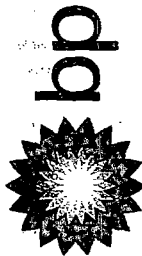
Date: 04/15/2008 05:50 PM

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Chain of Custody Record

Project Name: JACQUES CORN A #1
BP BU/AR Region/Enfos Segment: SAN JUAN DE LOS RIOS
State or Lead Regulatory Agency: NM OGD
Requested Due Date (mm/dd/yy): 4/18/08

156387

Page 1 of 1

On-site Time: 11:00 Temp: 53°F
Off-site Time: 12:45 Temp: 57°F
Sky Conditions: SUNNY
Meteorological Events:
Wind Speed: 0-5 MPH Direction: WEST

Lab Name: <u>PAGE ANALYTICAL</u>	BP/AR Facility No.: <u>WR192506</u>	Consultant/Contractor: <u>BLAGE/WCS</u>
Address: <u>9608 LOIRET BLVD</u>	BP/AR Facility Address:	Address: <u>110 N. FOWLER ST.</u>
<u>LEXENIA, KS 66219</u>	Site Lat/Long:	Consultant/Contractor Project No.: <u>41008810</u>
Lab PM: <u>MARY JANE WALLS</u>	California Global ID No.:	Consultant/Contractor PM: <u>NELSON VELEZ</u>
Tele/Fax: <u>(913) 599-5665 FAX: (913) 599-1759</u>	Enfos Project No.: <u>00194</u>	Tele/Fax: <u>(505) 632-1199 FAX: (505) 632-3988</u>
BP/AR PM Contact: <u>MIKE WHELAN, PG</u>	Provision or RCOP (circle one)	Report Type & QC Level: <u>STANDARD</u>
Address: <u>501 WESTLAKE PARK BLVD.</u>	Phase/WBS:	E-mail EDD To: <u>61999-21V@yaho.com</u>
<u>RM. 28, 1448 Houston, TX 77079</u>	Sub Phase/Task:	Invoice to: Consultant or BP or Atlantic Richfield Co. (circle one)
Tele/Fax: <u>(281) 366-7485 FAX: (281) 366-7094</u>	Cost Element:	

Item No.	Sample Description	Time	Date	Matrix	Laboratory No.	No. of Containers	Preservative					Requested Analysis				Sample Point Lat/Long and Comments
							Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	BTEX/TPH	BTEX/Oxy/TPH	EPA 8260	EPA 8270	
1	MW #2	4/4/08	1230	✓		3		✓							6338273	
2	MW #3	4/4/08	1150	✓		3		✓							001	
3															002	
4																
5																
6																
7																
8																
9																
10																

Sampler's Name: <u>NELSON VELEZ</u>	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: <u>BLAGE ENGINEERING, LLC</u>	<u>MILTON V. - BLAGE EVER.</u>	<u>4/7/08</u>	<u>1530</u>	<u>SS</u>	<u>9/8/08</u>	<u>SS</u>
Shipment Date: <u>APRIL 7, 2008</u>						
Shipment Method: <u>FED EX OVERNITE</u>						
Shipment Tracking No:						
Special Instructions: <u>REPORT BTEX CONSTITUENTS ONLY.</u>	<u>SAN JUAN COUNTY, NM</u>					
Custody Seals In Place Yes ☒ No ☐	Temp Blank Yes ☒ No ☐	Cooler Temperature on Receipt <u>39 °F</u>	Trip Blank Yes ☒ No ☐			

SAMPLE SUMMARY

Project: JACQUEZ COM A #1
Pace Project No.: 6038273

Lab ID	Sample ID	Matrix	Date Collected	Date Received
6038273001	MW #2	Water	04/04/08 12:30	04/08/08 08:45
6038273002	MW #3	Water	04/04/08 11:50	04/08/08 08:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: JACQUEZ COM A #1
Pace Project No.: 6038273

Lab ID	Sample ID	Method	Analysts	Analytes Reported
6038273001	MW #2	EPA 8260	JKL	9
6038273002	MW #3	EPA 8260	JKL	9

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: JACQUEZ COM A #1
Pace Project No.: 6038273

Method: EPA 8260
Description: 8260 MSV UST, Water
Client: BP-Blagg Engineering
Date: April 15, 2008

General Information:

2 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/13967

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JACQUEZ COM A #1
Pace Project No.: 6038273

QC Batch: MSV/13967 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 6038273001, 6038273002

METHOD BLANK: 311355

Associated Lab Samples: 6038273001, 6038273002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Benzene	ug/L	ND	1.0	
Ethylbenzene	ug/L	ND	1.0	
Toluene	ug/L	ND	1.0	
Xylene (Total)	ug/L	ND	3.0	
1,2-Dichloroethane-d4 (S)	%	108	81-118	
4-Bromofluorobenzene (S)	%	93	85-119	
Dibromofluoromethane (S)	%	99	85-114	
Toluene-d8 (S)	%	101	82-114	

LABORATORY CONTROL SAMPLE: 311356

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	10	9.2	92	87-117	
Ethylbenzene	ug/L	10	8.9	89	84-123	
Toluene	ug/L	10	8.7	87	81-124	
Xylene (Total)	ug/L	30	26.7	89	83-125	
1,2-Dichloroethane-d4 (S)	%			106	81-118	
4-Bromofluorobenzene (S)	%			91	85-119	
Dibromofluoromethane (S)	%			101	85-114	
Toluene-d8 (S)	%			101	82-114	

Date: 04/15/2008 05:50 PM

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QUALIFIERS

Project: JACQUEZ COM A #1
Pace Project No.: 6038273

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

BATCH QUALIFIERS

Batch: MSV/13967

[1] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: JACQUEZ COM A #1
Pace Project No.: 6038273

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
6038273001	MW #2	EPA 8260	MSV/13967		
6038273002	MW #3	EPA 8260	MSV/13967		

Date: 04/15/2008 05:50 PM

REPORT OF LABORATORY ANALYSIS

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Client Name: BoursProject # 6038273Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____Tracking #: 499 4348 715Custody Seal on Cooler/Box Present: ☒ Yes ☐ No Seals intact: ☒ Yes ☐ NoPacking Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____Thermometer Used: T-168 T-169Type of Ice: Wet Blue None ☐☐ Samples on ice, cooling process has begunCooler Temperature: 36

Biological Tissue Is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Optional

Proj. Due Date:

Proj. Name: 4/18/08Ingraz 26-AH1

Date and Initials of person examining

contents: mw 4/18/08mw mw

Chain of Custody Present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody Filled Out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody Relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler Name & Signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time Analysis (<72hr):	☐ Yes ☒ No ☐ N/A	6.
Rush Turn Around Time Requested:	☐ Yes ☒ No ☐ N/A	7.
Sufficient Volume:	☒ Yes ☐ No ☐ N/A	8.
Correct Containers Used:	☒ Yes ☐ No ☐ N/A	9.
-Pace Containers Used:	☒ Yes ☐ No ☐ N/A	
Containers Intact:	☒ Yes ☐ No ☐ N/A	10.
Filtered volume received for Dissolved tests	☐ Yes ☐ No ☒ N/A	11.
Sample Labels match COC:	☒ Yes ☐ No ☐ N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>LS</u>		
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	
exceptions: <u>VOA</u> , coliform, TOC, O&G, WI-DRO (water)	☒ Yes ☐ No	Initial when completed <u>mw</u>
Samples checked for dechlorination:	☐ Yes ☐ No ☒ N/A	Lot # of added preservative
Headspace in VOA Vials (>6mm):	☐ Yes ☒ No ☐ N/A	15.
Trip Blank Present:	☒ Yes ☐ No ☐ N/A	16.
Trip Blank Custody Seals Present	☐ Yes ☒ No ☐ N/A	
Pace Trip Blank Lot # (if purchased): <u>63708-3</u>		<u>3 TB sent w/ multiple preservatives</u>

Client Notification/ Resolution:

Field Data Required?

Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review:

mw 4/19/08

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

JACQUES COM A # 1

LABORATORY (S) USED : PACE ANALYTICAL

UNIT M, SEC. 25, T30N, R9W

Date : June 23, 2008

SAMPLER : N J V

Filename : 06-23-08.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)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	99.00	85.00	14.00	22.50	-	-	-	-	-
2	97.37	85.02	12.35	21.50	1050	7.42	2,400	20.9	2.00
3	97.71	84.96	12.75	22.50	1030	7.30	2,600	18.8	4.75

INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00

2,800

DATE & TIME =

06/23/08

0634

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

Ideally a minimum of three (3) wellbore volumes:

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

Comments or note well diameter if not standard 2."

Excellent recovery in MW #3, fair / poor recovery in MW #2. Both showed murky brown appearance, no apparent hydrocarbon odor in MW #2. Collected samples for BTEX per US EPA Method 8260 from MW #2 & #3 only.

Top of casings : MW #1 ~ 3.20 ft., MW #2 ~ 2.10 ft., MW #3 ~ 2.60 ft. above grade.

on-site	9:49	temp	82
off-site	11:00	temp	86
sky cond.	sunny		
wind speed	0-5	direct.	north

ANALYTICAL RESULTS

Project: JACQUES COM A 1
Pace Project No.: 6042387

Sample: MW #2		Lab ID: 6042387001	Collected: 06/23/08 10:50	Received: 06/25/08 09:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		06/27/08 01:32	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		06/27/08 01:32	100-41-4	
Toluene	ND ug/L		1.0	1		06/27/08 01:32	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		06/27/08 01:32	1330-20-7	
Dibromofluoromethane (S)	95 %		85-114	1		06/27/08 01:32	1868-53-7	
Toluene-d8 (S)	102 %		82-114	1		06/27/08 01:32	2037-26-5	
4-Bromofluorobenzene (S)	100 %		85-119	1		06/27/08 01:32	460-00-4	
1,2-Dichloroethane-d4 (S)	93 %		81-118	1		06/27/08 01:32	17060-07-0	
Preservation pH	1.0		1.0	1		06/27/08 01:32		

Date: 06/27/2008 04:26 PM

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ANALYTICAL RESULTS

Project: JACQUES COMA 1
Pace Project No.: 6042387

Sample: MW #3		Lab ID: 6042387002	Collected: 06/23/08 10:30	Received: 06/25/08 09:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		06/27/08 01:47	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		06/27/08 01:47	100-41-4	
Toluene	ND ug/L		1.0	1		06/27/08 01:47	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		06/27/08 01:47	1330-20-7	
Dibromofluoromethane (S)	97 %		85-114	1		06/27/08 01:47	1868-53-7	
Toluene-d8 (S)	101 %		82-114	1		06/27/08 01:47	2037-26-5	
4-Bromofluorobenzene (S)	100 %		85-119	1		06/27/08 01:47	460-00-4	
1,2-Dichloroethane-d4 (S)	97 %		81-118	1		06/27/08 01:47	17060-07-0	
Preservation pH	1.0		1.0	1		06/27/08 01:47		

Date: 06/27/2008 04:26 PM

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Atlantic Richfield Company

A BP affiliated company

Chain of Custody Record

Project Name: JACQUES COM A1
 BP BU/AR Region/Enfos Segment: SJOC SOUTH
 State or Lead Regulatory Agency: NMOC
 Requested Due Date (mm/dd/yy): 6/27/08

Page 1 of 1

On-site Time: 9:49 Temp: 82°F
 Off-site Time: 11:00 Temp: 86°F
 Sky Conditions: Sunny
 Meteorological Events:
 Wind Speed: D-5 Direction: North

Lab Name: Pace Analytical Services, Inc.		BP/AR Facility No.:	
Address: 9609 Loiret Blvd		BP/AR Facility Address:	
Lenexa, KS 66219		Site Lat/Long:	
Lab PM: MJ Walls		California Global ID No.:	
Tele/Fax: 913-563-1401		Enfos Project No.: 00194-0001	
BP/AR EMB: Mike Whelan		Provision or OOC (circle one)	
Address: 501 Westlake Park Blvd.		Phase/WBS:	
Rm28, 144B Houston, TX 77079		Sub Phase/Task:	
Tele: (281) 366-7485		Cost Element:	
Fax: (281) 366-7094			
Lab Bottle Order No: 17709			

Item No.	Sample Description	Time	Date	Matrix		Laboratory No.	No. of Containers	Preservative					Requested Analysis	Sample Point Lat/Long and Comments	
				Water/Liquid	Soil/Solid			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol			BTEX (8260)
1	MW #2	1050	6/23/08	✓		001	3							3106244	
2	MW #3	1030	6/23/08	✓		002	3								
3															
4															
5															
6															
7															
8															
9															
10															

Sampler's Name: NELSON VELEZ		Relinquished By / Affiliation: Nelson Velez		Date: 6/25/08	Time: 900
Sampler's Company: BLASS ENER., INC.		Date: 6/25/08			
Shipment Date: 6/25/08		Shipment Method: FED. EX.			
Shipment Tracking No: 8643 6004 9740		Special Instructions: REPORT BTEX CONSTITUENTS ONLY.		SAN JUAN COUNTY, N.M.	
Custody Seals In Place: Yes/No		Temp Blank: Yes/No		Cooler Temp on Receipt: 3.5 °F/C	
Trip Blank: Yes/No		MS/MSD Sample Submitted: Yes/No		BP COC Rev. 5 10/17/05	



SAMPLE SUMMARY

Project: JACQUES COM A 1
Pace Project No.: 6042387

Lab ID	Sample ID	Matrix	Date Collected	Date Received
6042387001	MW #2	Water	06/23/08 10:50	06/25/08 09:00
6042387002	MW #3	Water	06/23/08 10:30	06/25/08 09:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: JACQUES COM A 1
Pace Project No.: 6042387

Lab ID	Sample ID	Method	Analysts	Analytes Reported
6042387001	MW #2	EPA 8260	SSM	9
6042387002	MW #3	EPA 8260	SSM	9

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: JACQUES COM A 1
Pace Project No.: 6042387

Method: EPA 8260
Description: 8260 MSV UST, Water
Client: BP-Blagg Engineering
Date: June 27, 2008

General Information:

2 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/15384

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JACQUES COMA 1
Pace Project No.: 6042387

QC Batch: MSV/15384 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 6042387001, 6042387002

METHOD BLANK: 344275

Associated Lab Samples: 6042387001, 6042387002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Benzene	ug/L	ND	1.0	
Ethylbenzene	ug/L	ND	1.0	
Toluene	ug/L	ND	1.0	
Xylene (Total)	ug/L	ND	3.0	
1,2-Dichloroethane-d4 (S)	%	95	81-118	
4-Bromofluorobenzene (S)	%	101	85-119	
Dibromofluoromethane (S)	%	94	85-114	
Toluene-d8 (S)	%	103	82-114	

LABORATORY CONTROL SAMPLE: 344276

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	10	9.1	91	87-117	
Ethylbenzene	ug/L	10	9.6	96	84-123	
Toluene	ug/L	10	9.4	94	81-124	
Xylene (Total)	ug/L	30	27.3	91	83-125	
1,2-Dichloroethane-d4 (S)	%			94	81-118	
4-Bromofluorobenzene (S)	%			103	85-119	
Dibromofluoromethane (S)	%			97	85-114	
Toluene-d8 (S)	%			101	82-114	

Date: 06/27/2008 04:26 PM

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: JACQUES COM A 1
Pace Project No.: 6042387

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

BATCH QUALIFIERS

Batch: MSV/15384

[1] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: JACQUES COM A 1
Pace Project No.: 6042387

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
6042387001	MW #2	EPA 8260	MSV/15384		
6042387002	MW #3	EPA 8260	MSV/15384		

Date: 06/27/2008 04:26 PM

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Client Name: BP BLACCProject # 6042587Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____Tracking #: ON LOCCustody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ noPacking Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used

T-169 / 1-179Type of Ice: ☒ Wet ☐ Blue ☐ None☐ Samples on ice, cooling process has begun

Cooler Temperature

3-5

Biological Tissue Is Frozen: Yes No

Comments:

Date and Initials of person examining

contents: BN 6/25

S: 1006 E: 1015

Chain of Custody Present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody Filled Out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody Relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler Name & Signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time Analysis (<72hr):	☐ Yes ☒ No ☐ N/A	6.
Rush Turn Around Time Requested:	☒ Yes ☐ No ☐ N/A	7. <u>2 DAY</u>
Sufficient Volume:	☒ Yes ☐ No ☐ N/A	8.
Correct Containers Used:	☒ Yes ☐ No ☐ N/A	9.
-Pace Containers Used:	☒ Yes ☐ No ☐ N/A	
Containers Intact:	☒ Yes ☐ No ☐ N/A	10.
Filtered volume received for Dissolved tests	☐ Yes ☒ No ☐ N/A	11.
Sample Labels match COC:	☒ Yes ☐ No ☐ N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>		
All containers needing preservation have been checked.	☐ Yes ☐ No ☒ N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes ☐ No ☒ N/A	
exceptions: <u>VOA</u> coliform, TOC, O&G, WI-DRO (water)	☒ Yes ☐ No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	☐ Yes ☐ No ☒ N/A	14.
Headspace in VOA Vials (>6mm):	☐ Yes ☒ No ☐ N/A	15.
Trip Blank Present:	☐ Yes ☒ No ☐ N/A	16.
Trip Blank Custody Seals Present	☐ Yes ☒ No ☐ N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required?

Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: mu 6/25/08

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

JACQUES COM A # 1

LABORATORY (S) USED : HALL ENVIRONMENTAL

UNIT M, SEC. 25, T30N, R9W

Date : August 25, 2008

SAMPLER : N J V

Filename : 08-25-08.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)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	99.00	84.35	14.65	22.50	-	-	-	-	-
2	97.37	84.35	13.02	21.50	1210	7.23	3,100	22.5	2.00
3	97.71	84.28	13.43	22.50	1150	7.26	2,500	23.4	4.50

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	08/25/08	0730

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

Ideally a minimum of three (3) wellbore volumes:

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

Comments or note well diameter if not standard 2 "

Excellent recovery in MW # 3 , fair / poor recovery in MW # 2 . Both showed murky brown appearance , no apparent hydrocarbon odor in MW # 2 . Collected samples for BTEX per US EPA Method 8021B from MW # 2 & # 3 only .

Top of casings : MW # 1 ~ 3.20 ft. , MW # 2 ~ 2.10 ft. , MW # 3 ~ 2.60 ft. above grade .

on-site	11:14	temp	82
off-site	12:22	temp	86
sky cond.	Mostly sunny		
wind speed	0-5	direct.	southwest

Hall Environmental Analysis Laboratory, Inc.

Date: 05-Sep-08

CLIENT: Blagg Engineering
Project: Jacques Com A #1**Lab Order:** 0808411**Lab ID:** 0808411-01**Collection Date:** 8/25/2008 12:10:00 PM**Client Sample ID:** MW #2**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	1.0		µg/L	1	9/5/2008 1:04:00 AM
Toluene	ND	1.0		µg/L	1	9/5/2008 1:04:00 AM
Ethylbenzene	ND	1.0		µg/L	1	9/5/2008 1:04:00 AM
Xylenes, Total	ND	2.0		µg/L	1	9/5/2008 1:04:00 AM
Surr: 4-Bromofluorobenzene	109	65.9-130		%REC	1	9/5/2008 1:04:00 AM

Lab ID: 0808411-02**Collection Date:** 8/25/2008 11:50:00 AM**Client Sample ID:** MW #3**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	1.0		µg/L	1	9/5/2008 1:34:16 AM
Toluene	ND	1.0		µg/L	1	9/5/2008 1:34:16 AM
Ethylbenzene	ND	1.0		µg/L	1	9/5/2008 1:34:16 AM
Xylenes, Total	ND	2.0		µg/L	1	9/5/2008 1:34:16 AM
Surr: 4-Bromofluorobenzene	88.6	65.9-130		%REC	1	9/5/2008 1:34:16 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

QA/QC SUMMARY REPORT

Client: Blagg Engineering
 Project: Jacques Com A #1

Work Order: 0808411

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

Method: EPA Method 8021B: Volatiles

Sample ID: 5ML RB MBLK Batch ID: R30082 Analysis Date: 9/4/2008 8:51:58 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	2.0

Sample ID: 100NG BTEX LCS LCS Batch ID: R30082 Analysis Date: 9/5/2008 3:05:27 AM

Benzene	18.11	µg/L	1.0	90.6	85.9	113
Toluene	17.59	µg/L	1.0	87.9	86.4	113
Ethylbenzene	18.40	µg/L	1.0	92.0	83.5	118
Xylenes, Total	55.02	µg/L	2.0	91.7	83.4	122

Sample ID: 100NG BTEX LCSD LCSD Batch ID: R30082 Analysis Date: 9/5/2008 3:35:48 AM

Benzene	17.66	µg/L	1.0	88.3	85.9	113	2.54	27	
Toluene	16.79	µg/L	1.0	84.0	86.4	113	4.62	19	S
Ethylbenzene	17.64	µg/L	1.0	88.2	83.5	118	4.23	10	
Xylenes, Total	52.31	µg/L	2.0	87.2	83.4	122	5.05	13	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG**

Date Received:

8/26/2008

Work Order Number 0808411

Received by: **ARS**

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name **UPS**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

4°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action