District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

# Release Notification and Corrective Action

30045 08670

## OPERATOR

☐ Initial Report ☒ Final Report

| | | | |
|---|---|---|---|
| Name of Company | BP America Production Company | Contact | Buddy Shaw |
| Address | 200 Energy Court, Farmington, NM 87410 | Telephone No. | (505) 326-9200 |
| Facility Name | Archuleta Gas Com A #1 | Facility Type | Active gas well |

| | | |
|---|---|---|
| Surface Owner Telesforo Archuleta Trustees | Mineral Owner | Lease No. Fee |

## LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---|---|---|---|---|---|---|---|---|
| K | 5 | 29.0N | 09.0W | | | | | San Juan |

Latitude 36.750944 Longitude 107.806911

## NATURE OF RELEASE

| | | | |
|---|---|---|---|
| Type of Release | Historical | Volume of Release unknown | Volume Recovered 0 |
| Source of Release | Abandoned earthen pit | Date and Hour of Occurrence ? | Date and Hour of Discovery 6/12/07 1100 |
| Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required | | If YES, To Whom? | |
| By Whom? | | Date and Hour | |
| Was a Watercourse Reached? ☐ Yes ☒ No | | If YES, Volume Impacting the Watercourse. | |

RCVD NOV 18'09
OIL CONS. DIV.
DIST. 3

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Gas well drilled in 1954, earthen pit adjacent to well head abandoned at unknown time. Construction crew hired to repipe/redirect flow line discovered discolored, impacted soil. Soil sampled, field screened, laboratory tested in June 2007.

Describe Area Affected and Cleanup Action Taken.*

Investigation & excavation of impacted soils completed in May 2009 (see attached site map). Groundwater monitor well installed and sampled in October 2009 (analytical data attached). **CLOSURE REQUESTED.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

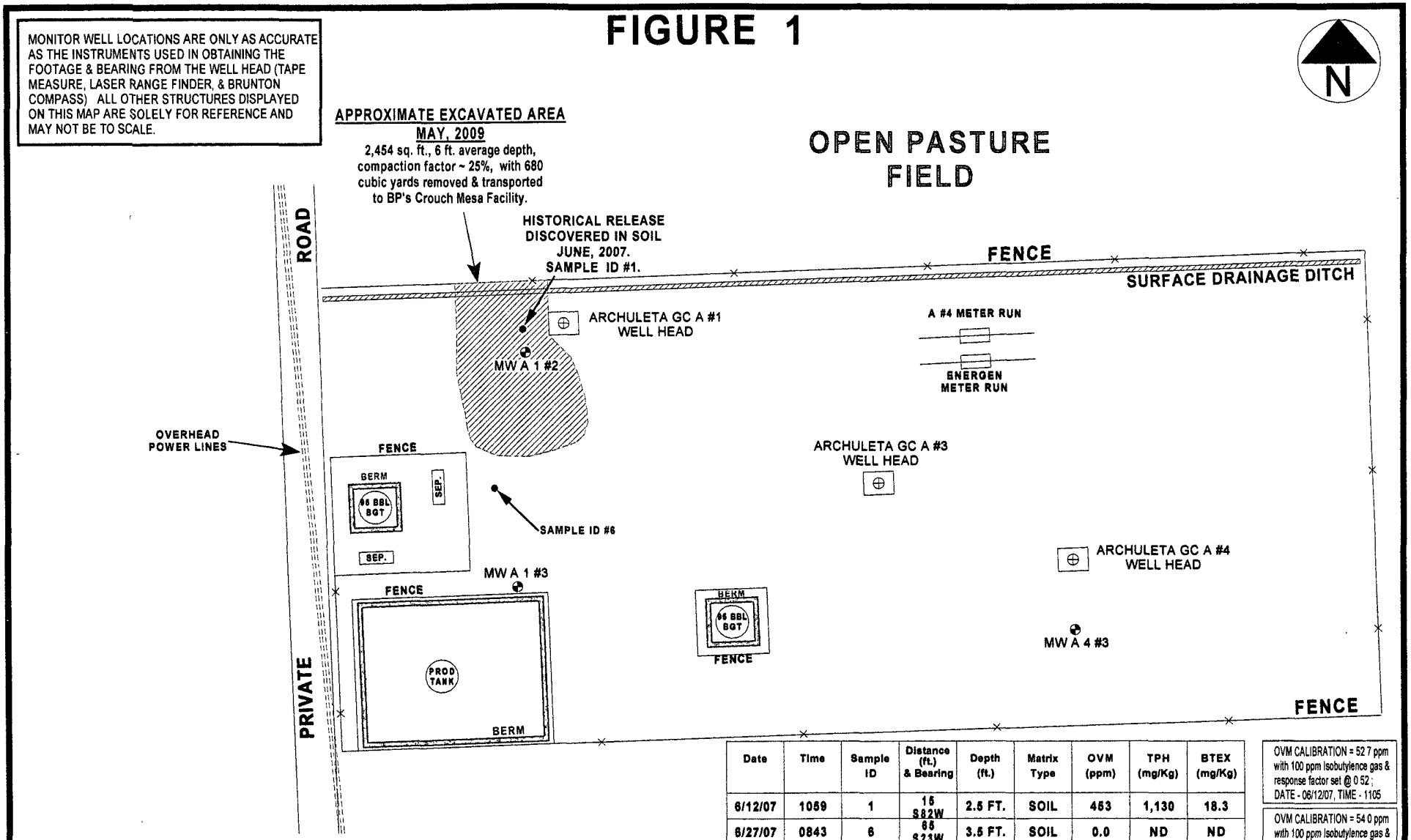
| | |
|---|---|
| Signature: Buddy Shaw | OIL CONSERVATION DIVISION |
| Printed Name: Buddy Shaw | Approved by District Supervisor: For: CP |
| Title: Environmental Coordinator | Approval Date: 1-6-10 Expiration Date: |
| E-mail Address: buddy.shaw@bp.com | Conditions of Approval: Attached ☐ |
| Date: 11/11/09 Phone: (505) 326-9200 | |

* Attach Additional Sheets If Necessary

nRMD1000831074

# FIGURE 1

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.




| Date | Time | Sample ID | Distance (ft.) & Bearing | Depth (ft.) | Matrix Type | OVM (ppm) | TPH (mg/Kg) | BTEX (mg/Kg) |
|---|---|---|---|---|---|---|---|---|
| 6/12/07 | 1059 | 1 | 15 S82W | 2.5 FT. | SOIL | 453 | 1,130 | 18.3 |
| 6/27/07 | 0843 | 6 | 65 S23W | 3.5 FT. | SOIL | 0.0 | ND | ND |
| NMOCD RELEASE GUIDELINES CLOSURE STANDARDS | | | | | | 100 | 100 | 50 |

OVM CALIBRATION = 52.7 ppm with 100 ppm Isobutylence gas & response factor set @ 0.52 ; DATE - 06/12/07, TIME - 1105

OVM CALIBRATION = 54.0 ppm with 100 ppm Isobutylence gas & response factor set @ 0.52 ; DATE - 06/27/07, TIME - 0800.

**NOTES:** OVM - organic vapor meter or photolonization detector (PID), TPH - total petroleum hydrocarbons, BTEX - benzene, toluene, ethylbenzene, total xylenes, ppm - parts per million, mg/Kg - milligrams per kilograms

BP AMERICA PRODUCTION CO.
ARCHULETA GC A # 1
NE/4 SW/4 SEC. 5, T29N, 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: REMEDIATION
DRAWN BY: NJV
FILENAME: ARCHULETA GC A 1 SM.SKF
REVISED: 11-04-09

SITE MAP
10/09

# Hall Environmental Analysis Laboratory, Inc.

**Date:** *26-Jun-07*

| | | | |
|---|---|---|---|
| **CLIENT:** | Blagg Engineering | **Client Sample ID:** | 1 @ 2.5'- Sale's Line Piping |
| **Lab Order:** | 0706222 | **Collection Date:** | 6/12/2007 10:59:00 AM |
| **Project:** | Archuleta GC A #1 | **Date Received:** | 6/14/2007 |
| **Lab ID:** | 0706222-01 | **Matrix:** | SOIL |

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015B: DIESEL RANGE ORGANICS** | | | | | | Analyst: **SCC** |
| Diesel Range Organics (DRO) | 620 | 10 | | mg/Kg | 1 | 6/20/2007 10:56:27 AM |
| Surr: DNOP | 124 | 61.7-135 | | %REC | 1 | 6/20/2007 10:56:27 AM |
| **EPA METHOD 8015B: GASOLINE RANGE** | | | | | | Analyst: **NSB** |
| Gasoline Range Organics (GRO) | 510 | 100 | | mg/Kg | 20 | 6/21/2007 12:48:45 PM |
| Surr: BFB | 205 | 84-138 | S | %REC | 20 | 6/21/2007 12:48:45 PM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** |
| Benzene | ND | 1.0 | | mg/Kg | 20 | 6/21/2007 12:48:45 PM |
| Toluene | ND | 1.0 | | mg/Kg | 20 | 6/21/2007 12:48:45 PM |
| Ethylbenzene | 1.3 | 1.0 | | mg/Kg | 20 | 6/21/2007 12:48:45 PM |
| Xylenes, Total | 17 | 2.0 | | mg/Kg | 20 | 6/21/2007 12:48:45 PM |
| Surr: 4-Bromofluorobenzene | 101 | 68.2-109 | | %REC | 20 | 6/21/2007 12:48:45 PM |
| **EPA METHOD 9056A: ANIONS** | | | | | | Analyst: **KS** |
| Chloride | ND | 6.0 | | mg/Kg | 20 | 6/23/2007 6:07:15 PM |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | MCL | Maximum Contaminant Level |
| ND | Not Detected at the Reporting Limit | RL | Reporting Limit |
| S | Spike recovery outside accepted recovery limits | | |

# CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:


**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com


Client: BLAGG ENGR. / BP AMERICA
Address: P.O. BOX 87
BLFD., NM 87413
Phone #: 632-1199
Fax #:

Project Name: ARMENTA GC A #1
Project #:
Project Manager: NV
Sampler: NV
Sample Temperature: 6

## ANALYSIS REQUEST

| Date | Time | Matrix | Sample I.D. No. | Number/Volume | Preservative: $HgCl_2$ | Preservative: $HNO_3$ | Preservative: COOL | HEAL No. | (BTEX + MTBE + TMB's (8021B) | BTEX + MTBE + TPH (Gasoline Only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | EDC (Method 8021) | 8310 (PNA or PAH) | RCRA 8 Metals | Anions ($F$, $Cl$, $NO_3$, $NO_2$, $PO_4$, $SO_4$) | 8081 Pesticides / PCB's (8082) | 8260B (VOA) | 8270 (Semi-VOA) | CHLORIDE | | | | Air Bubbles or Headspace (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/12/07 | 1059 | SOIL | ① C 2.5' - SALES LINE PIANG | 1-4 oz. | | | ✓ | 07060222 1 | ✓ | | ✓ | | | | | | | | | | ✓ | | | | |

| Date: | Time: | Relinquished By: (Signature) | Received By: (Signature) | |
|---|---|---|---|---|
| 6/13/07 | 1530 | | | 6/14/07 1419 |
| Date: | Time: | Relinquished By: (Signature) | Received By: (Signature) | |

Remarks: GAS & DIESEL RANGES ONLY ON TPH ANALYSIS.

**Hall Environmental Analysis Laboratory, Inc.** Date: *26-Jun-07*

**CLIENT:** Blagg Engineering
**Project:** Archuleta GC A #1
**Lab Order:** 0706222

## CASE NARRATIVE

Analytical Comments for METHOD 8015GRO_S, SAMPLE 0706222-01A: Elevated surrogate due to matrix interference.

# QA/QC SUMMARY REPORT

**Client:** Blagg Engineering
**Project:** Archuleta GC A #1 **Work Order:** 0706222

| Analyte | Result | Units | PQL | %Rec | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **Method: SW8015** | | | | | | | | | |
| **Sample ID: MB-13195** | | *MBLK* | | | Batch ID: | 13195 | Analysis Date: | 6/17/2007 10:08:46 PM | |
| Diesel Range Organics (DRO) | ND | mg/Kg | 10 | | | | | | |
| **Sample ID: LCS-13195** | | *LCS* | | | Batch ID: | 13195 | Analysis Date: | 6/17/2007 10:43:59 PM | |
| Diesel Range Organics (DRO) | 38.35 | mg/Kg | 10 | 76.7 | 64.6 | 116 | | | |
| **Sample ID: LCSD-13195** | | *LCSD* | | | Batch ID: | 13195 | Analysis Date: | 6/17/2007 11:19:12 PM | |
| Diesel Range Organics (DRO) | 41.50 | mg/Kg | 10 | 83.0 | 64.6 | 116 | 7.89 | 17.4 | |
| **Method: SW8015** | | | | | | | | | |
| **Sample ID: MB-13212** | | *MBLK* | | | Batch ID: | 13212 | Analysis Date: | 6/21/2007 11:17:21 AM | |
| Gasoline Range Organics (GRO) | ND | mg/Kg | 5.0 | | | | | | |
| **Sample ID: LCS-13212** | | *LCS* | | | Batch ID: | 13212 | Analysis Date: | 6/21/2007 11:47:48 AM | |
| Gasoline Range Organics (GRO) | 20.40 | mg/Kg | 5.0 | 81.6 | 69.5 | 120 | | | |
| **Method: SW8021** | | | | | | | | | |
| **Sample ID: MB-13212** | | *MBLK* | | | Batch ID: | 13212 | Analysis Date: | 6/21/2007 11:17:21 AM | |
| Benzene | ND | mg/Kg | 0.050 | | | | | | |
| Toluene | ND | mg/Kg | 0.050 | | | | | | |
| Ethylbenzene | ND | mg/Kg | 0.050 | | | | | | |
| Xylenes, Total | ND | mg/Kg | 0.10 | | | | | | |
| **Sample ID: LCS-13212** | | *LCS* | | | Batch ID: | 13212 | Analysis Date: | 6/21/2007 11:47:48 AM | |
| Benzene | 0.2669 | mg/Kg | 0.050 | 95.3 | 62.7 | 114 | | | |
| Toluene | 1.950 | mg/Kg | 0.050 | 97.5 | 68.2 | 121 | | | |
| Ethylbenzene | 0.3444 | mg/Kg | 0.050 | 86.1 | 71.4 | 115 | | | |
| Xylenes, Total | 2.123 | mg/Kg | 0.10 | 92.3 | 65 | 135 | | | |

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 and Time Received: 6/14/2007

Work Order Number 0706222 | Received by TLS

Checklist completed by Signature [signature] Date 6/14/07

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? | 6° | *4° C ± 2 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 # :** N / A

**ARCHULETA GC A # 1 / A # 4**
**UNIT K , SEC. 5 , T29N , R9W**

**LABORATORY (S) USED :** HALL ENVIRONMENTAL

*Date :* October 26, 2009 **DEVELOPER / SAMPLER :** N J V

*Filename :* 10-26-09.WK4 **PROJECT MANAGER :** J C B

| WELL # | WELL ELEV. (ft) | WATER ELEV. (ft) | DEPTH TO WATER (ft) | TOTAL DEPTH (ft) | SAMPLING TIME | pH | CONDUCT (umhos) | TEMP. (celcius) | VOLUME PURGED (gal.) |
|---|---|---|---|---|---|---|---|---|---|
| **A4 #3** | 101.57 | 98.26 | 3.31 | 13.19 | - | - | - | - | - |
| **A1 #2** | 103.76 | 99.72 | 4.04 | 12.63 | 1230 | 7.37 | 1,100 | 15.9 | 3.50 |
| **A1 #3** | 102.60 | 99.01 | 3.59 | 12.53 | - | - | - | - | - |

| | | |
|---|---|---|
| **INSTRUMENT CALIBRATIONS =** | 4.01/7.00/10.00 | 2,800 |
| **DATE & TIME =** | 10/26/09 | 1030 |

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

Comments or note well diameter if not standard 2 ".

**MW A 1 # 2 - good recovery , olive gray color in appearance , purged to total depth , allowed recovery to ~ 8.25 ft. , then collected samples . Samples from MW A 1 # 2 analyzed for BTEX per US EPA Method 8021B , total dissolved solids , chloride , fluoride , nitrate , ferrous iron , & sulfate .**

**Monitor well top elevations surveyed on 10 / 22 / 09 .**

**Top of casing MW A 4 #3 ~ 2.50 ft. , MW A 1 # 2 ~ 2.30 ft. , MW A 1 # 3 ~ 2.20 ft. above grade .**

| | | | |
|---|---|---|---|
| on-site | 11:20 | temp | 44 F |
| off-site | 12:40 | temp | 47 F |
| sky cond. | mostly sunny | | |
| wind speed | 0 - 5 | direct. | SE |

# Hall Environmental Analysis Laboratory, Inc.

**Date:** *03-Nov-09*

| | | | |
|---|---|---|---|
| **CLIENT:** | Blagg Engineering | **Client Sample ID:** | MW A1 #2 |
| **Lab Order:** | 0910479 | **Collection Date:** | 10/26/2009 12:30:00 PM |
| ***Project:*** | Archuleta GC A #1 | **Date Received:** | 10/27/2009 |
| **Lab ID:** | 0910479-01 | **Matrix:** | AQUEOUS |

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** |
| Benzene | ND | 1.0 | | µg/L | 1 | 10/30/2009 12:05:09 AM |
| Toluene | 1.9 | 1.0 | | µg/L | 1 | 10/30/2009 12:05:09 AM |
| Ethylbenzene | ND | 1.0 | | µg/L | 1 | 10/30/2009 12:05:09 AM |
| Xylenes, Total | 170 | 2.0 | | µg/L | 1 | 10/30/2009 12:05:09 AM |
| Surr: 4-Bromofluorobenzene | 103 | 65.9-130 | | %REC | 1 | 10/30/2009 12:05:09 AM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **TAF** |
| Fluoride | 0.59 | 0.10 | | mg/L | 1 | 10/27/2009 1:56:33 PM |
| Chloride | 24 | 2.0 | | mg/L | 20 | 10/27/2009 2:13:58 PM |
| Nitrogen, Nitrate (As N) | ND | 0.10 | | mg/L | 1 | 10/27/2009 1:56:33 PM |
| Sulfate | 260 | 10 | | mg/L | 20 | 10/27/2009 2:13:58 PM |
| **EPA METHOD 6010B: DISSOLVED METALS** | | | | | | Analyst: **RAGS** |
| Iron | ND | 0.020 | | mg/L | 1 | 10/30/2009 11:09:57 AM |
| **SM2540C MOD: TOTAL DISSOLVED SOLIDS** | | | | | | Analyst: **MMS** |
| Total Dissolved Solids | 885 | 20.0 | | mg/L | 1 | 10/30/2009 5:07:00 PM |

| | | | | | |
|---|---|---|---|---|---|
| **Qualifiers:** | * | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | E | Estimated value | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limits | MCL | Maximum Contaminant Level |
| | ND | Not Detected at the Reporting Limit | RL | Reporting Limit |
| | S | Spike recovery outside accepted recovery limits | | |

# Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: ARCHULETA GC A #1

Project #:

Project Manager: JEFF BLAGG

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.9


HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107


| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 0910179 | BTEX + ~~MTBE + TMB's~~ (8021B) | BTEX + MTBE + TPH (Gas only) | TPH Method 8015B (Gas/Diesel) | TPH (Method 418.1) | EDB (Method 504.1) | 8310 (PNA or PAH) | RCRA 8 Metals | Anions (F, Cl, $NO_3$, $NO_2$, $PO_4$, $SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | IRON, FERROUS | TDS | NITRATE-N / NITRITE-N | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/26/09 | 1230 | WATER | MW #A1 #2 | 2-40ml, 2-125ml | HCl + COOL | 1 | ✓ | | | | | | | | | | | ✓ | | | | |
| " | " | " | " | 1-500ml | COOL | 1 | | | | | | | | ✓ | | | | | ✓ | | | |
| " | " | " | " | 1-125ml | $H_2SO_4$ + COOL | 1 | | | | | | | | | | | | | | ✓ | | |

Date: 10/26/09 Time: 1630 Relinquished by:

Received by: Date: 10/27/09 Time: 940

Date: Time: Relinquished by:

Received by: Date: Time:

Remarks: $Fe^{2+}$ - FILTERED
IF ANION $NO_3$ CAN NOT BE ANALYZED WITHIN 48 HRS., THEN RUN NITRATE-N / NITRITE-N.

# QA/QC SUMMARY REPORT

**Client:** Blagg Engineering
**Project:** Archuleta GC A #1 **Work Order:** 0910479

| Analyte | Result | Units | PQL | SPK Va | SPK ref | %Rec | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method: EPA Method 300.0: Anions** | | | | | | | | | | | |
| **Sample ID: MB** | | *MBLK* | | | | Batch ID: | R35906 | Analysis Date: | 10/27/2009 10:10:16 AM | | |
| Fluoride | ND | mg/L | 0.10 | | | | | | | | |
| Chloride | ND | mg/L | 0.10 | | | | | | | | |
| Nitrogen, Nitrate (As N) | ND | mg/L | 0.10 | | | | | | | | |
| Sulfate | ND | mg/L | 0.50 | | | | | | | | |
| **Sample ID: SPLS Extraction Flu** | | *MBLK* | | | | Batch ID: | R35906 | Analysis Date: | 10/28/2009 1:32:57 AM | | |
| Fluoride | ND | mg/L | 0.10 | | | | | | | | |
| Chloride | ND | mg/L | 0.10 | | | | | | | | |
| Nitrogen, Nitrate (As N) | ND | mg/L | 0.10 | | | | | | | | |
| Sulfate | ND | mg/L | 0.50 | | | | | | | | |
| **Sample ID: MB** | | *MBLK* | | | | Batch ID: | R35925 | Analysis Date: | 10/28/2009 10:39:49 AM | | |
| Fluoride | ND | mg/L | 0.10 | | | | | | | | |
| Chloride | ND | mg/L | 0.10 | | | | | | | | |
| Nitrogen, Nitrate (As N) | ND | mg/L | 0.10 | | | | | | | | |
| Sulfate | ND | mg/L | 0.50 | | | | | | | | |
| **Sample ID: LCS** | | *LCS* | | | | Batch ID: | R35906 | Analysis Date: | 10/27/2009 10:27:40 AM | | |
| Fluoride | 0.5436 | mg/L | 0.10 | 0.5 | 0 | 109 | 90 | 110 | | | |
| Chloride | 5.218 | mg/L | 0.10 | 5 | 0 | 104 | 90 | 110 | | | |
| Nitrogen, Nitrate (As N) | 2.663 | mg/L | 0.10 | 2.5 | 0 | 107 | 90 | 110 | | | |
| Sulfate | 10.35 | mg/L | 0.50 | 10 | 0 | 104 | 90 | 110 | | | |
| **Sample ID: LCS** | | *LCS* | | | | Batch ID: | R35925 | Analysis Date: | 10/28/2009 10:57:13 AM | | |
| Fluoride | 0.5308 | mg/L | 0.10 | 0.5 | 0 | 106 | 90 | 110 | | | |
| Chloride | 5.050 | mg/L | 0.10 | 5 | 0 | 101 | 90 | 110 | | | |
| Nitrogen, Nitrate (As N) | 2.577 | mg/L | 0.10 | 2.5 | 0 | 103 | 90 | 110 | | | |
| Sulfate | 10.21 | mg/L | 0.50 | 10 | 0 | 102 | 90 | 110 | | | |
| **Method: EPA Method 8021B: Volatiles** | | | | | | | | | | | |
| **Sample ID: 5ML RB** | | *MBLK* | | | | Batch ID: | R35953 | Analysis Date: | 10/29/2009 8:23:38 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: | R35953 | Analysis Date: | 10/30/2009 3:36:59 AM | | |
| Benzene | 18.39 | µg/L | 1.0 | 20 | 0 | 91.9 | 85.9 | 113 | | | |
| Toluene | 18.18 | µg/L | 1.0 | 20 | 0 | 90.9 | 86.4 | 113 | | | |
| Ethylbenzene | 17.96 | µg/L | 1.0 | 20 | 0 | 89.8 | 83.5 | 118 | | | |
| Xylenes, Total | 52.51 | µg/L | 2.0 | 60 | 0 | 87.5 | 83.4 | 122 | | | |
| **Method: EPA Method 6010B: Dissolved Metals** | | | | | | | | | | | |
| **Sample ID: MB** | | *MBLK* | | | | Batch ID: | R35956 | Analysis Date: | 10/30/2009 10:43:04 AM | | |
| Iron | ND | mg/L | 0.020 | | | | | | | | |
| **Sample ID: LCS** | | *LCS* | | | | Batch ID: | R35956 | Analysis Date: | 10/30/2009 10:45:58 AM | | |
| Iron | 0.4796 | mg/L | 0.020 | 0.5 | 0 | 95.9 | 80 | 120 | | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| E | Estimated value | 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 |

# QA/QC SUMMARY REPORT

**Client:** Blagg Engineering
**Project:** Archuleta GC A #1 **Work Order:** 0910479

| Analyte | Result | Units | PQL | SPK Va | SPK ref | %Rec | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method: SM2540C MOD: Total Dissolved Solids** | | | | | | | | | | | |
| **Sample ID: MBLK-20459** | | *MBLK* | | | | Batch ID: | **20459** | Analysis Date: | 10/30/2009 5:07:00 PM | | |
| Total Dissolved Solids | ND | mg/L | 20.0 | | | | | | | | |
| **Sample ID: LCS1-20459** | | *LCS* | | | | Batch ID: | **20459** | Analysis Date: | 10/30/2009 5:07:00 PM | | |
| Total Dissolved Solids | 1012 | mg/L | 20.0 | 1000 | 0 | 101 | 80 | 120 | | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| E | Estimated value | 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: **10/27/2009**

Work Order Number **0910479** Received by: **TLS**

Checklist completed by: _____ 10/27/09 Sample ID labels checked by: _____
Signature Date Initials

Matrix: Carrier name: Greyhound

| | | | | |
|---|---|---|---|---|
| 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 ☐ | | Number of preserved bottles checked for pH: |
| Water - VOA vials have zero headspace? No VOA vials submitted ☐ | | Yes ☑ | No ☐ | |
| Water - Preservation labels on bottle and cap match? | Yes ☑ | No ☐ | N/A ☐ | 1 |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☑ | N/A ☐ | (<2) >12 unless noted below. |
| Container/Temp Blank temperature? | 1.9° | <6° C Acceptable If given sufficient time to cool. | | |

COMMENTS:

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Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: Added 2 ml HCl to ferrous Fe sample for acceptable ph. AS 10/27

Corrective Action _____