3R-1009

"Good Well Investigation"

Investigation Report

Date
June 2015

Done
10-20-15KR

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CONESTOGA-ROVERS
& ASSOCIATES

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June 18, 2015

Reference No. 074922-00

Mr. Jim Griswold
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 97505

OIL CONS. DIV DIST. 3
JUN 26 2015

Dear Mr. Griswold:

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Re: Request of Report Findings
San Juan 32 8 No. 30 Area Investigation
San Juan County, New Mexico

On March 11, 2015, representatives from Conestoga-Rovers and Associates (CRA) and ConocoPhillips Company (ConocoPhillips) met with the New Mexico Oil Conservation Division (NMOCD) and U.S. Bureau of Land Management (BLM) to discuss the findings of the report provided herein. That meeting was held at the ConocoPhillips offices in Farmington, New Mexico. The BLM representatives provided a verbal agreement with the findings of the report and did not request any additional information. The NMOCD proposed a series of questions in that meeting and in a follow up telephone conference. Responses to questioned posed by the NMOCD in that meeting and in the follow up telephone conference are provided in the attached document. Responses were limited to the scope of the investigation to date.

Should you have any questions or comments regarding this submittal, please contact CRA.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Christopher M. Fetters

CMF/dh/1

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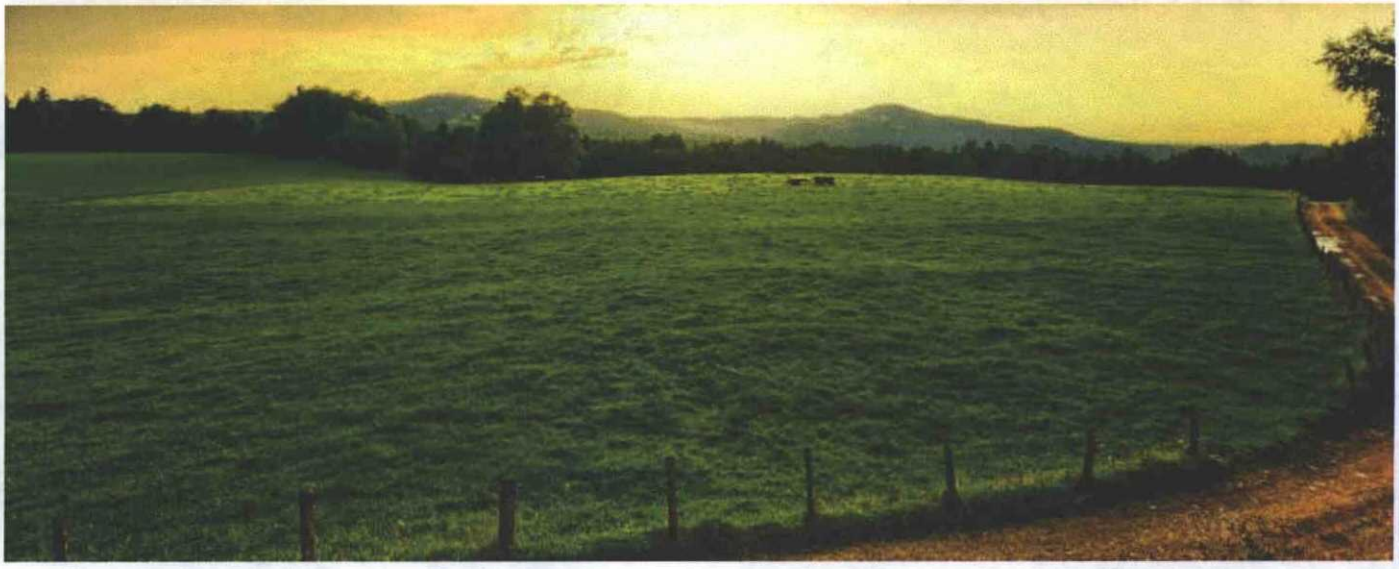

San Juan 32 8 No. 30 Area Investigation

Prepared for: ConocoPhillips Company

Conestoga-Rovers & Associates
5551 Corporate Boulevard, Suite 200
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May 2015 • 074922 (8)

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Section 1.0 Introduction

Conestoga-Rovers & Associates (CRA) submits herein to the ConocoPhillips Company (ConocoPhillips) this Interim Status Report (Report) that details 2013/2014 Groundwater Monitoring Events and assessment activities conducted within the vicinity of the plugged and abandoned (P&A) San Juan 32-8 No. 30 gas well (API No. 30-045-11217) in northeast San Juan County, New Mexico (Site). The San Juan 32-8 No. 30 gas well was installed in July 1958 and P&A in 1994. The purpose of the 2013 activities were to identify and/or delineate the vertical and horizontal extent of methane and hydrogen sulfide gases within the vicinity of the former San Juan 32-8 No. 30 and the former private water well San Juan 03250 (SJ 03250). The 2013 scope of work was based on the initial results from the installation of Monitor Well MW-1 in 2012 as reported in the Interim Status Report (2012 ISR) in July 2013. In addition, 2013 activities were intended to provide additional evidence that the former San Juan 32-8 No. 30 is no longer providing a pathway for Mesaverde gas to the shallow subsurface. A vicinity map of the Site is shown on **Figure 1.** Site assessment activities included the installation of three monitor wells (MW-2, MW-3, and MW-4) as shown on **Figure 2**. The monitor wells were completed as multilevel (i.e., multiple well screen intervals) wells to allow for collection of groundwater samples from discrete and isolated water bearing zones and gas samples from non-water bearing zones within a single well bore.

Regulatory Meeting

On June 20, 2013, representatives from ConocoPhillips and CRA met with the New Mexico Oil Conservation Division (NMOCD), and U.S. Bureau of Land Management (BLM) to discuss the preliminary results of the 2012 subsurface environmental investigation in the vicinity of the former San Juan 32-8 No. 30 well, and the proposed path forward for 2013. ConocoPhillips and CRA presented a plan to install three additional multi-level monitoring wells to further assess the hydrogeological setting of the Site and gather additional geochemical data for future hydrogen sulfide and methane migration modeling in the subsurface. At the conclusion of the meeting, the 2013 work activities were agreed upon by all attendees.

Section 2.0 Site Background

2.1 Site Setting

Land within San Juan County, New Mexico is primarily dedicated to agriculture and oil and gas (O&G) exploration and production (E&P). Oil and gas production is focused within two subsurface zones, the Fruitland Coal formation and the Mesaverde Group. The Fruitland Formation (approximately 3,160 feet below ground surface [ft bgs]) is a 350-feet thick coal bed methane (CBM) production zone comprised mainly of a dry natural gas. The Mesaverde Group

is composed of three distinct formations: the Cliff House Sandstone (approximately 5,520 ft bgs), Menefee Formation (approximately 5,580 ft bgs), and Point Lookout Sandstone (approximately 5,850 ft bgs). The major portion of natural gas produced comes from the Cliff House and Point Lookout Sandstones.

2.2 Physiography

The Site is located within the San Juan Basin of the Colorado Plateau physiographic province, as identified by the United States Geologic Survey (USGS). The Los Pinos River carved a north-south trending deep valley approximately 3.7 miles east of the Site as shown by the topographic map on **Figure 1**. The area adjacent to the monitor wells is drained by an intermittent stream flowing southward to join the San Juan River downstream of the Navajo Dam. However, the predominant slope of valleys in the Site vicinity is eastward toward Los Pinos River. Elevations in the Site vicinity are approximately 6,650 feet relative to the North American Vertical Datum (NAVD). The local valleys slope steeply downward to the east toward the Los Pinos River at an elevation of approximately 6,100 feet NAVD.

2.3 Geology

Geologic Tectonics and Structure

The San Juan Basin is located in the central portion of the Colorado Plateau. The Colorado Plateau is an area of mostly undeformed sedimentary deposits between the Rocky Mountain province to the east and the Basin and Range province to the west. The Colorado Plateau has been uplifted and eroded into canyons and mesas since the Miocene Epoch of the Cenozoic Era, during the last 20 million years. The central, thickest and deepest portion of the San Juan Basin lies southwest of the Site vicinity. The strata of the San Juan basin dip gently to the southwest in the Site vicinity.

Regional Geology

The bedrock in the region consists of the San Jose Formation. The San Jose Formation was deposited as terrestrial alluvial sediments during the lower Eocene Epoch of the Cenozoic Era, about 50 million years ago, during a period of uplift to the north and east of the region. The San Jose Formation is composed of four members: the lowest being the Cuba Mesa, overlain by the Regina, the Llaves, and the Tapicitos Members (Baltz and West, 1967). The individual members have not been specifically identified in the Site vicinity, but the local deposits are consistent with the Regina Member, which is a mixture of sandstone and shale strata. The inferred underlying deposits are of the Cuba Mesa Member that is predominantly composed of sandstone strata. Both members are typically about 200 to 300 feet thick in the area (Baltz, 1967 and Smith and Lucas, 1991).

The Regina and Cuba Mesa Members of the San Jose Formation are composed of varying amounts of shales (clayey and silty mudrocks) and fine to coarse grained sandstones. The sandstones also contain minor amounts of gravels, and carbonized (coal) or petrified wood. The sandstones are composed of varying amounts of quartz, feldspar minerals, and rock fragments, and are therefore termed "arkosic" sandstones. The sandstone deposits are often well bedded and laminated or crossbedded, indicating that they were deposited by currents in relatively shallow stream water. The lateral continuity of the sandstone strata are typical of braided stream deposits (Baltz, 1967 and Smith and Lucas, 1991).

Sedimentary Environment of Deposition

The sediments of the San Jose Formation were interpreted to have been deposited in a warm, wet, and tropical environment in relatively low gradient braided streams with intervening floodplain or backswamp areas (Baltz, 1967 and Smith and Lewis, 1991). The braided streams consisted of multiple, coalescing, shallow stream subchannels within a larger stream system, which resulted in deposits of wide sand bodies. The overall stream sand deposits may be over half a mile wide and 10 to 50 feet thick. Thin sand beds deposited during major flood events extended into the primarily muddy backswamp deposits, forming thin sand beds 2 to 5 feet thick within an overall mud sequence (Baltz, 1967 and Smith and Lucas, 1991).

2.4 Hydrogeology

The primary water bearing unit of concern in this study is the San Jose Formation, which is comprised of alternating zones of sandstone and shale. The four members create a complex stratigraphy which can make hydrogeologic interpretation difficult. Regional groundwater flow is typically influenced by topography and stratigraphic boundaries, which would tend to drive flow in the area of the Site towards the San Juan River valley towards the south. Local topographic conditions are dominated by the Valley of Los Pinos River to the east of the Site, which is inferred to impart an easterly component to groundwater flow direction.

2.5 Source of Methane

The source of the methane and hydrogen sulfide found in private water well SJ 03250 was potentially from a historical E&P well, the San Juan 32-8 No. 30, a dry-gas production well completed in the Mesa Verde formation, which was P&A in 1994. Due to the P&A activities it is assumed that a source for additional methane production entering the system has been prevented.

Methane is common in water wells in the San Juan Basin due to pervasive coal seams in the subsurface. A recent study found that methane was detected in 301 of 560 water wells at a

wide range of concentrations equal to or greater than two parts per million generally throughout the San Juan Basin (AMEC, 2011).

Methane can be produced by biological activity as a product of degradation of organic matter (microbial methane) or maturation of deep hydrocarbon sources (thermogenic methane). Microbial methane is considered a "dry gas," consisting of mostly methane. Thermogenic methane tends to be composed of varying types of hydrocarbons (C_2 to C_{5+}) and is considered a "wet gas." Gas wetness is a useful measure for determining the source of a gas. It is expressed as the summed molar percentage values for ethane (C_2), propane (C_3), butane (C_4), and pentane (C_5), divided by the summed molar percentage values for methane through pentane, multiplied by one-hundred [$(\sum C_2 ... C_5)/\sum(C_1 ... C_5) \times 100$]. As shown by **Chart 1**, the headspace sample from former private water well SJ 03250 exhibits a gas wetness value similar to that of the Mesaverde gas samples (SJ 32-8 No. 25 MV). Mesaverde gas typically contains more of the heavier hydrocarbons and has a higher wetness ratio (1.24 to 1.76) than Fruitland Coal gas (wetness ratio of 0.36 or less). The sample result of an unusually high gas wetness ratio from the December 2011 sample collection event at private water well SJ 03823P1 appeared to be an anomalous result and was not plotted on **Chart 1**. All monitor well sample wetness ratios were greater than 1.0 and indicate a Mesaverde source.

Stable isotope ratio analyses of carbon and deuterium in methane were also used to evaluate the source of methane in wells, as shown by **Chart 2** and **Chart 3**. Isotope ratios are expressed in terms of delta (δ) notation indicating the difference in the molar ratio of a heavy to light stable isotope of a sample relative to the molar ratio of a heavy to light stable isotope of a standard. **Chart 2** shows the comparison of gas wetness and carbon 13 isotope ratio for methane, relative to the Vienna Pee Dee Belemnite (VPDB) standard. **Chart 3** is a plot of delta deuterium (δD) for methane relative to Vienna Standard Mean Ocean Water (VSMOW) versus the delta carbon 13 ($\delta^{13}C$) for methane, relative to VPDB. The results for former private water well SJ 03250 and monitor wells are nearly identical to the results for the Mesaverde gas sample, except for apparently anomalous results for MW-2 and MW-3 from the December 2013 sample collection event.

Section 3.0 Previous Site Activity

In 2011, the NMOCD investigated a report of a hydrogen sulfide odor in a private water well in San Juan County, New Mexico. Field analysis identified the presence of methane and confirmed the presence of hydrogen sulfide in a private water well identified as SJ 03250 by the New Mexico Office of the State Engineer (NMOSE). The NMOCD notified and requested ConocoPhillips evaluate if E&P wells within the vicinity were a potential source of the methane and hydrogen sulfide found in private water well SJ 03250. Initial findings indicated the source

of the methane was potentially from a historical E&P well, the San Juan 32-8 No. 30, a dry-gas production well completed in the Mesa Verde formation. The San Juan 32-8 No. 30 was P&A in 1994. ConocoPhillips contracted CRA to identify the potential presence of methane and hydrogen sulfide in the vicinity of San Juan 32-8 No. 30. In 2012, CRA installed the first monitor well, MW-1, in the vicinity of the former San Juan 32-8 No. 30 well head. The low concentrations of methane measured in groundwater samples from MW-1 suggested that the former San Juan 32-8 No. 30 is not an active pathway for Mesaverde gas to the shallow subsurface. A comprehensive report of MW-1 installation activities can be found in the *2012 ISR*.

3.1 Private Well and Surface Water Sample Collection Events

A total of six private water wells within a one mile radius of the former San Juan 32-8 No. 30 were sampled during three sample collection events between December 2011 and September 2013. Private water well locations are displayed on **Figure 3**. Additionally, a representative surface water sample was collected from the nearby Navajo Lake for comparison. Elevated concentrations of methane were confirmed in groundwater samples from private water well SJ 03250 collected during the December 2011 and May 2012 groundwater sample collection events. Private water well SJ 03250 was P&A in June 2012. Details of SJ 03250 P&A can be found in the *2012 ISR*. The analytical results of the collection events (prior to the 2012 ISR) have been previously presented in the *2012 ISR* and are attached herein in **Tables 1** through **5**; and the results are discussed in **Sections 5.0** and **6.0**.

3.2 Gas Well Sample Collection Events

In December 2011 and May 2012, gas samples were collected from three E&P gas wells (San Juan 32-8 No. 25, San Juan 32-8 No. 202, and San Juan 32-8 No. 204A) in the vicinity of the former San Juan 32-8 No. 30. Production well locations are displayed on **Figure 3**. Produced water samples were also collected from the wells and collection tanks. The analytical results of the collection events have been previously presented in the *2012 ISR* and are attached herein in **Tables 1** through **5**; and the results are discussed in **Sections 5.0** and **6.0**.

3.3 Monitor Well Installation (MW-1)

In September 2012, CRA began work activities to install one multi-level monitor well (MW-1) in the vicinity of the former San Juan 32-8 No. 30. Five discrete and isolated well screens were completed in MW-1 in the permeable sandstone layers with sample collection ports at depths of 340 feet, 390 feet, 432 feet, 522 feet, and 699 ft bgs. Well installation was completed in November 2012 as described in the *2012 ISR*.

3.4 Monitor Well MW-1 Sample Collection Events

Groundwater and groundwater headspace gas sample collection events at MW-1 were conducted in December 2012, and in February, March, June, September and December 2013. Screened zones with observed groundwater were purged with a low-flow procedure prior to groundwater sample collection. The analytical results of the collection events (prior to the 2012 ISR) have been previously presented in the *2012 ISR* and are attached herein in **Tables 6** through **9**; and the results are discussed in **Sections 5.0** and **6.0**.

Section 4.0 2013 Assessment Activities

4.1 Monitor Well and Lithological Bore Hole Placement

On June 21, 2013, CRA and ConocoPhillips representatives conducted a Site walk to assess Site related issues that could affect the proposed locations of Monitor Wells MW-2, MW-3, and MW-4. CRA and ConocoPhillips RM&R established the following criteria for monitor well placement:

- One monitor well (MW-2) and one lithological bore hole (SB-1) located in close proximity to the former private water well SJ 03250, as requested by the NMOCD
- One monitor well (MW-3) located between MW-1 and MW-2
- One monitor well (MW-4) located in the presumed hydrologic upgradient direction from MW-1

The selected well locations are displayed on **Figure 2**.

4.2 Regulatory Permitting

CRA submitted the Application for Permit to Drill a Well with no Consumptive Use of Water (**Attachment A**) and Well Plugging Plan of Operations (**Attachment B**) to the NMSOE on July 11, 2013, for all three proposed well locations and one soil boring location. On July 31, 2013, the NMOSE approved the proposed well locations as documented in Permit Number SJ-4023 (**Attachment C**). Following an environmental assessment and archaeological review, the BLM approved the location of monitor well MW-4 well on August 27, 2013 (see **Attachment D**).

4.3 Site Preparations

In July 2013, CRA personnel mobilized to the Site and initiated preparation activities.

Pre-drilling Site activities are listed below in chronological order:

- July 22 - August 3, 2013: Site cleared of building structures and vegetation near MW-2 and MW-3. A 100 feet by 150 feet sandstone-based work pad was completed at MW-2 and a 75 feet by 25 feet sandstone-based work pad was completed at MW-3. A Site schematic is displayed on **Figure 4**.
- August 1, 2013**:** National Exploration Wells and Pumps (National EWP) requested utility locates for the Site
- August 1, 2013: CRA and National EWP staged major equipment (i.e., frac tanks, roll-off boxes, mud system with shaker, pipe truck, Schramm T685 Rotary Rig at the Site (see **Figure 4** and **Figure 5**).
- August 1, 2013: Personnel from CRA, National EWP, and ConocoPhillips conducted a Site walk at the locations of MW-2, MW-3, and MW-4
- August 2, 2013: Initial project meeting was conducted to review the scope of work and relevant health and safety topics with personnel from CRA, National EWP, and ConocoPhillips.
- August 5, 2013: Core drilling of SB-1 near the former private water well SJ 03250.
- August 27, 2013: ConocoPhillips received written approval from the BLM to commence drilling activities at MW-4.

4.4 Lithological Bore Hole Drilling

A borehole (SB-1) was advanced by rotary coring adjacent to the former private water well SJ 03250 to log additional Site lithology information. This supplemental data point was utilized to develop a lithological cross section of the Site to a terminal depth of 700 ft bgs. Coring activities occurred between August 5 and August 8, 2013, with an Atlas-Copco CT14 Core Rig. The subsurface geology and stratigraphy were documented with a visual description log of the cored rock (**Attachment E**). A photographic log of core samples that illustrates the various lithologies is provided in **Attachment F.**

Upon completion of core drilling, National EWP plugged and abandoned SB-1 with Type I/ Type II Portland cement with 3 to 5 percent bentonite in accordance with the Well Plugging Plan of Operations that was submitted in July 2013 (**Attachment B**).

4.5 Monitor Well Borehole Drilling

National EWP mobilized to the Site to begin monitor well drilling activities on August 8, 2013, with a Schramm T65WS Rotary Rig and auxillary equipment (rig tender, water truck, mud pump). Drilling operations were conducted as follows:

- August 8 to August 13, 2013: MW-3 drilled to a terminal depth of 600 ft bgs
- August 21 to August 23, 2013: MW-2 drilled to a terminal depth of 480 ft bgs
- August 28 to September 6, 2013: MW-4 drilled to a terminal depth of 620 ft bgs

Air-rotary drilling was utilized with an 11.25 inch drill bit to a depth of 45 feet at each monitor well location to install the protective surface casing. Thereafter, monitor well boreholes were drilled to the terminal depth, with a final diameter of 9.625 inches. Drilling additives were limited during air-rotary activities to EZ-Mud® (a clay stabilizer), Quik-Foam® (stabilizer), and Quik-Gel® (viscosity additive).

4.6 Geophysical Logging

Geophysical logs of the boreholes were conducted to characterize the subsurface lithology and to select well screen intervals. The following suite of logs was conducted at SB-1 (in lieu of MW-2), MW-3, and MW-4:

- Electrical log: Spontaneous Potential; 16 inch and 64 inch Normal Resistivity, [to detect shale / sandstone lithologies] and Single Point Resistance [electrical resistivity between down hole and surface electrodes])
- Gamma ray (to measure the natural radioactivity of the formation)
- Temperature
- Fluid resistivity (electrical resistivity of borehole fluid)
- Caliper (to determine diameter of borehole)
- Deviation (to determine deviation from plumb)

All three boreholes exhibited similar properties and characteristics typical of sandstone and shale rock types. Shales typically display lower resistivity and higher gamma ray values as indicated on the geophysical log. Sandstones typically display lower gamma ray responses and higher resistivity values, particularly when saturated with fresh water. The summation of all data identified seven permeable, potential water bearing sandstone layers assigned informal names as Zone "A" through "G" sands as shown in a cross-section, developed using the geophysical logs, on **Figure 6**. The geophysical log responses were very consistent with the visual core observations from SB-1 for depths of shale and sandstone lithologies.

The geophysical logs of SB-1, MW-3, and MW-4 boreholes were also compared with the geophysical logs obtained from MW-1 and two other geophysical logs from E&P gas wells in the vicinity of the Site, including the San Juan 32-8 No. 25-33 (SP and resistivity log from 1957) that is approximately 3,400 feet away to the southwest and the former San Juan 32-8 No. 30

(gamma ray and neutron log from 1958). The log from the San Juan 32-8 No. 25-33 displayed similar lithological patterns of sands and shales although with slightly less overall thicknesses. Individual sand layers displayed differing detailed resistivity patterns, which is not unusual for sand layers in an alluvial depositional setting. Although the gamma ray log appeared to be of poorer quality, the log from the former San Juan 32-8 No. 30 displayed apparent lithological similarities. Complete geophysical logging results are presented in **Attachment G**.

4.7 Monitor Well Construction

The final construction designs of Monitor Wells MW-2, MW-3, and MW-4 were determined from the stratigraphic log of SB-1, geophysical logging results from the boreholes for SB-1, MW-3, and MW-4; and geophysical logs and the stratigraphic data obtained from MW-1. Monitor well installation data are presented in **Table 10**. The vertical relationships of the well screen intervals are shown relative to surrounding private wells in a cross-section on **Figure 7**. The summation of all data identified seven permeable, potential water bearing sandstone layers ("A" through "G") as shown on **Figure 6** and listed as follows in order from shallowest to deepest in elevation:

- Zone "A" sands are from approximately 6,280 to 6,330 ft North American Vertical Datum (NAVD)
- Zone "B" sands are from approximately 6,235 to 6,270 ft NAVD
- Zone "C" sands are from approximately 6,200 to 6,230 ft NAVD
- Zone "D" sands are from approximately 6,095 to 6,180 ft NAVD
- Zone "E" sands are from approximately 6,055 to 6,080 ft NAVD
- Zone "F" sands are from approximately 5,985 to 6,010 ft NAVD
- Zone "G" sands are from approximately 5,935 to 5,970 ft NAVD

MW-2 was designed to screen the depths representative of the former private water well SJ 03250, with the Zone "A" sand corresponding to the sixty-foot screened interval of the former private water well SJ 03250. However, experience from MW-1 indicated that the presence of groundwater in the Zone "A" sand was uncertain and therefore the Zone "C" sand interval was included in the well design to increase the probability of obtaining groundwater samples at MW-2.

MW-2 well construction occurred between August 21, 2013, and August 23, 2013, and was completed to a depth of 480 ft bgs. A 5-foot collection sump was established between the bottom of well casing and terminal depth of borehole (469 to 474 ft bgs) to provide space for collection of material that sloughed off during well construction.

Screened zones in MW-3 and MW-4 correspond generally to zones screened in MW-1. MW-3 and MW-4 were screened in Zones "A", "C", "D", and "E" sands. The Zone "B" sand in MW-1 did not yield groundwater, therefore it was decided to not screen the Zone "B" sand in MW-3 and MW-4. During the coring of SB-1, hydrogen sulfide odors were detected in the Zone "E" sand, therefore this interval was included in well design of MW-3 and MW-4. The Zone "G" sand was not screened in MW-3 and MW-4.

MW-3 well construction occurred between August 24, 2013, and August 26, 2013. A 5-foot collection sump was established between the bottom of well casing and terminal depth of borehole (589 to 594 ft bgs) to provide space for collection of material that sloughed off during well construction.

MW-4 well construction occurred between September 7, 2013, and September 9, 2013. A 20-foot collection sump was established between the bottom of well casing and terminal depth of borehole (600 to 620 ft bgs) to provide space for collection of material that sloughed off during well construction.

All wells were constructed of casing and screen segments (5 and 10 foot segments, comprised of 304 stainless steel with Schedule 10 mid-body and Schedule 40 threaded ends), threaded together (ASTM F480 flush joint threads), and lowered down hole. Filter packs (10/20 silica sand) were placed around each screen interval. Bentonite seals (50/50 bentonite-silica sand ratio) were placed above and below each screen interval to prevent hydraulic communication between identified groundwater bearing zones. Bentonite seal thicknesses varied upon distance between screened zone intervals. Filter packs and bentonite seals were placed by tremie pipe and were tagged a minimum of three times after swabbing the screened interval (a methodology used to stabilize the filter pack) to maintain accuracy of interval depths.

The As-Built Well Construction schematics that include the location of screened intervals and placement of well construction materials for Monitor Wells MW-2, MW-3 and MW-4 are presented on **Figures 8** through **Figure 10** respectively. The monitor wells were completed with an above-grade casing and locking steel shrouds. A 6-foot-square concrete well pad, sloped to allow surface water runoff away from each well, was constructed around the surface completion of the well head. Four bollards (4-inch diameter) were placed around each well pad for protection. All surface completions were completed under NMOSE regulations and **Figure 11** shows the above-grade completion schematic.

4.8 Well Development

After each monitor well was installed, suspended solids (clay, mud, or sand from drilling activities or formation instability) were removed by a metal bailer and pump. Equipment used

for well development included a pump rig (Pullstar 12K) and auxiliary equipment (tremie pipe and submersible pump). Aqua Clear PFD (phosphorous free dispersant) was used in combination with potable water to remove sediment and clay from the producing formation and filter pack. Well development consisted of swabbing in conjunction with air-lift pumping at each screened zone, from deepest to shallowest zone (i.e., Zone "E" sand to Zone "A" sand) and water jetting at each screened zone. A tremie pipe was lowered downhole to each screen and injected water under high pressure to remove any sediment that accumulated on the screen. Well development proceeded until turbidity of less than 100 Nephelometric Turbidity Units (NTU) was achieved, except at MW-2 where a turbidity level of approximately 500 was achieved due to the low groundwater yield of the well.

4.9 Well Video Profile

Video profiles were conducted between October 3 and 4, 2013; to record the presence of potential gas infiltration (visible gas bubbles) from the surrounding formation, using a BT9600 Dual Viewing camera. Vertical video profiles were conducted prior to Waterloo System™ installation. Potable water was added to monitor wells to raise water elevation above each screened interval. No steady stream of gas bubbles, indicative of a source of natural gas, was observed in any of the monitor well screened intervals. However, gas bubbles were observed in MW-3 well casing joints. The frequency of gas bubbles dissipated with increased water column height above the casing joint. The decrease in the number of gas bubbles with increased hydraulic head indicates a potential equilibrium between formation pressure and the hydraulic pressure of the water column. However, the source and nature of the gas bubbles cannot be determined from this analysis. The video profile of each well is found in **Attachment H.**

4.10 Installation of the Waterloo System

The Waterloo System™ is a series of ports, polyvinyl chloride (PVC) tubing, and packers that allows sample collection from multiple groundwater bearing zones within a single monitor well. The *2012 ISR* provides a detailed description of the Waterloo System. In addition, in 2013, a gas sample collection port was added in the screened interval of the Zone "A" sand in each monitor well (MW-2, MW-3, and MW-4). CRA installed the gas sample collection ports in the upper-most screened zone of each monitor well based on MW-1 groundwater sample collection observations that indicated the Zone "A" sand was unsaturated.

The Waterloo system was installed at MW-2 on October 5, 2013, to a depth of 469 ft bgs. The Waterloo system configuration was aligned with the previously constructed monitor well screen intervals. A gas sample collection port was installed at 343 ft bgs in the Zone "A" sand. Groundwater sample collection ports and Geokon 404 vibrating wire transducers were installed

at 399 ft bgs in the Zone "A" sand and 454 ft bgs in the Zone "C" sand. The As-Built schematic of the Waterloo System is shown on **Figure 8**.

The Waterloo system was installed at MW-3 on October 7, 2013, to a total depth of 586 ft bgs. The Waterloo system configuration was aligned with the previously constructed monitor well screen intervals. A gas sample collection port and a Geokon 404 vibrating wire transducer was installed at 334 ft bgs in the Zone "A" sand. Groundwater sample collection ports and Geokon 404 vibrating wire transducers were installed at a depth of 350 ft bgs in the Zone "A" sand, 435 ft bgs in the Zone "C" sand, 511 ft bgs in the Zone "D" sand, and 580 ft bgs in the Zone "E" sand. The As-Built schematic of the Waterloo System is shown on **Figure 9**.

The Waterloo system was installed at MW-4 on October 9, 2013, to a total depth of 586 ft bgs. A gas sample collection port was installed at 349 ft bgs in the Zone "A" sand. During well construction, the upper packer was not included in the Waterloo installation in order to have access to the screened interval of the unsaturated zone for potential formation gas testing. The exclusion of the upper packer allows for gas venting of the upper zone. A Keller LEO Record digital manometer was installed in February 2014 at the end of the gas port, in order to track trends in formation gas pressure. The Waterloo System configuration aligned with the previously constructed monitor well screen intervals. Groundwater sample collection ports and Geokon 404 vibrating wire transducers were installed at a depth of 365 ft bgs in the Zone "A" sand, 435 ft bgs in the Zone "C" sand, 511 ft bgs in the Zone "D" sand, and 580 ft bgs in the Zone "E" sand. The As-Built schematic of the Waterloo System is shown on **Figure 10**.

4.11 Disposal of Investigation-Derived Waste (IDW)

Investigation-derived waste (IDW) was generated during coring, drilling, well installation, and well development. Drilling mud and development water were the majority IDW generated. Drilling mud was comprised of drill cuttings and drilling fluids which aided in the drilling process and reduced friction during drilling. The additives included: EZ-Mud®, Quik-Foam®, and Quik-Gel®. Development water was comprised of potable water supplied from a nearby water source and additives such as Aqua Clear® PFD. Waste characterization samples were collected and shipped under proper chain-of-custody to Pace Analytical Services, Inc. in Lenexa, Kansas.

All IDW was characterized as non-hazardous material under Department of Transportation (DOT) guidelines. Analytical results are located in **Attachment I**. CRA completed a C-138 form, ***Request for Acceptance of Solid Waste*** (see **Attachment I**) for acceptance of IDW at waste facilities in New Mexico. CRA contracted Dawn Trucking to transport and dispose of IDW at Industrial Ecosystems, Inc. (IEI) located in Aztec, New Mexico.

Section 5.0 Groundwater and Gas Sample Collection Methods

5.1 Groundwater Elevation Measurements

Groundwater elevation measurements were obtained during sample collection events at MW-1, MW-2, MW-3, and MW-4 by use of permanently installed vibrating wire transducers (Geokon 404). Each screened zone within each well is associated with a vibrating wire transducer. Transducers were calibrated during the Waterloo System installation and baseline readings were recorded, additional information can be found in the *2012 ISR*. Groundwater elevation data for MW-1, MW-2, MW-3, and MW-4 are listed in **Table 11** and displayed on **Charts 4A** through **4D**.

5.2 Gas and Headspace Sample Collection Events

Gas and headspace samples were collected to evaluate the presence, source, and migration of methane and hydrogen sulfide, both of which may be present in a gaseous state within the subsurface or in a dissolved state in groundwater. For the purposes of this report, samples of gas taken directly from well casings or gas ports and analyzed directly by the EPA TO-15 method are labeled as "Gas" samples. Gas samples taken directly from the well casing represent the area above and including Zone "A" sand. Each gas port is equipped with a 6-inch long stainless steel sample port and two 0.25-inch outer diameter, medium density polyethylene (MDPE) inlet and outlet tubes. Samples dissolved in groundwater and analyzed by exsolving gas through the introduction of helium into the sample container and then collecting and analyzing the exsolved gases by the RSK 175 method are referred to as "Headspace" samples.

Gas samples were obtained from the following collection points:

- Private water wells (**Figure 3**)
- E&P gas production wells (**Figure 3**)
- Open cased monitor wells MW-2, MW-3 and MW-4 in September 2013 only (**Figure 2**)
- Gas ports installed in the "A" Zone of monitor wells MW-2, MW-3 and MW-4 (**Figure 2**)

All gas samples were analyzed for the following constituents:

- Methane, C2 to C6 hydrocarbon gases, and fixed gases (major atmospheric gases) by mass spectroscopy
- Volatile organic compounds (VOCs) in air by EPA method TO-15
- Hydrogen sulfide by EPA 15/16 Standard Method
- Acetylene by ASTM D1946

- Carbon and hydrogen isotope analysis by mass spectroscopy (Only samples collected from former private water well SJ 03250 and E&P wells SJ 32-8 No. 25, SJ 32-8 No. 202, and SJ 32-8 No. 204A)

Gas samples were collected by a means of flexible PVC tubing inserted into well access points in combination with the laboratory supplied hand pump for Cali-5 Bond bags and negative pressure vacuum of a one liter summa canister. Gas samples results from private and production wells are summarized as follows:

- **Table 3** for VOC's
- **Table 4** for hydrogen sulfide and acetylene
- **Table 5** for methane, C2 to C6 hydrocarbon gases, and atmospheric gases

The laboratory analytical data reports are attached in **Appendix B.**

Open Monitor Well Gas Sample Collection

Gas samples were collected from the open well casings of MW-2, MW-3 and MW-4 in September 2013, prior to the installation of the Waterloo Systems. The sample process collected free gas from all permeable intervals that were allowing gas to migrate to the well casing. Pressure readings exceeded atmospheric pressure in all of the monitor wells. Water levels in the monitor wells were approximately 420 ft bgs. Gas samples were collected through use of temporary tubing installed in the wells and collected with Suma canisters and Cali-5-Bond bags. Gas samples were analyzed for the constituents listed above and the analytical results are summarized in **Table 8** and **Table 9**. The laboratory analytical data reports are attached in **Appendix B**.

Monitor Well Waterloo System Gas Port Sample Collection

Gas samples were collected from the gas ports installed in the Zone "A" sand of MW-2, MW-3 and MW-4 included as part of the Waterloo Systems in the wells. The sample collection process from the gas ports collected free gases from only the Zone "A" sand. Gas samples from gas ports on monitor wells were collected by a means of flexible PVC tubing connected to a sample port located on the monitor well in combination with the laboratory supplied hand pump for Cali-5 Bond bags. Gas samples were analyzed for the constituents listed above and the analytical results are summarized in **Table 8** and **Table 9**. The laboratory analytical data reports are attached in **Appendix B**.

Monitor Well Waterloo System Groundwater Port Headspace Sample Collection

Headspace samples were collected from the groundwater sample collection ports installed in the Waterloo Systems. Headspace samples from the groundwater ports on monitor wells were collected by a means of flexible PVC tubing connected to a sample port located on the monitor well in combination with the laboratory IsoBags/IsoFlasks®. Headspace samples were collected from groundwater as previously described and the results are summarized in **Table 7.** The laboratory analytical data reports are attached in **Appendix B**.

The Waterloo System pump pressurization process is calibrated to only supply enough nitrogen gas into the inlet line to deliver groundwater to the surface by pushing water down the inlet tube past the check valve and up the outlet tube. However, during the sample process in the Zone "C" and "D" sands in the monitor wells, there is often a "spurting" effect where gas emissions flow uncontrollably out of the sample line for many seconds, even after the nitrogen supply is shut off. Although some of the gas that comes out of the line is likely nitrogen from the sample pumping process, concentrations of methane and hydrogen sulfide are typically present in the gas phase emissions. Potentially, there may be quantities of gases in solution so that groundwater rises in the outlet tube, the reduced ambient pressure allows exsolved methane and hydrogen sulfide to release into the gas phase and form large bubbles that flow out the sample line. This phenomenon does not appear in the Zone "G" sand at MW-1 or the Zone "E" sand at MW-4 where the ports are deeper than the maximum depth that nitrogen can cycle through the system.

5.3 Groundwater Sample Collection Events

The locations that were sampled include:

- Private water wells, sampled periodically since 2011 (**Figure 3**)
- Gas production wells, sampled December 2011 and May 2012 (**Figure 3**)
- Monitor well MW-1, sampled since December 2012 (**Figure 2**)
- Monitor wells MW-2, MW-3 and MW-4, sampled since October 2013 (**Figure 2**)

In addition, a surface water sample was also obtained from Navajo Lake for comparison with groundwater characteristics. All groundwater samples were analyzed for the following constituents:

- Dissolved cations (boron, calcium, magnesium, potassium, barium, strontium, and sodium) by EPA Method 6010
- Alkalinity by Method SM 2302B

- Total sulfide by Method SM 4500-S-2 D
- Anions (chloride, bromide, and sulfate) by EPA Method 300.0
- VOCs by SW-846 Method 8260
- TPH-ORO/DRO/GRO by SW-846 Method 8015B
- Dissolved methane by gas chromatography
- Oxygen and hydrogen isotopes by mass spectroscopy
- Biological Activity Reaction Test (BART) for Sulfate Reducing Bacteria (SRB)

The analysis of strontium and barium were added in December 2013 and the analysis of BART was added in September 2013. The surface water samples from the Navajo Reservoir were analyzed for all of the above constituents with the exception of barium, strontium and BART.

Groundwater samples collected were placed in laboratory prepared containers, packed on ice, and shipped under chain-of-custody documentation to both Pace Analytical Services, Inc. in Lenexa, Kansas, and Isotech Laboratories, Inc. of Champaign, Illinois.

Surface Water, Private Water Well, and E&P Well Groundwater Sample Collection Methods

Groundwater samples from the private water wells were collected from the closest access point to the well casing. E&P samples were obtained from access ports or holding tanks from surrounding gas production wells to compare shallow groundwater characteristics with produced water from deeper formations. Surface water was collected with a sterilized, extended-handle bailer and transferred directly into sample containers.

Groundwater results from the private wells, production wells and surface water are summarized as follows:

- **Table 1A** for hydrocarbon constituents
- **Table 1B** for groundwater geochemical constituents
- **Table 2** for groundwater isotopic data

The laboratory analytical data reports are attached in **Appendix B**.

Monitor Well Sample Collection Methods

Groundwater samples from the monitor wells are collected through use of the permanently installed Waterloo sample collection system. Each groundwater zone is equipped with a six-inch long stainless steel sample port and two 0.25-inch outer diameter, medium density polyethylene (MDPE) inlet and outlet tubes. The Waterloo control box (connected to well head

manifold) is utilized to supply inert nitrogen gas, at a controlled pressure, from the ground surface through the inlet tube associated with each sample zone. The individual target zone is sampled by displacement of groundwater from the sample port into the outlet tube by calculated nitrogen pressure levels through pressure charging and venting cycles. The nitrogen pressure needed for each sample zone is based on the required lift necessary to displace the static water column within the outlet tube to the surface. This sample collection technique introduces the potential for elevated nitrogen levels in samples (see **Section 6.3.2**). The required nitrogen pressure and the time interval of charge and vent cycles for each zone were recorded on the groundwater sample collection field forms included as **Appendix A**. The Zone "E" sand of MW-3 has not been successfully sampled to date. The Zone "A" sand of MW-2 has produced groundwater for the first three events, although continuously decreasing groundwater elevations indicate the observed water may be a remnant of the well installation process. The Zone "A" sand in all other wells have not produced recoverable quantities of groundwater for sample collection.

Screened zones that produce groundwater were purged of the applicable volume in the screened interval via low-flow techniques, whereby field analytical parameters were monitored until the measurements stabilized within established ranges. The field parameters included temperature, specific conductivity, oxidation/reduction potential (ORP), pH and dissolved oxygen. Purge volumes produced from each screened zone were recorded on the groundwater sample collection field forms. Groundwater samples collected were analyzed for the constituents listed above and the analytical results are summarized in **Table 6A** and **6B**. The laboratory analytical data reports are attached in **Appendix B**.

Private and Monitor Well Sample Collection Events October 2013 and Future Events

Groundwater/ headspace gas sample collection events were scheduled for the following dates:

- December 2013 (completed, MW-1 through MW-4)
- February 2014 (completed, MW-1 through MW-4)
- April 2014 (completed, MW-1 through MW-4)
- June 2014 (completed, MW-1 through MW-4)
- August 2014 (completed, MW-1 through MW-4)
- October 2014 (completed, MW-1 through MW-4)
- December 2014 (completed, MW-1 through MW-4)

The laboratory analytical results are listed in **Table 6A** for hydrocarbon constituents and in **Table 6B** for geochemical constituents. The laboratory analytical data reports are attached in **Appendix B**.

Section 6.0 Site Assessment Results and Discussion

6.1 Site Geology Conditions

The Site stratigraphy consists of alternating shale and sandstone beds. The shale beds range from approximately eight to thirty-five feet thick and averaged a thickness of approximately sixteen feet. The shale beds are typically a medium to dark gray color with thinner zones of reddish brown to purple mottling that indicate intermittent soil weathering zones that were concurrent with the shale deposition. The shale beds were generally massive (not fissile) but occasionally displayed high angle fractures that may allow fluids or gas to migrate through the shale zones between sandstone beds. The sandstone beds range from approximately two to forty-three feet thick and averaged a thickness of approximately eleven feet. The sandstones typically have a sharp lower contact over the shales, with coarser sand and conglomerates (gravel) at the base that grade upward to finer sands at the top of the beds. The finer sands are often laminated whereas the coarser deposits may show cross-laminations indicating stronger current deposition. A geological cross-section constructed of all of the visual and geophysical logs from monitor wells at the Site is presented on **Figure 6**. A geological cross-section is shown on **Figure 7** and displays the elevations of the local domestic wells in relation to the screened zones of monitor wells MW-1 and MW-2/SB-1.

6.2 Site Groundwater Conditions

Groundwater elevation measurement data for MW-1, MW-2, MW-3, and MW-4 are listed in **Table 11** and displayed on **Chart 4A** through **Chart 4D,** respectively. Groundwater potentiometric elevations and contour maps are presented for the Zone "D" and "E/G" sands on **Figures 12A** and **12B** through **13A** and **13B**, respectively, for the December 2013 and December 2014 monitoring events. Due to an observed deviation in groundwater flow direction, additional sample events were not mapped. Transducer data in Zone "A" and "B" sands did not indicate any water column above the device except in MW-2, which has displayed a continuously decreasing groundwater elevation, most likely due to water introduced to the well during development procedures. Groundwater elevation data in the Zone "C" sand do not correlate with the data set at this time and were not included in contour projections. Groundwater elevations in the Zone "C" sand at MW-2 appear to be unexpectedly high relative to the other monitor wells, possibly due to the water added during the video logging procedure. Groundwater contours in Zone "D" and "E" sands appear reasonable and indicate an apparent groundwater flow direction toward the east in the direction of Los Pinos River. Data indicated the deeper groundwater units (Zone "D" and "E" sands) are under confined conditions. Los Pinos River/Navajo Reservoir lies approximately 3.5 miles to the east with a typical surface elevation of approximately 6,100 feet NAVD. Therefore, it is inferred that local groundwater flow would be predominantly to the east towards Los Pinos River. Groundwater potentiometric surface elevations are also displayed in the geological cross-section on **Figure 7**,

and range in elevation from approximately 5,945.83 feet NAVD in the deepest screened zone to approximately 6,304.83 feet NAVD in the shallowest screened zone, exhibiting an overall downward potentiometric gradient.

6.3 Gas, Headspace, and Groundwater Analytical Data

The analytical results presented in this section are from sample collection events between December 2011 and December 2014. Samples were collected from six private water wells, three E&P gas wells, four monitor wells, and one surface water sample from Navajo Lake. Samples were analyzed for methane and VOC's, geochemical constituents, isotopic ratios, and microbiological activity.

6.3.1 Methane

Methane is one of the most abundant natural gases on Earth and can either be present in a dissolved phase in groundwater or in a gaseous form depending on the pressure present in the system. If pressure decreases (i.e., decrease in hydraulic pressure) methane can exsolve from the dissolved phase and enter into a gaseous phase. Based on the solubility of methane, it is generally considered that methane concentrations above 5 micrograms per liter (µg/L) in groundwater are due to a source other than atmospheric.

Distribution in Groundwater

Analytical results for all of the private water wells and monitor wells reported detectable concentrations of dissolved methane in groundwater (**Chart 5A**). Gaseous phase methane dissolved into the groundwater is typically associated with an anaerobic environment related to microbial consumption. However, background conditions of the groundwater in the areas were likely aerobic based on data collected from nearby private water wells. The private water wells sampled during the investigation were reported with dissolved methane concentrations typically associated with background conditions in the area, at or less than 1 mg/L. However, former SJ 03250 samples indicated a maximum methane concentration of 10.1 mg/L. This elevated concentration of methane supports the anaerobic environment observed in the area of investigation. The depth distribution of dissolved methane is shown on **Chart 5B**. The vertical relationship among the well sample locations is represented by the maximum observed concentration for each sample point on a well cross-section view on **Figure 14A**. The areal distribution of dissolved methane is shown on a map on **Figure 14B**. **Chart 5B** and the figures indicate highest apparent concentrations of dissolved methane are at the depths of Zone "E" sand and concentrated around the former private water well SJ 3250 and confirmed by samples collected from MW-1, MW-2, MW-3, and MW-4.

Dissolved methane concentrations increased over time in the Zone "G" sand of MW-1 from December 2012 to December 2014. This apparent increase is potentially due to the equilibration of groundwater in the vicinity of the well given the introduction of water during well development or the installation of the monitor well has potentially created a preferential pathway for methane (**Chart 5A** and **Chart 6A-D**).

Distribution in Gas and Headspace Gas

Gas and headspace sample analytical results for methane correlates with the distribution of dissolved methane in MW-1, MW-2, MW-3, and MW-4 in all sampled zones (**Chart 7** and **Chart 8;** gas and headspace gas, respectively). Methane concentration in headspace samples increased with time from December 2012 to April 2014 and then remained constant at 8.46 – 8.56 percent in October and December 2014 in MW-1 Zone "G" sand as shown on **Chart 8**. Increased methane concentration may be associated with the preferential pathway created by installation of the monitor well, and is not a likely indicator of continued release. From a single point, a gas will flow radially outward and upward from a source rather than through advection along an aqueous regional flow gradient, favoring faults and other high permeability pathways. The observed vertical distribution of methane in gas or headspace samples is represented by the maximum observed conservative concentration for each sample point on a well cross-section view on **Figure 15A.** The observed areal distribution of headspace gas methane is shown on a map on **Figure 15B**. The figures show that the highest concentrations of methane in gas samples are at the depths of the Zone "A" sand and concentrated around the monitor wells and former private water well SJ 3250. Whereas, the highest headspace methane concentrations are observed at the depths of the Zone "E" sand. However, note that the apparent vertical discontinuity in the gas phase sample concentrations may be influenced by the change in sampling methods and procedures.

6.3.2 Hydrogen Sulfide

Hydrogen sulfide is a colorless gas with a distinct odor and is found in petroleum and natural gas products, and other natural media. Along with methane, natural seeps of hydrogen sulfide have been reported along the northern and western rim of the San Juan basin and as close as Cedar Hill, New Mexico; approximately twelve miles west of Site (BLM, 1999).

Distribution in Groundwater

Hydrogen sulfide (as total sulfide) was found in measurable concentrations in groundwater samples from Monitor Wells MW-1 (Zones "C," "D," and "G" sands), MW-2 (Zone "C"), MW-3 (Zone "D"), and MW-4 (Zones "D" and "E" sands) and former private water well SJ 03250, as shown on **Chart 9A**. No other private water well, gas well, or monitor well produced measurable hydrogen sulfide. The maximum concentration of hydrogen sulfide detected in

groundwater was reported at 75 mg/L in MW-4. The vertical distribution of dissolved hydrogen sulfide is shown on **Chart 9B** and represented by the maximum observed concentration for each sample point on a well cross-section view on **Figure 16A**. The areal distribution of dissolved hydrogen sulfide is shown on a map on **Figure 16B**. The figures show that the highest concentrations of dissolved hydrogen sulfide are at the depths of the Zone "D" and "E" sands and concentrated around the monitor wells and former private water well SJ 3250.

Distribution in Gas

Hydrogen sulfide was found in measurable concentrations in gas samples from MW-2, MW-3, and MW-4 (Zone "A" sand) and former private water well SJ 03250, as shown by **Chart 10**. The vertical distribution of hydrogen sulfide in gas samples is represented by the maximum observed concentration for each sample point on a well cross-section view on **Figure 17A**. Field measurements of hydrogen sulfide were collected by Draeger Hydrogen Sulfide colorimetric tubes from December 2013 to December 2014 (Table 13). The areal distribution of hydrogen sulfide in air samples is shown on a map on **Figure 17B**. The figures show that the highest concentrations of hydrogen sulfide in gas are within the Zone "A" sand and are concentrated around the monitor wells and former private water well SJ 3250.

6.3.3 Other Atmospheric Gases

In addition to analyzing for methane, gas samples and headspace samples were analyzed for other key atmospheric gases: nitrogen, argon, oxygen, and carbon dioxide.

- Nitrogen is a conservative (unreactive) gas. Nitrogen concentrations were near atmospheric levels of 78.1 percent in all of the private water wells except former private water well SJ 03250 where it was apparently depleted in the sample due to the elevated concentrations of methane, as displayed on **Chart 11A** and **Chart 11B**. Nitrogen concentrations were elevated in the majority of the groundwater headspace samples collected from the monitor wells, which is likely due to the added nitrogen gas during sample collection events (see **Section 5.2**). However, Nitrogen was depleted in monitor well headspace samples from MW-1 Zone "G" sand and Zone "E" sand at MW-4 corresponding to the elevated concentrations of methane and where there were no gas spurting effects.
- Argon is a conservative (unreactive) gas. Argon concentrations were near atmospheric levels of 0.9 percent in all of the private water wells except the former private water well SJ 03250 where it corresponds to the elevated concentrations of methane, as displayed on **Chart 12A** and **Chart 12B**. Argon concentrations were depleted in monitor well headspace samples from the Zone "C" and "D" sands in the monitor wells apparently due to the gas spurting phenomenon and consequent elevated nitrogen concentrations.

- Oxygen is a constituent consumed by organic respiration reactions in groundwater and so concentrations may vary due to corresponding biological activity. Oxygen concentrations were near atmospheric levels of 20.9 percent in all of the private water well samples except former private water well SJ 03250 where it was apparently depleted in the sample due to the elevated concentrations of methane and / or from biological respiration, as displayed on **Chart 13A** and **Chart 13B**. Oxygen concentrations were depleted in monitor well headspace samples from the Zone "C" and "D" sands in all monitor wells apparently due to the gas spurting phenomenon and consequent elevated nitrogen concentrations. Oxygen concentrations also appeared depleted in monitor well gas samples apparently due to the elevated concentrations of methane and / or from biological respiration.
- Carbon dioxide is a constituent produced by biological respiration reactions in groundwater and so concentrations vary due to corresponding biological activity. Carbon dioxide concentrations in all private well samples were found in excess of atmospheric levels (0.039 percent) as displayed on **Chart 14A** and **Chart 14B**. Carbon dioxide concentrations were elevated in all monitor well headspace samples apparently due to biological respiration. Carbon dioxide concentrations also appeared elevated in monitor well gas phase samples apparently due to biological respiration.

6.3.4 Cations and Anions

The cation and anion constituent concentrations from the private water wells, Navajo Lake surface water, and produced water associated with gas wells are listed in **Table 1B** and from the monitor wells in **Table 6B**. The 2012 ISR documented that constituent characteristics of the shallow groundwater were not closely related to produced water and eliminated the concern that there was fluid leakage from any surrounding E&P wells. The results shown in this report are focused on variations with depth only within the upper 1,000 ft bgs at the Site. The following describes the presentation of **Chart 15** through **Chart 22**:

- Total Dissolved Solids (TDS), as shown on **Chart 15**, generally increased in concentration with depth.
- The relationships among the dissolved cations and anions are summarized on a Piper diagram on **Chart 16**. Overall, the shallowest groundwater zone ionic compositions were comprised by sodium, calcium and sulfate and became mainly of sodium and sulfate with depth with an elimination of calcium. The private water wells, Zone "C", "D", and "G" sands were similar and characterized by higher sodium and sulfate concentrations. Zone "E" sand and the Navajo Lake samples had similar compositions dominated by calcium and bicarbonate. The sample results from the Zone "A" sand in MW-2 appear anomalous, which may be a result of development water remaining in the screened zone. Deeper produced waters were depleted of calcium and sulfate, and dominated by sodium, chloride and bicarbonate.

- Cation composition was generally dominated by sodium with the exception of the Zone "E" sand, as shown on **Chart 17** and generally increased in concentration with depth. Calcium also generally increased in concentration with depth but to a lesser extent in shallow groundwater as shown on **Chart 18**, but was low in produced waters. Other cation concentrations were present in far lower concentrations.
- Anion concentrations were dominated by sulfate in the shallow zone with the exception of the Zone "E" sand, as shown on **Chart 19**, but sulfate was almost totally depleted in the deeper produced waters. Chloride concentrations, as shown on **Chart 20**, and alkalinity concentrations, as shown on **Chart 21**, were low in the shallow zone but are the dominant anions in the produced waters. Boron concentrations, as shown on **Chart 22**, were an overall minor component of the groundwater, but were relatively enriched in the produced water. The natural presence of boron is usually considered to be derived from the weathering of silicate minerals.

6.3.5 Oxidation Reduction Potential

The ORP of an aquifer is an important measurement for evaluation of microbiological activity. A generally reduced system will exhibit a negative ORP value, whereas a more oxidized system will exhibit positive values. **Chart 23** displays ORP measurements collected from five private water wells and the monitor wells during multiple sample collection events. ORP measurements reveal a more reduced environment in the monitor wells than in the private water wells.

ORP is the measure of the tendency of a chemical species to accept (reduction) or provide (oxidation) electrons as recorded in millivolts (mV). These reactions involve sulfur (S) from its oxidized state (containing oxygen) as sulfate (SO_4^{2-}) and reduced state (containing hydrogen) as sulfide (H_2S).

On the ORP scale, the presence of an oxidizing agent such as oxygen increases the ORP value, while the presence of a reducing agent, such as hydrogen, decreases the ORP value.

Sulfide, as hydrogen sulfide, is typically stable in groundwater when ORP values are between -50 to -250 mV (Michael, 2007). The ORP of groundwater in this area, as recorded at the private water wells, is typically between -50 and 150 mV.

6.3.6 Sulfate Reducing Bacteria [SRB]

Sulfate-reducing bacteria (SRB) are a group of mainly anaerobic bacteria that utilize sulfate as a terminal electron acceptor in their electron transport chain. The bacteria reduce sulfate via dissimilatory reduction and generate hydrogen sulfide as waste. The Biological Activity

Reaction Test (BART) was used to identify potential SRB populations present within the permeable sandstone zones identified in **Section 4.5**. The BART includes a reaction chamber (vial) which is filled with twenty milliliters (ml) of groundwater and allowed to incubate in the absence of direct sunlight for a maximum of fifteen days (typically 8-10 days). The BART vial is visually inspected daily to estimate colony forming units (CFU). Refer to **Attachment J** for more information regarding the BART.

Results from the BART analysis indicated SRB populations of less than 1,200 CFU/ml at all private water wells (**Chart 24, Table 12**). The overall concentration of SRB populations decreases over time in all zones at MW-1, except for the August 2014 event where a spike in CFU's is seen in all zones. Initial data from MW-2 indicates an increase in SRB populations in Zone "C" sand from 200 CFU/ml to 700,000 CFU/ml. Populations of SRB at MW-3 remained constant over time with MW-3 ranging from 75 to 375 CFU/ml and MW-4 above 700,000 CFU/ml, respectively. Historically MW-4 counts of SRB have been greater than 2,200,000 CFU/mL which is relatively high compared to monitoring wells MW-1, MW-2, and MW-3 ranging from 20 to 27,000 CFU/mL during the December 2014 sampling event. The large population of SRB colonies in MW-4 supports the hypothesis that hydrogen sulfide is present as a by-product of microbial metabolism.

Sampling parameter values in wells MW-1, MW-2, MW-3, and MW-4 provide evidence for the generation of waste hydrogen sulfide by SRB anaerobic respiration. The ORP in groundwater recorded at the monitor wells range from -223.0 mV to -341.6 mV, which suggests an anaerobic environment suited for methane reduction to hydrogen sulfide by methanotrophic conversion. ($CH_4 + SO_4^{2-} \rightarrow HCO_3- + HS- + H_2O$). Previously released methane in the aquifer can undergo anaerobic oxidation with sulfate as the electron acceptor, to generate hydrogen sulfide. Sulfate concentrations are generally high in background groundwater but show partial to nearly total depletion in some monitor wells, such as MW-2, likely due to the sulfate reduction process. SRB counts peaked in August 2014 with a decreasing trend observed in the second half of 2014 except in MW-4. MW-4 has consistently exhibited the highest SRB CFU/ml, increasing in the second half of 2014. Sulfate concentrations in MW-4 are lower than in MW-1 and MW-3 for the same screened intervals, which suggest increased bacterial activity and sulfate reduction is likely. Given the observations from MW-2, it is expected that similar trends will be observed and the aquifer will attenuate to natural conditions. Historic concentrations of the available sulfate has been detected at a maximum of 5,000 mg/L indicating that while the abundance of SRBs located near MW-4 have diminished the sulfate to 1,200 mg/L, there is still a sufficient amount of sulfate to continue the anaerobic cycle.

Under shallow anaerobic conditions, the sulfur reduction-oxidation cycle is entirely bacteriological. The naturally existing anaerobic bacteria consume the existing methane and reduce available elements in order of iron, manganese and lastly, sulfate. Sulfate is reduced

where sulfate (SO_4^{2-}) is the electron acceptor, with an end product of hydrogen sulfide (H_2S). Once the methane has been consumed, the system is expected to return to a more oxidized environment of the natural background conditions as apparent in private water wells in the Site vicinity with ORP values ranging from approximately 50 to 150 mV. Natural background might include low levels of natural methane, but the methane, iron, manganese and H_2S concentrations should return to background concentrations found anywhere in the San Juan Basin. Metal sulfides (typically iron and manganese) may precipitate with H_2S in the anaerobic environment and remove sulfide from the groundwater. Also, as groundwater becomes exposed to more aerobic conditions, dissolved iron and manganese that were produced during early reducing states should precipitate as oxides.

Based on the most recent groundwater ORP values; MW-1 from -326.8 mV to -195 mV ,MW-2 at -320.4 mV, MW-3 at -246.2 mV and MW-4 from -402.2 to -317.6 mV in correlation to the SRB counts, the data indicates the groundwater is highly reduced supporting the anaerobic cycle and reduction of sulfur to H_2S. The sulfide produced from this process can either be reoxidized to sulfate (SO_4) under anaerobic conditions by SRB and phototrophic bacteria, or the hydrogen sulfide reaches an aerobic zone within the subsurface and is then chemically or biologically oxidized via sulfur and thiosulfate to sulfate.

6.3.7 Hydrogen and Oxygen Isotopes in Groundwater

The isotopic ratio of oxygen-18 to hydrogen-2 in the groundwater samples from the Site was examined to identify the source of water. A plot of the combined oxygen-18 and hydrogen-2 isotope results are shown on **Chart 25**. The two isotopes were plotted on the standard axis for comparison to their ratio to a reference linear regression line, the hypothetical "national" meteoric line of Kendall and Coplen, 2001. The isotopic ratio for groundwater samples from the deeper Monitor Well MW-1 and private wells was more similar to that of Navajo Reservoir water sample than to that from shallower private water well samples (**Chart 25**). The analytical results from produced water samples were significantly different from all shallow water samples. The results indicated the potential for the deeper surface groundwater zone water to be at least partially sourced from recharge from Los Pinos River/Navajo Lake, and the shallower groundwater was potentially recharged from local precipitation. The produced water values suggest an older climatic regime source. The isotopic data provided significant evidence of a lack of connection of deeper basinal water and shallow groundwater supported by the anion and cation data.

6.4 Gas/Headspace/Groundwater Discussion

Groundwater samples collected from the private water wells in 2011 indicate that groundwater in the area is naturally aerobic, as is consistent with regional information that groundwater in the area is recharged through infiltration of precipitation. The introduction of methane from

the Mesaverde formation through the 32-08 No. 30 well prior to being plugged and abandoned in 1994 had a direct influence on groundwater chemistry. Methane concentrations were elevated in the area of the source as measured in monitor wells, and are lower in the surrounding private water wells. The increased concentration of methane in groundwater activated microbial respiration that resulted in a decrease in ORP that led to the development of an anaerobic environment. With the development of anaerobic conditions, SRB populations increased in response to methane concentrations. As methane is consumed by the SRB populations, hydrogen sulfide is produced by the reduction of sulfate. The production of hydrogen sulfide from this biological cycle is dependent on the available mass of methane. Because the source of methane is limited to the release from the P&A 32-08 No. 30 well, the total mass of hydrogen sulfide that can be produced is therefore limited.

Once the methane concentration is reduced by microbial consumption, hydrogen sulfide will no longer be produced. Since hydrogen sulfide is only stable at negative ORP (-250 mV to -50 mV) conditions, the natural attenuation of the ORP due to the recharge of the aquifer with oxygenated groundwater from outside the area of investigation, the ORP in the area will increase to the background conditions as observed in the private water wells in 2011. The resulting increase in ORP will cause the hydrogen sulfide to convert back to sulfate through oxidation and dissolved iron and manganese will be precipitated as oxides.

The methane gas that remains in the upper permeable zones, likely will continue to migrate vertically to the surface through limited preferential pathways. Data collected in support of this investigation was not intended to evaluate the vertical migration pathway above the water bearing zones. Given the microbially mediated reduction in the methane in the groundwater, the concentrations of methane and hydrogen sulfide will naturally attenuate through time in the subsurface in the vicinity of the 32-08 No. 30 well.

Section 7.0 Conclusions

Site Geology and Hydrogeology Characteristics:

- Seven potentially permeable sand strata over a depth range of approximately 350 to 715 ft bgs were identified through boring logs and geophysical logs. Five of the sand zones were screened in order to obtain groundwater flow data and constituent concentration data in both the dissolved and vapor state. The other two identified sand layers were excluded due to lack of groundwater present in these zones. The screened sand zones were clearly co-related among the four monitor wells and private water wells in the Site vicinity.
- The Zone "C" sand and deeper are consistently saturated; however, the upper Zone "A" and "B" sands appear unsaturated, even though they coincide with the apparent screen depths of some of the local private wells.

- Groundwater flow direction in the Zone "D" and "E/G" sands appear consistently to the east toward Los Pinos River. Groundwater flow direction in the Zone "C" sand has not been defined due to fluctuations in groundwater elevations during the sampling period.

Site Related Constituent Evaluation

Methane:

- Methane concentrations in samples from Site monitor wells were measured up to 90 mole percent in subsurface gas and up to 10.0 mg/L in groundwater.
- Chemical and isotopic characteristics of the methane in samples from monitor wells were consistent with a source from the Mesaverde production zone.
- Dissolved and gas phase methane was concentrated in the area and depth interval of the former private water well SJ 03250 and corresponding sand zones in the monitor wells.
- The preferential pathway for the Mesaverde gas to the multiple shallow groundwater zones is associated with the historical operation of the former San Juan 32-8 No. 30 gas well, which was plugged and abandoned in 1994.
- Methane concentrations in samples from monitor wells exhibit some variability over time but variability of methane in the subsurface is well documented by numerous studies and can be attributed to such things as barometric pressure, substrate moisture content, and equalization following disturbances caused by monitor well installation and development processes.

Hydrogen sulfide:

- Hydrogen sulfide concentrations were detected up to 240 ppmv in subsurface gas samples and up to 146 ppm in groundwater samples from monitor wells but not in private water wells except the former private water well SJ 03250.
- Dissolved and gas phase hydrogen sulfide was concentrated in the former private water well SJ 03250 and corresponding sand zones in the monitor wells.
- The potential source of hydrogen sulfide in former private water well SJ 03250 has been inferred to be a byproduct of the biodegradation of methane. Analysis of sulfate reducing bacteria indicates high concentrations of SRB present in Monitor Wells MW-1 and MW-4.

Groundwater chemistry:

- TDS concentrations reported in the surrounding vicinity of the Site were detected at a maximum concentration of 8,730 mg/L from the SJ 32-08 No. 204 production well and 4,640 mg/L from the SJ 02816 private water well and were relatively consistent throughout background and current sampling events within the private and monitoring wells.

- Sulfate concentrations reported in the surrounding vicinity of the Site were detected at a maximum concentration of 5,290 mg/L from the SJ 0389P1 private water well and were relatively consistent throughout background and current sampling events within the private and monitoring wells.
- There is no correlation to variation in TDS or Sulfate in the vicinity of the Site. Both constituents at current concentrations appear to be at background levels and not influenced by Site related activities.
- Concentrations of TDS increased in groundwater with depth, typically with increasing predominance of sodium and sulfate with depth.
- Groundwater geochemical constituents and isotopic ratios were different than samples of produced water from either the Mesaverde or Fruitland Coal wells, indicating there is no apparent leakage of produced water from the E&P wells.
- Decreasing ORP values correspond to a reducing environment that supports the generation of hydrogen sulfide from methane by methanotrophic bacteria, as seen in MW-2 and MW-4 in Zone D. Stable or increasing ORP values correspond to reduced sulfide and air phase methane. Over time, sulfide concentrations will dissipate as fresh water enters the system, raising the ORP and oxidizing the hydrogen sulfide (H_2S) in the aquifer to return to a state of sulfate (SO_4).
- The overall distribution of methane (Figure 14B), dissolved hydrogen sulfide (Figure 16B) and SRB populations (Figure 18) provide a concept of the "radius of influence" of the natural gas release on the groundwater environment at the Site. The aforementioned figures show that the highest dissolved methane concentrations, largest SRB populations, and the resulting highest dissolved hydrogen sulfide concentrations are focused around the area of the initial well release and the monitor wells. The concentrations of the methane "food" for the SRBs and hence the byproduct hydrogen sulfide all decrease radially outward from the source to background concentrations. With time, the concentrations within the radius of influence should decline as the methane is consumed and aerobic groundwater conditions are reestablished by the influx of fresh groundwater.

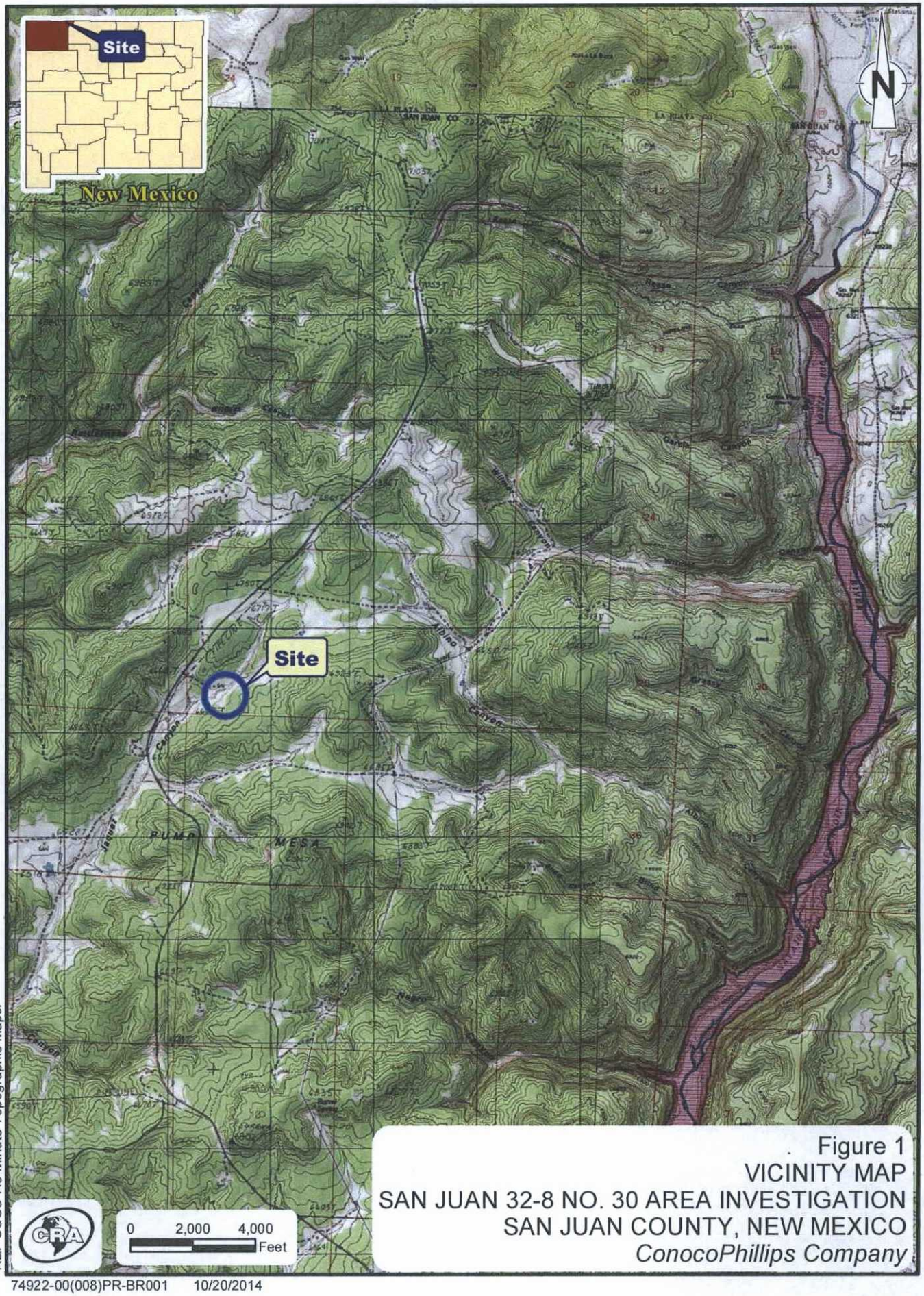


Figure 1
VICINITY MAP
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

RE: USGS 7.5 Minute Topographic Maps.

74922-00(008)PR-BR001 10/20/2014

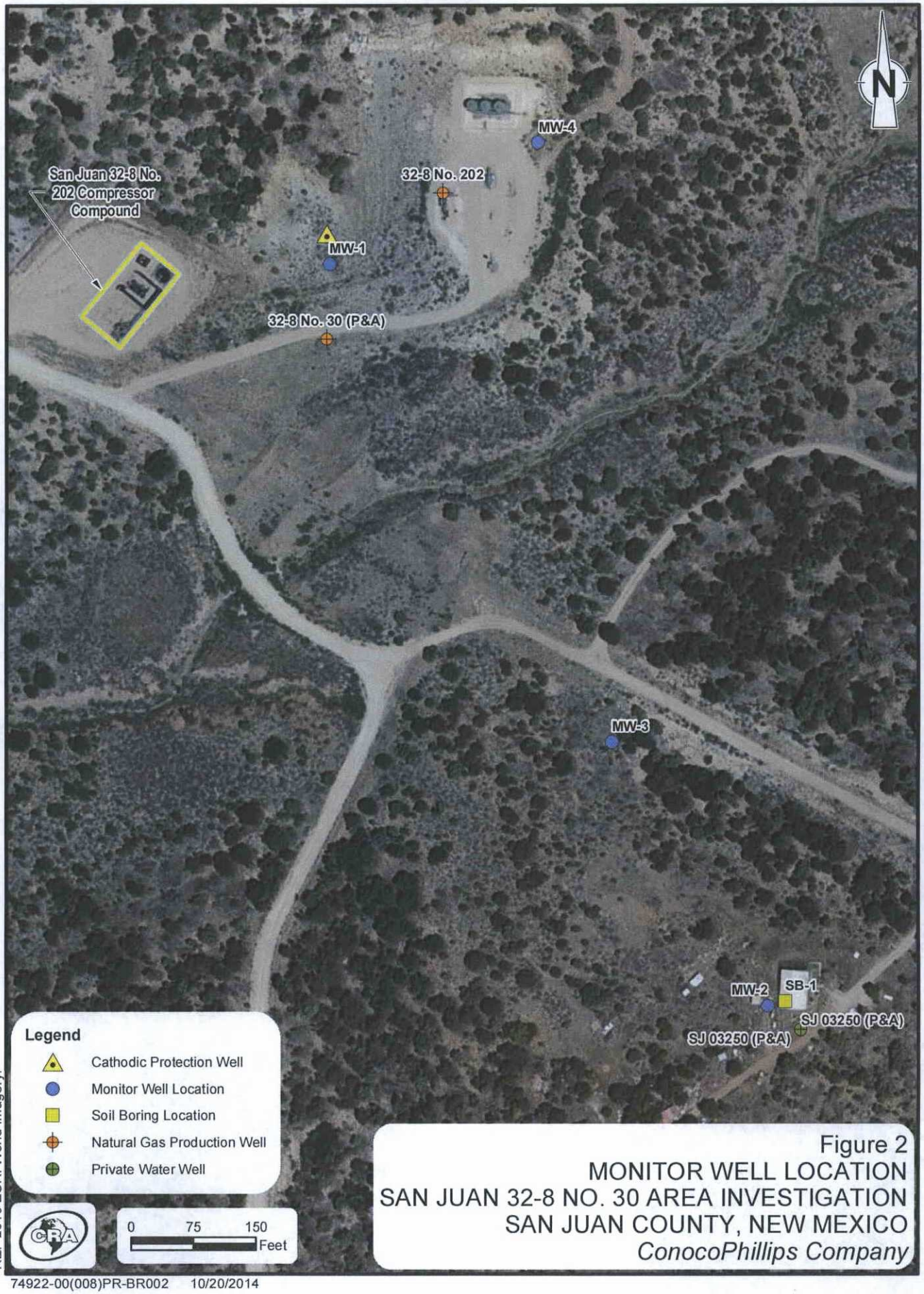


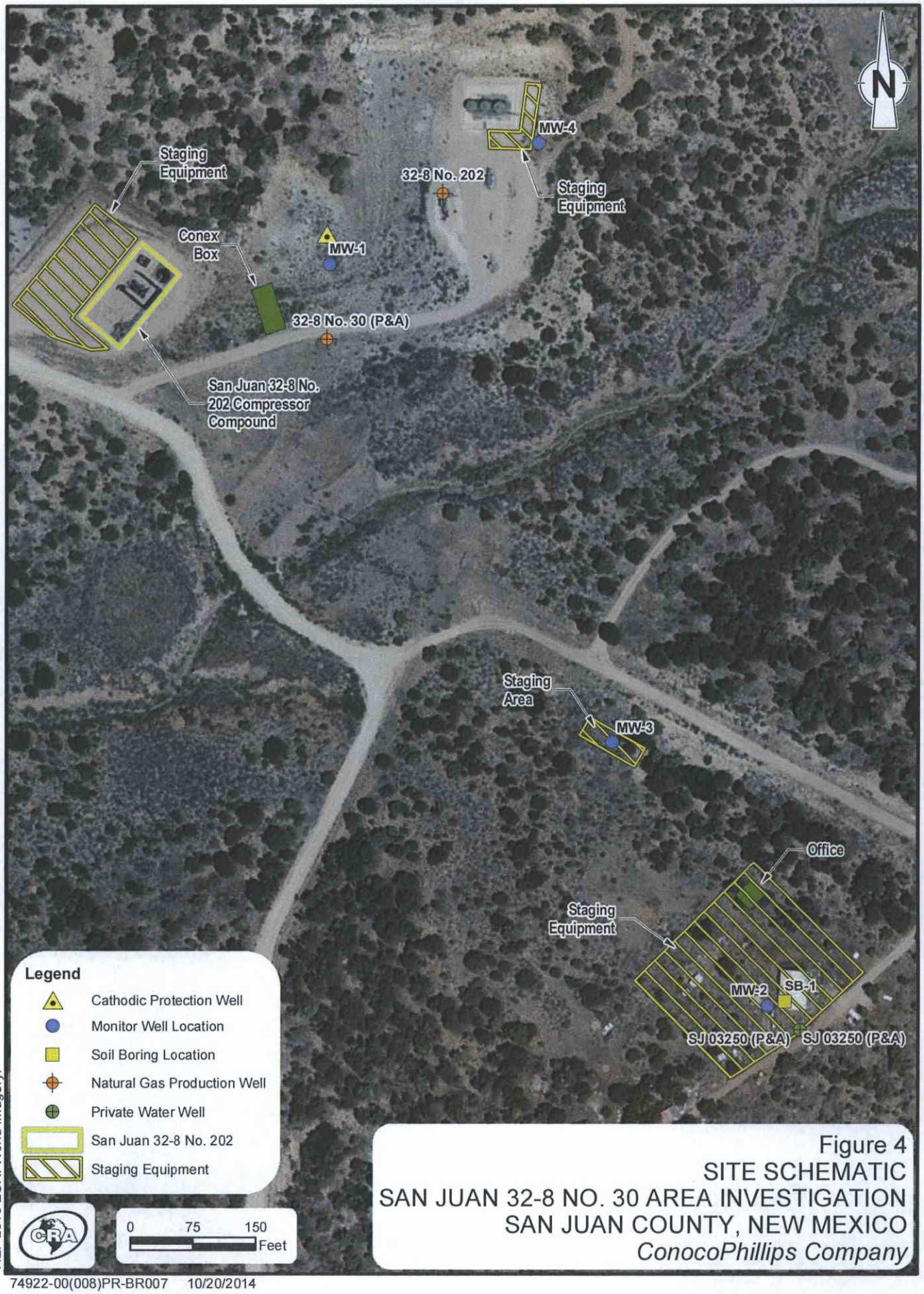
Figure 2
MONITOR WELL LOCATION
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-00(008)PR-BR002 10/20/2014



Figure 3
PRIVATE WATER AND GAS WELLS
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

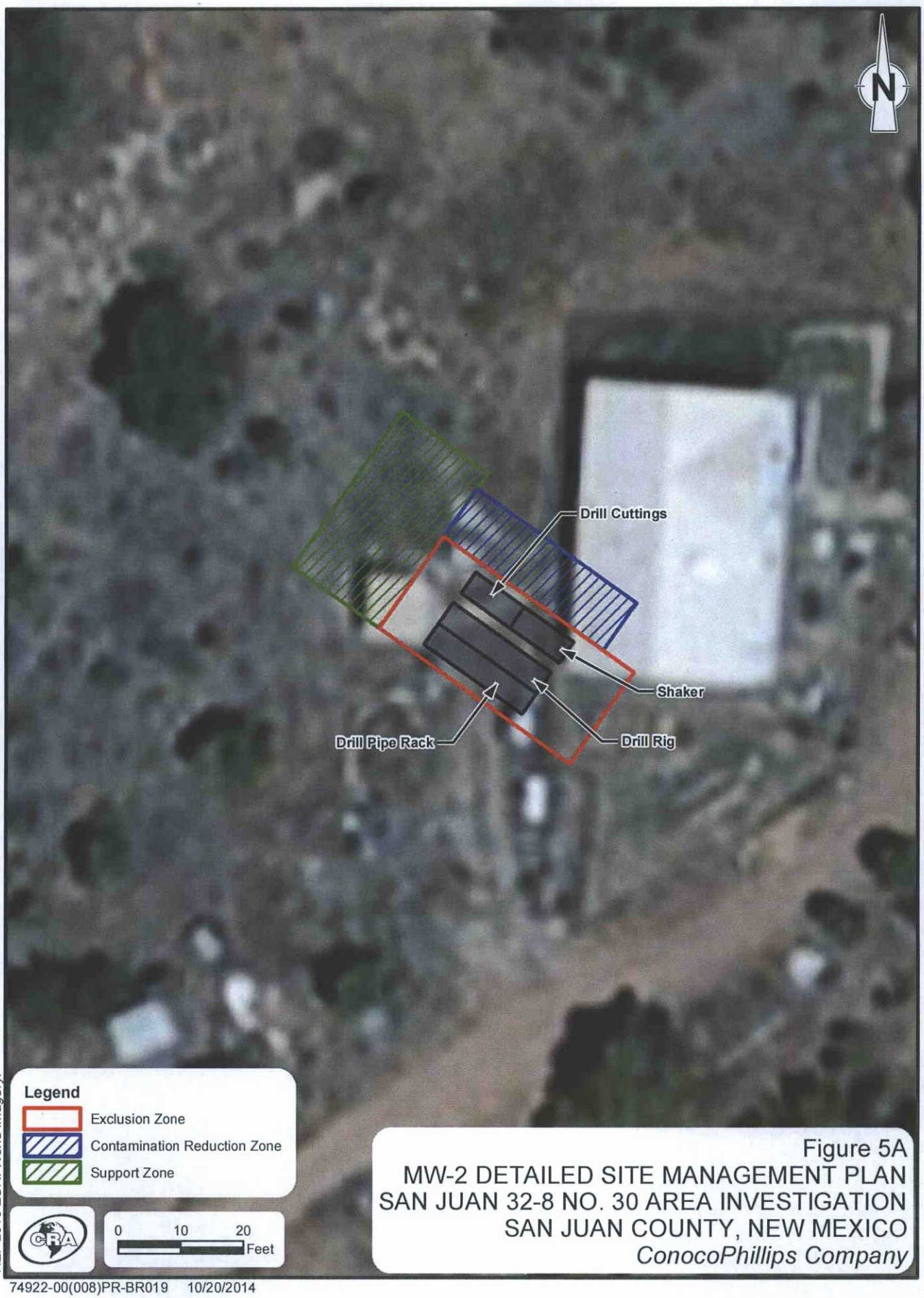
74922-00(008)PR-BR003 3/31/2015



RE: 2010 ESRI World Imagery.

Figure 4
SITE SCHEMATIC
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

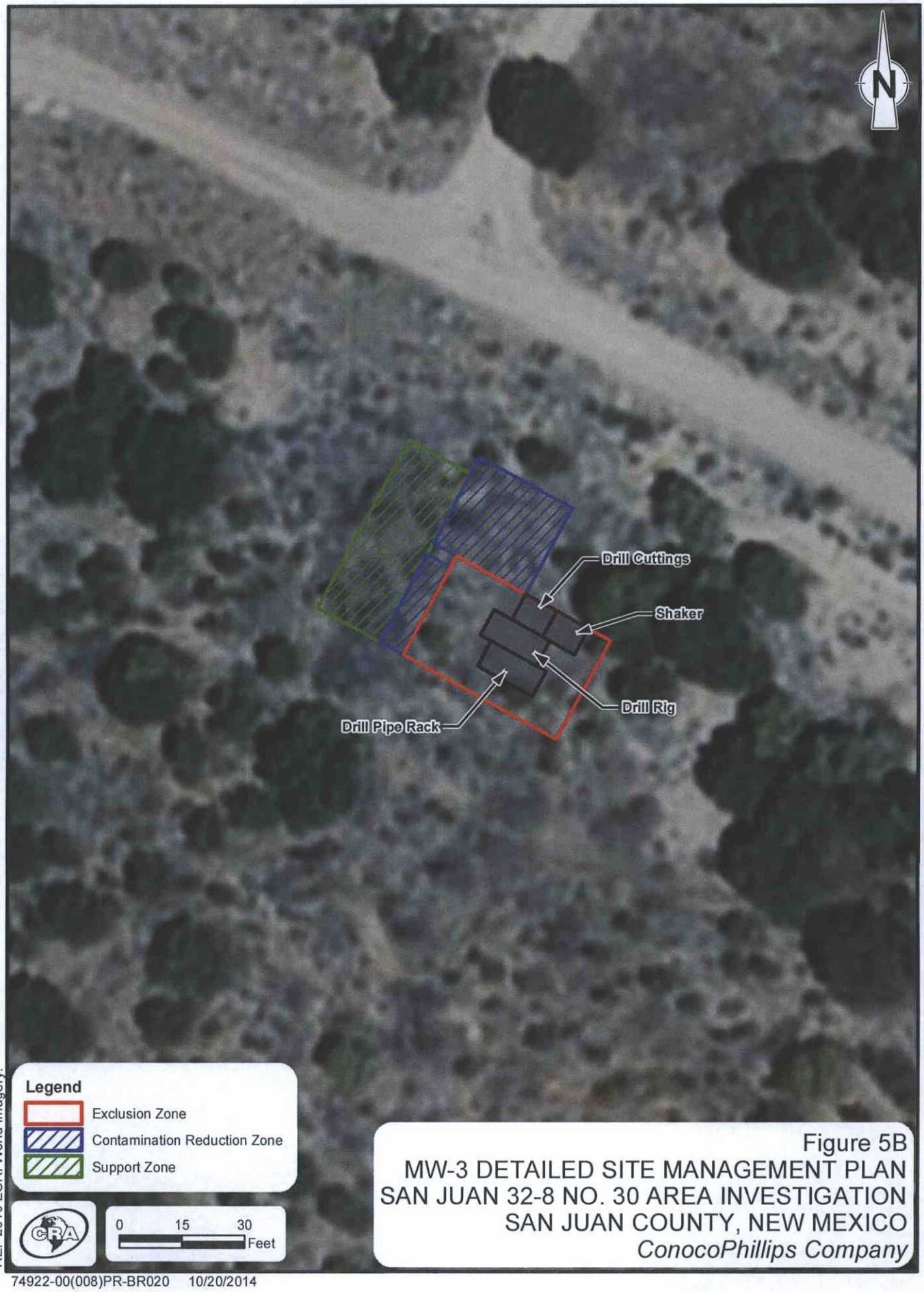
74922-00(008)PR-BR007 10/20/2014



RE: 2010 ESRI World Imagery.

Figure 5A
MW-2 DETAILED SITE MANAGEMENT PLAN
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

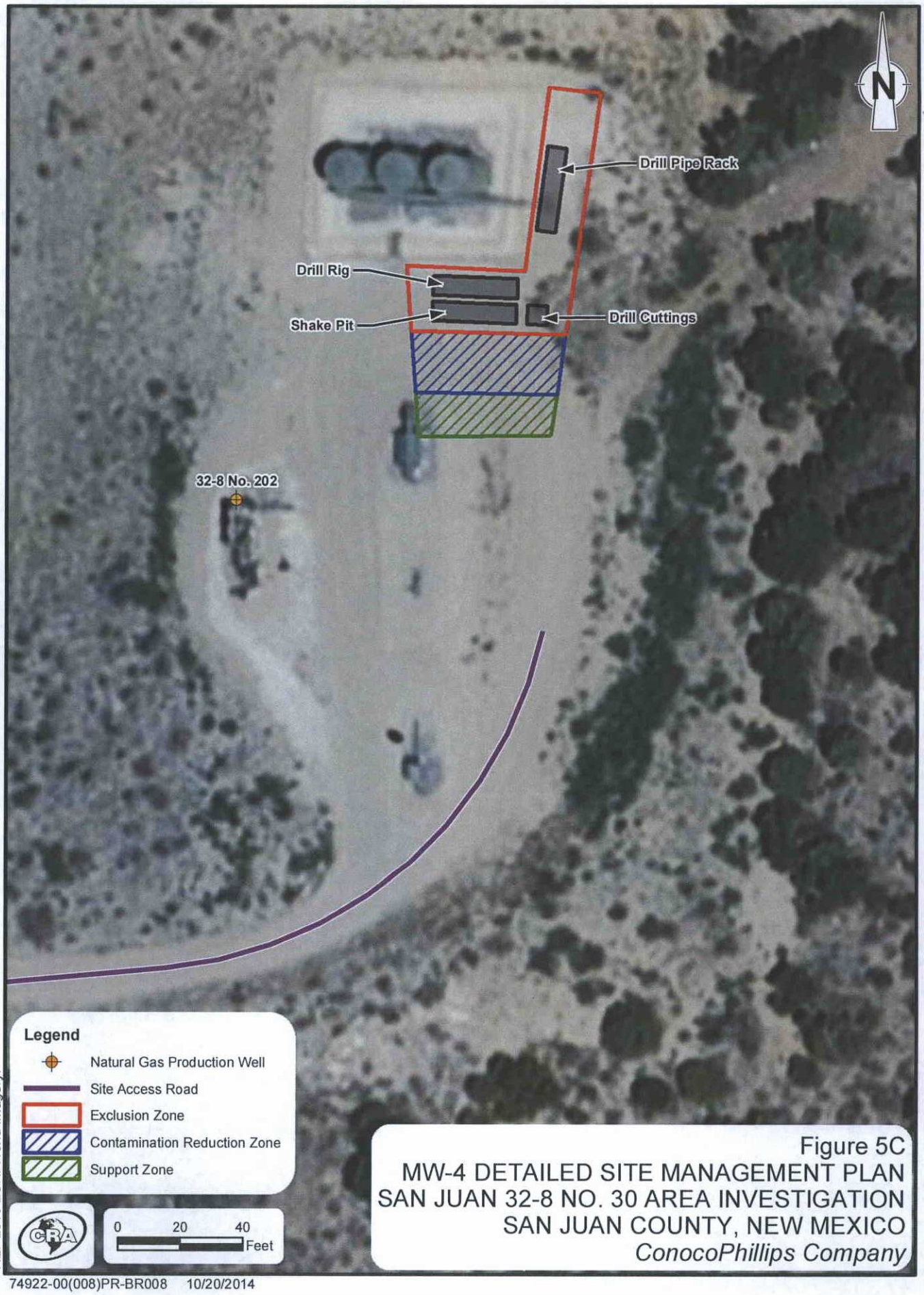
74922-00(008)PR-BR019 10/20/2014



RE: 2010 ESRI World Imagery.

Figure 5B
MW-3 DETAILED SITE MANAGEMENT PLAN
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-00(008)PR-BR020 10/20/2014



RE: 2010 ESRI World Imagery.

74922-00(008)PR-BR008 10/20/2014

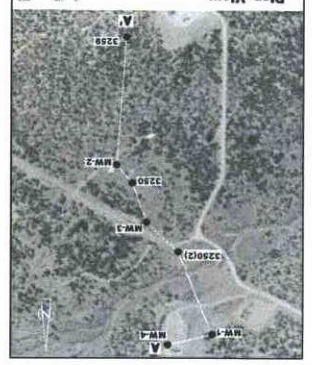
Figure 5C
MW-4 DETAILED SITE MANAGEMENT PLAN
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

Figure 6
GEOLOGICAL CROSS SECTION (A-A') BASED ON GEOPHYSICAL LOGS
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

LEGEND
- "G" SAND GROUNDWATER ELEVATION FEBRUARY 2014 (NAVD 88)
- "G" SAND GROUNDWATER ELEVATION FEBRUARY 2014 (NAVD 88)
- "E" / "G" SAND GROUNDWATER ELEVATION FEBRUARY 2014 (NAVD 88)
- SCREEN INTERVAL
- UNSATURATED SANDSTONE
- SATURATED SANDSTONE

Vertical Scale
Horizontal = Not to Scale

Plan View



North

A

South

A'

Elevation, Feet NAVD 88

6800
6700
6600
6500
6400
6300
6200
6100
6000
5900

3823
2992
Cathode Well
MW-1
3250(2)*
3250*
SB-1
3259
2816
3897
3379

ND
ND

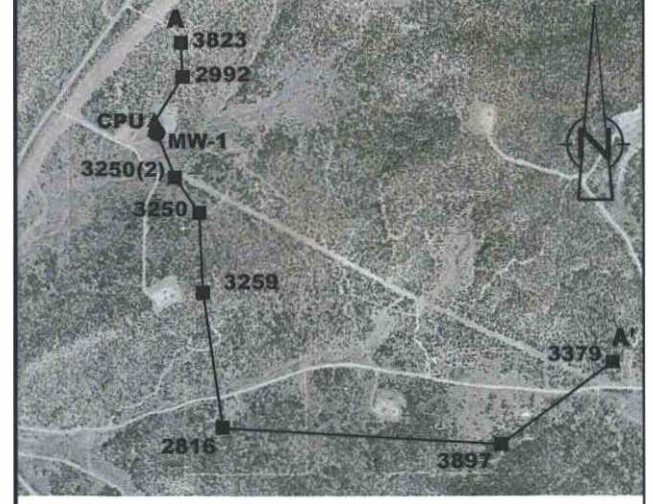
"A" Sand
"B" Sand
C Sand
D Sand
G Sand
"C" Sand
"D" Sand
"E" Sand
"F" Sand
"G" Sand
"A"
"B"
"C"
"D"
"E"
"F"

Approximate Elevation of
Los Pinos River and Navajo Lake

Cross Section A-A'

0 50 100ft
Vertical Scale

0 500 1000ft
Horizontal Scale



Plan View

0 1000 2000ft

Legend

- Water Well Location
- Monitor Well Location
- Cathode Protection Unit (CPU)
- Well Screen Location
- Reported Domestic Well Groundwater Surface Elevation
- Monitor Well Measured Groundwater Elevation, Ft. NAVD
- Shale With Interbedded Siltstone
- Fine To Medium Grained Arkosic Sandstone
- ND — No Data
- Z1 — MW-1 Screened Zone
- * — Plugged and Abandoned

Notes:

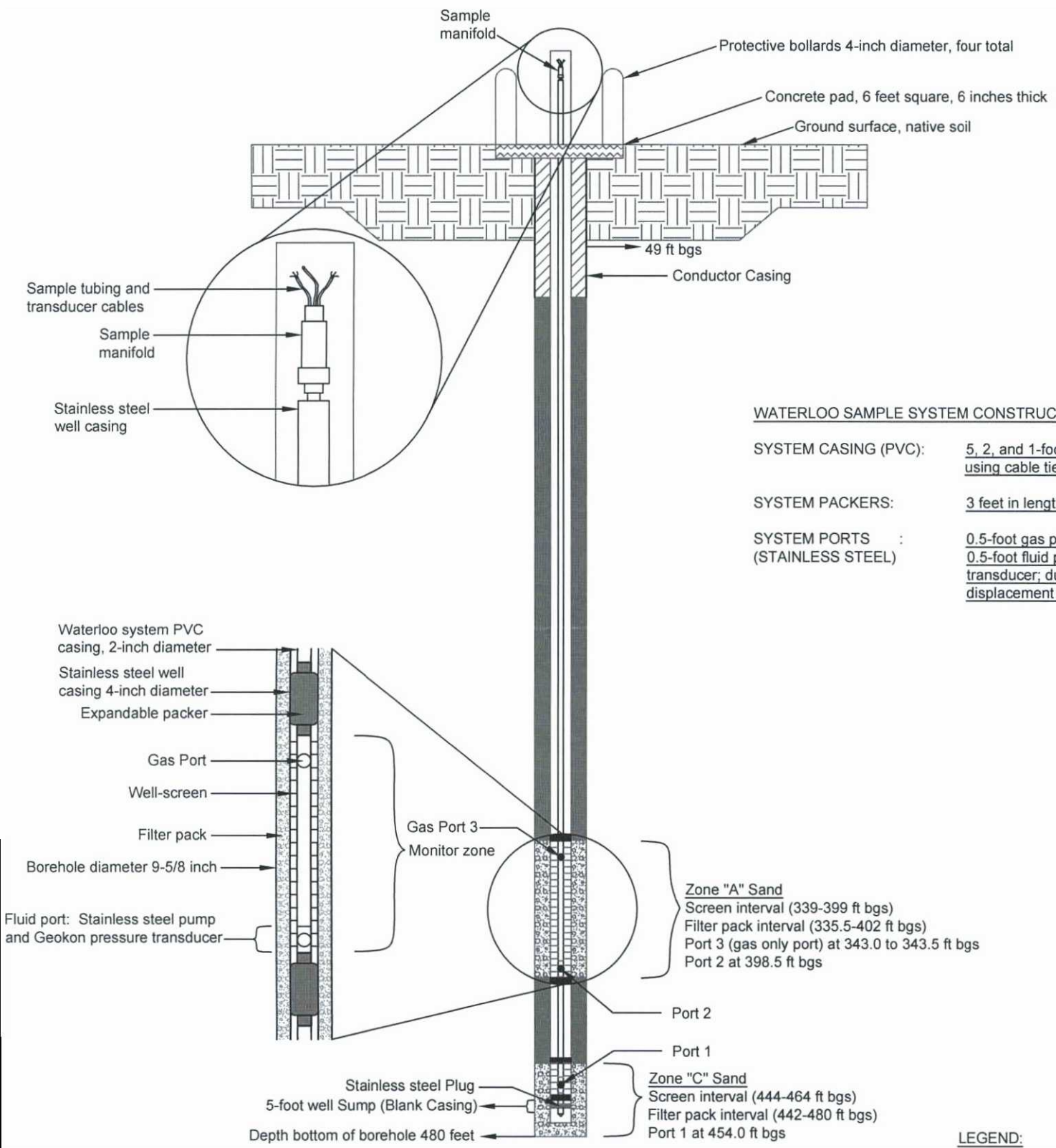
1) Refer to boring log for details.
2) Elevations determined from Site Elevation Survey, relative to NAVD 88.
3) Screened Zones 4 and 5 were not saturated.
4) Private well depths and groundwater elevations from records of the New Mexico Office of the State Engineer.

Figure 7
PRIVATE AND MONITOR WELL
CROSS SECTION A-A'
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

CRA

074922-00(008)GN-BR016 SEP 4/2014

MULTI-UNIT GROUNDWATER MONITORING WELL
MW-2



WATERLOO SAMPLE SYSTEM CONSTRUCTION NOTES:

SYSTEM CASING (PVC):	5, 2, and 1-foot lengths. Segments coupled using cable ties.
SYSTEM PACKERS:	3 feet in length
SYSTEM PORTS (STAINLESS STEEL) :	0.5-foot gas port single opening 0.5-foot fluid port, Geokon vibrating wire transducer; dual tube, nitrogen displacement pump

LEGEND:

- Cement grout (5% Bentonite)
- Bentonite-silica sand seal (50/50)
- Filter pack, 10/20 silica sand
- Rod-based, wire-wrapped, 20 slot stainless steel screen

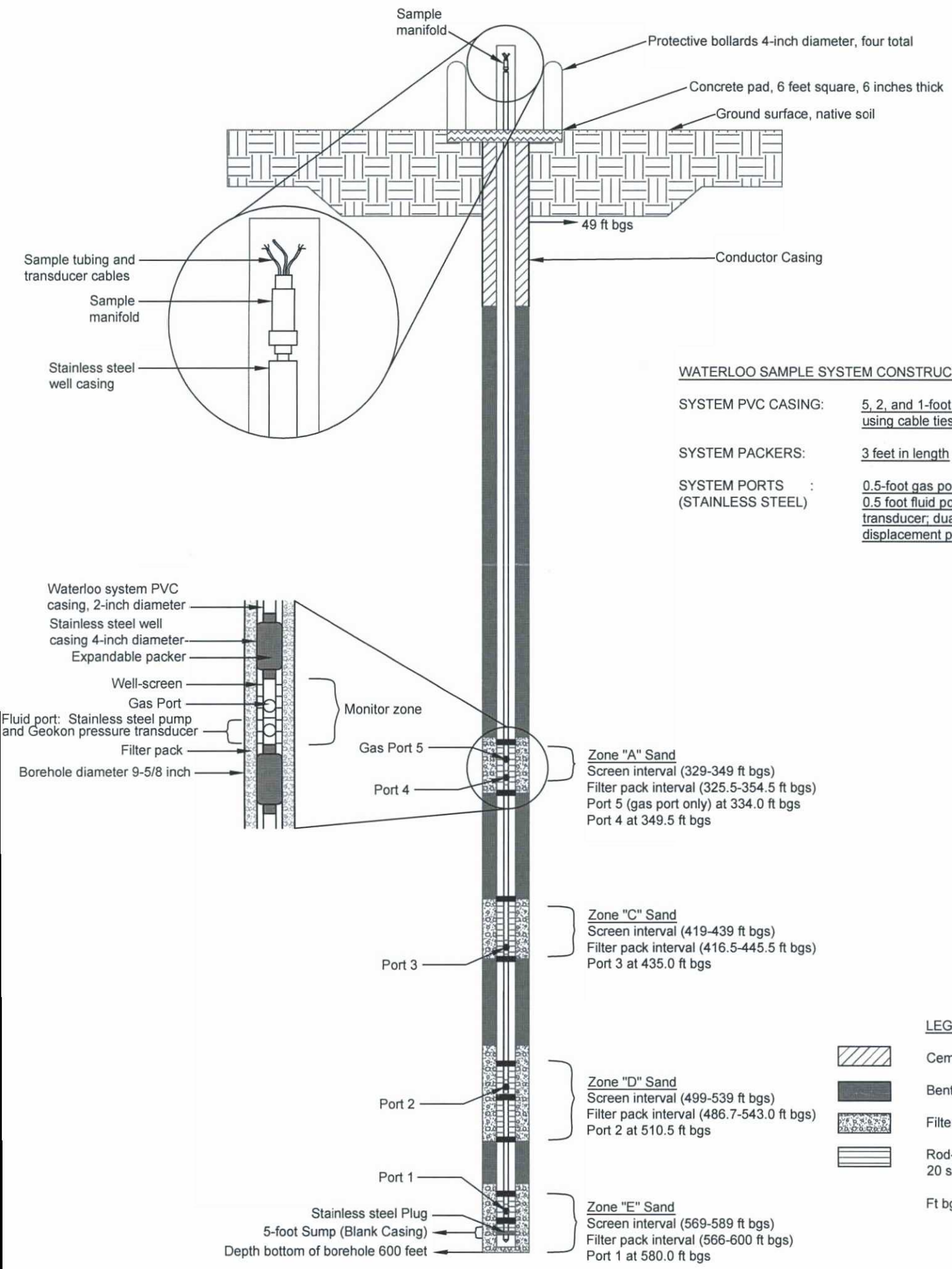
Ft bgs (Feet below ground surface)

Figure 8
WATERLOO SAMPLE SYSTEM AS-BUILT DESIGN
MONITOR WELL MW-2
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

FIGURE NOT TO SCALE

074922-00(008)GN-BR003 SEP 5/2014

MULTI-UNIT GROUNDWATER MONITORING WELL
MW-3



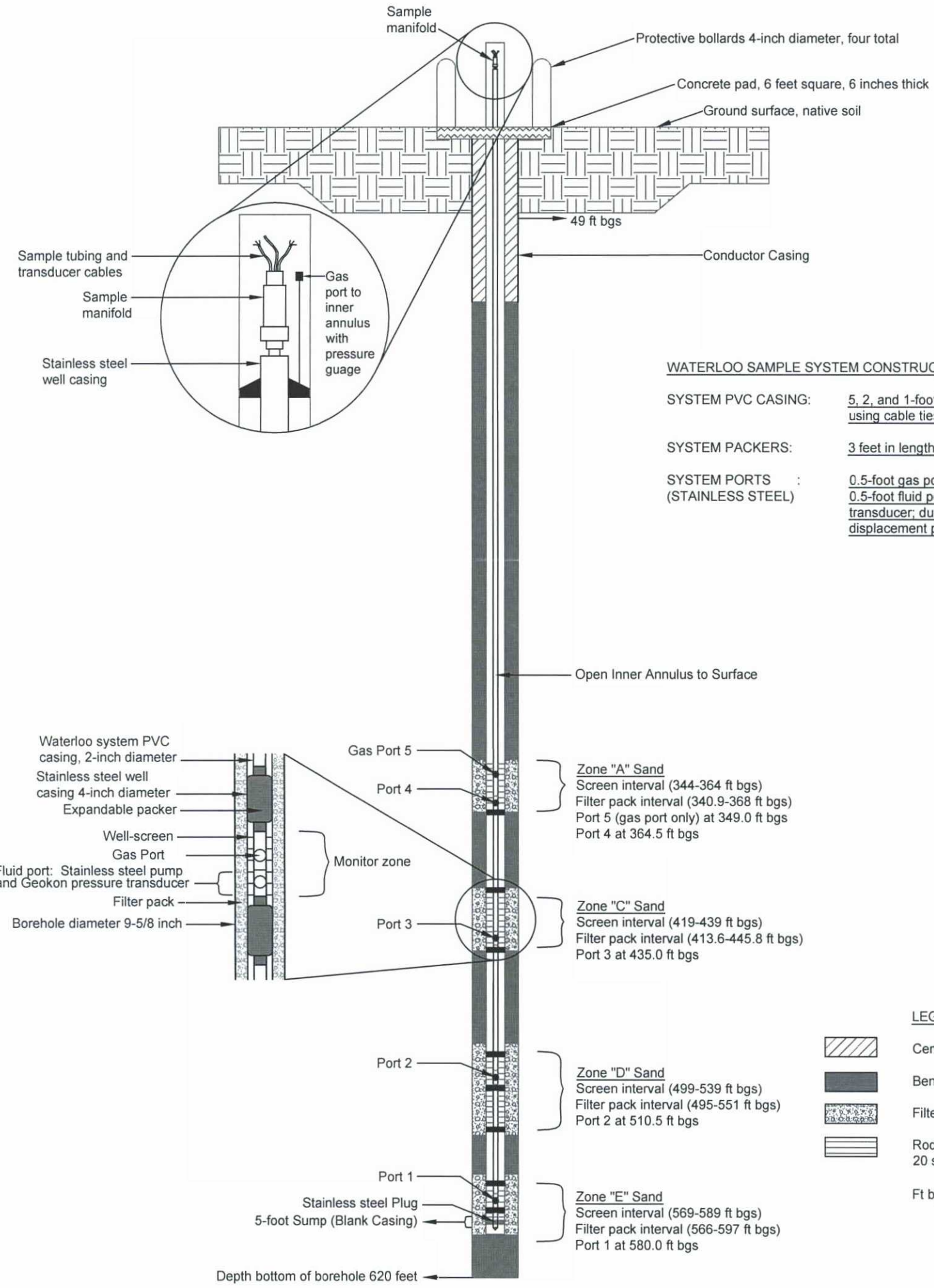
WATERLOO SAMPLE SYSTEM CONSTRUCTION NOTES:

SYSTEM PVC CASING:	5, 2, and 1-foot lengths. Segments coupled using cable ties.
SYSTEM PACKERS:	3 feet in length
SYSTEM PORTS (STAINLESS STEEL) :	0.5-foot gas port single opening 0.5 foot fluid port, Geokon vibrating wire transducer; dual tube, nitrogen displacement pump

Figure 9
WATERLOO SAMPLE SYSTEM AS-BUILT DESIGN
MONITOR WELL MW-3
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

FIGURE NOT TO SCALE

MULTI-UNIT GROUNDWATER MONITORING WELL
MW-4

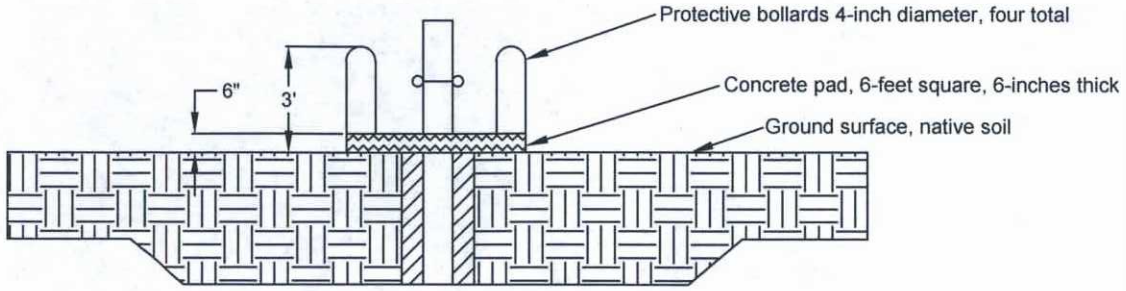


WATERLOO SAMPLE SYSTEM CONSTRUCTION NOTES:

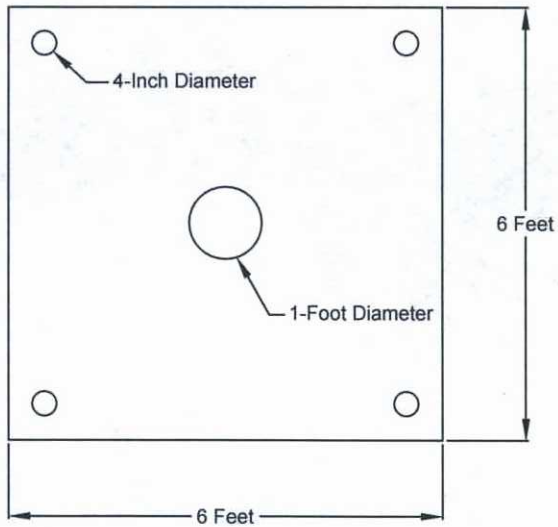
SYSTEM PVC CASING:	5, 2, and 1-foot lengths. Segments coupled using cable ties.
SYSTEM PACKERS:	3 feet in length
SYSTEM PORTS (STAINLESS STEEL) :	0.5-foot gas port single opening 0.5-foot fluid port, Geokon vibrating wire transducer; dual tube, nitrogen displacement pump

Figure 10
WATERLOO SAMPLE SYSTEM AS-BUILT DESIGN
MONITOR WELL MW-4
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

FIGURE NOT TO SCALE



Side View



Plan View

Figure not to scale

Figure 11

ABOVE GROUND COMPLETION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074922-00(008)GN-BR007 SEP 5/2014

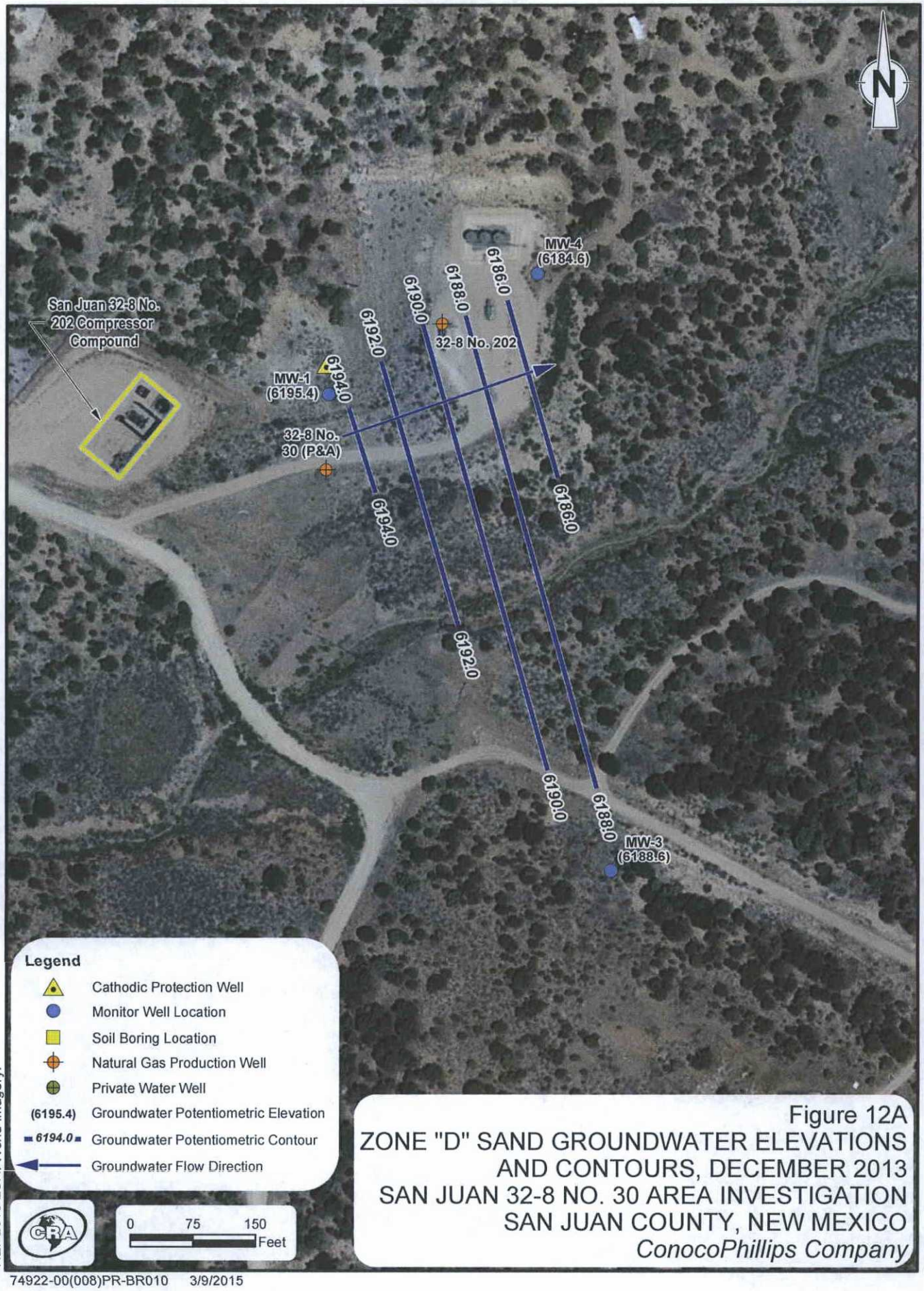
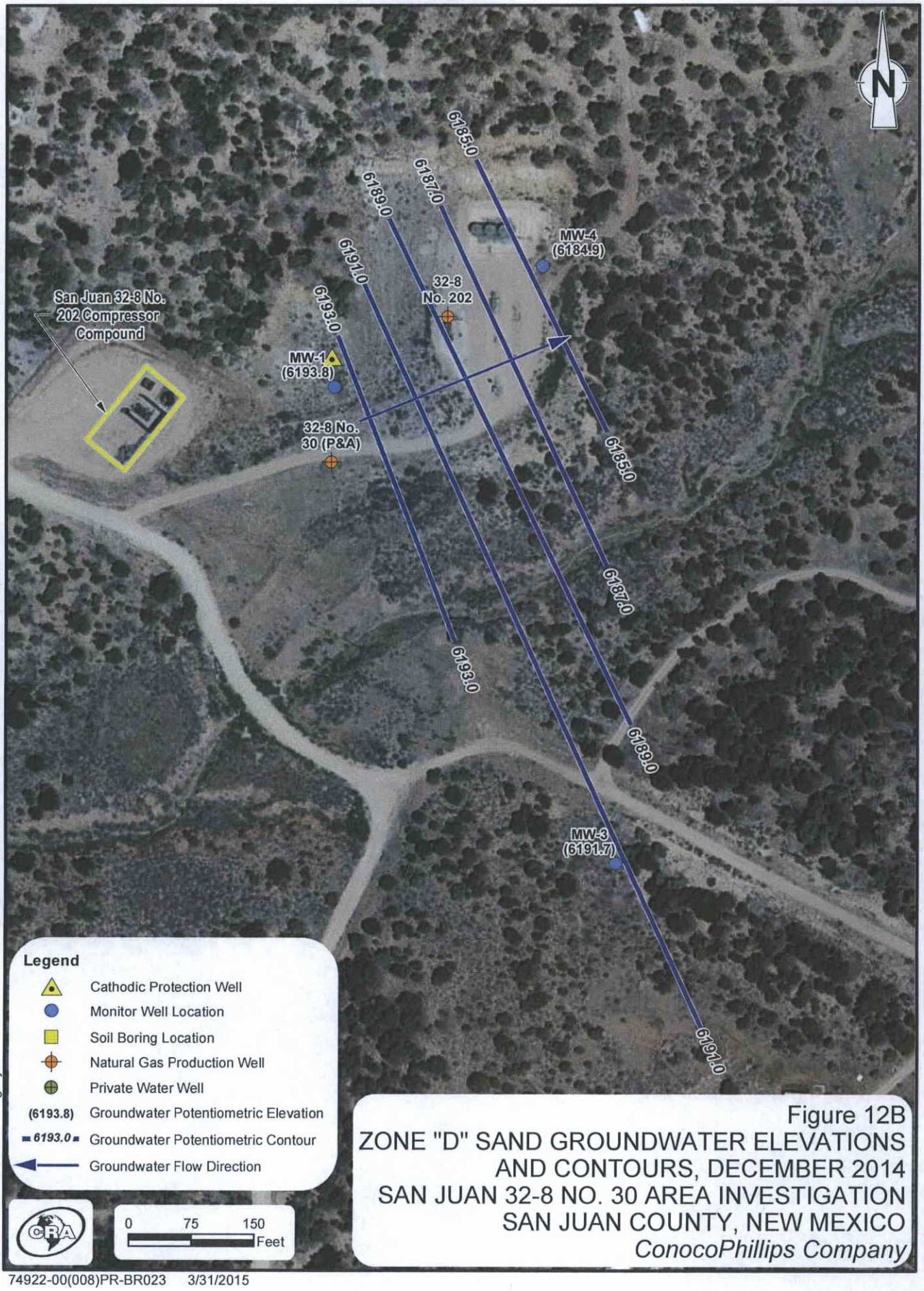


Figure 12A
ZONE "D" SAND GROUNDWATER ELEVATIONS AND CONTOURS, DECEMBER 2013
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-00(008)PR-BR010 3/9/2015



RE: 2010 ESRI World Imagery.

Figure 12B
ZONE "D" SAND GROUNDWATER ELEVATIONS AND CONTOURS, DECEMBER 2014
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-00(008)PR-BR023 3/31/2015

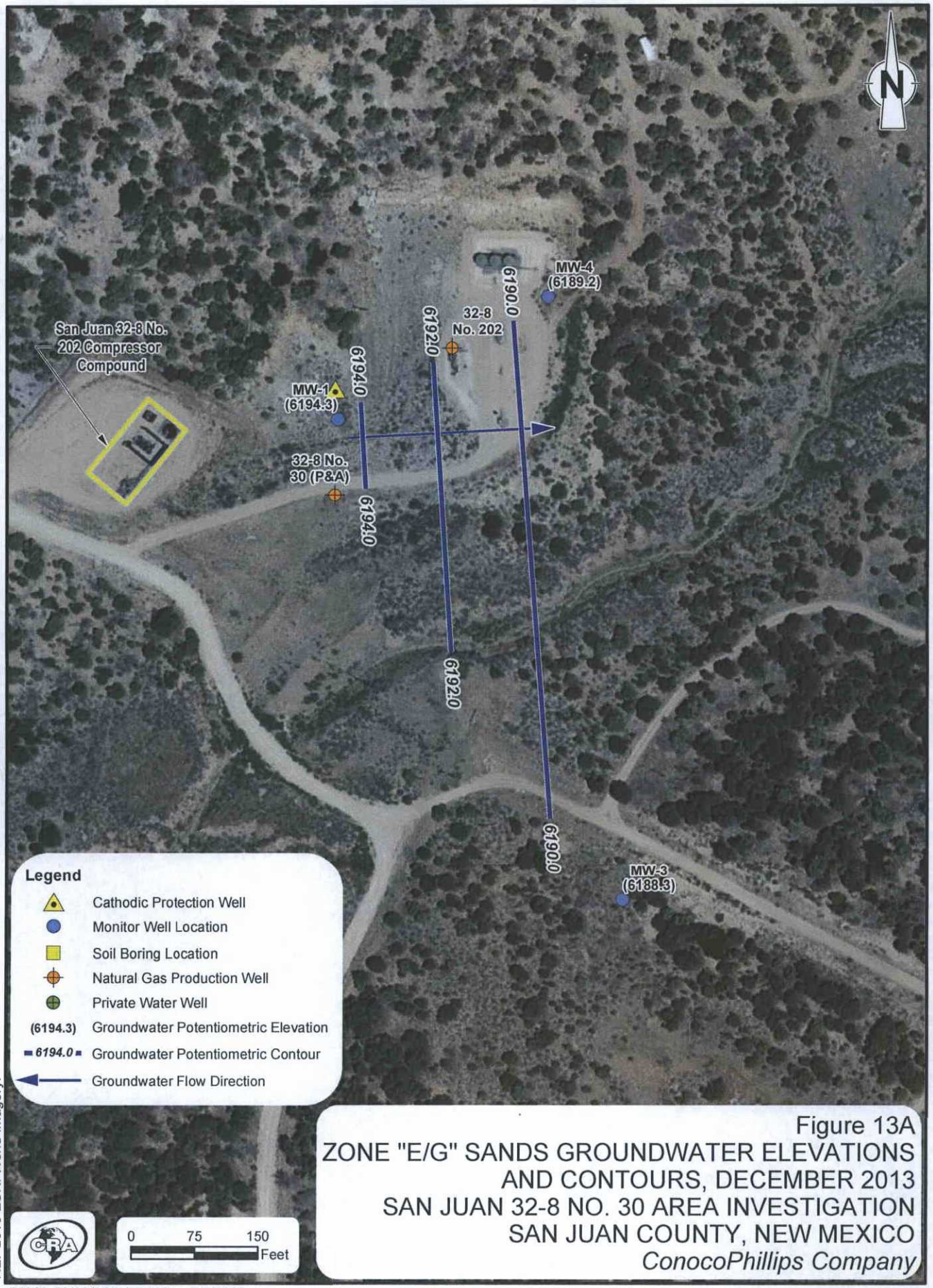


Figure 13A
ZONE "E/G" SANDS GROUNDWATER ELEVATIONS AND CONTOURS, DECEMBER 2013
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-00(008)PR-BR012 3/9/2015

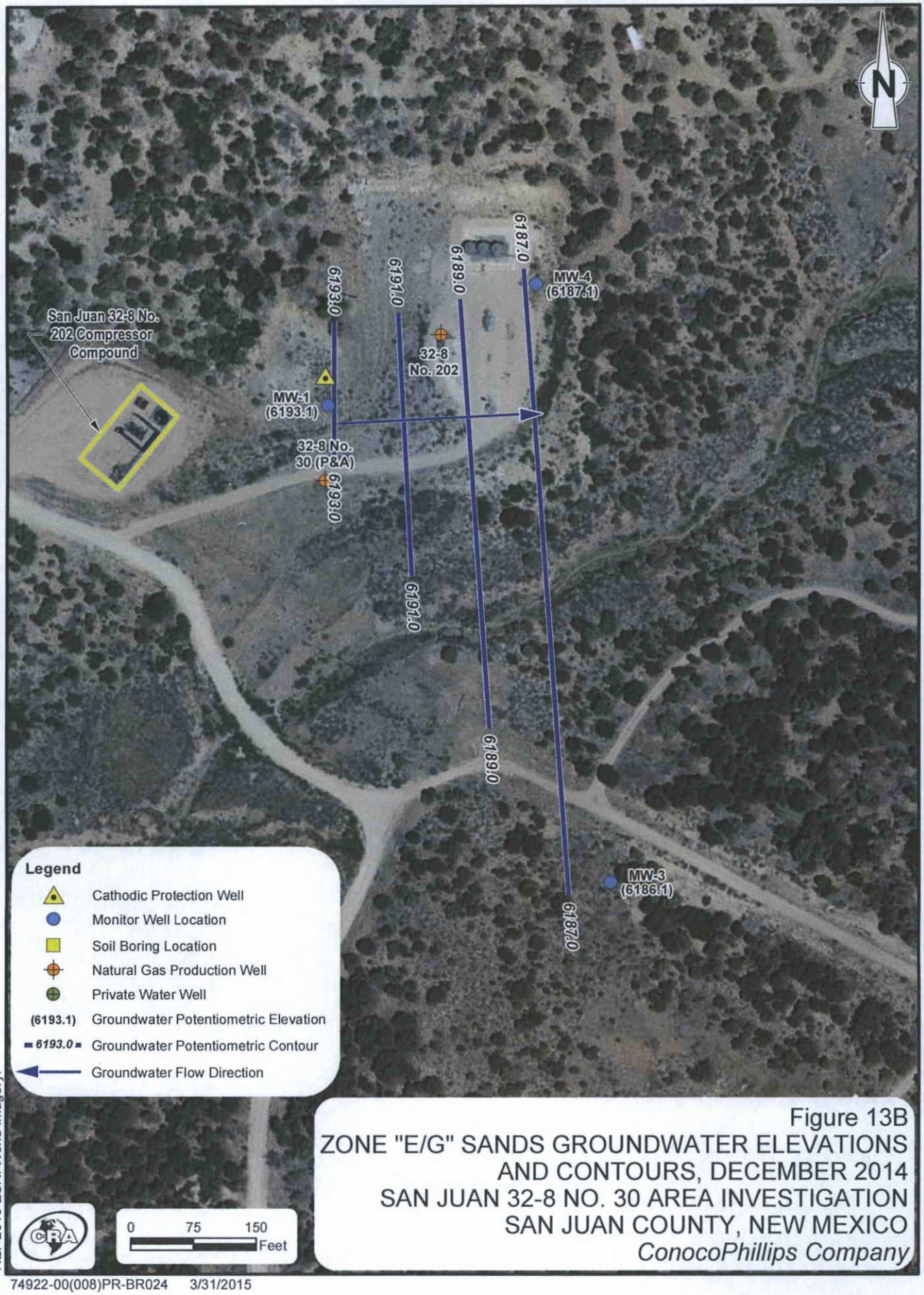


Figure 13B
ZONE "E/G" SANDS GROUNDWATER ELEVATIONS
AND CONTOURS, DECEMBER 2014
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-00(008)PR-BR024 3/31/2015



Legend

- ■ Water Well Location
- ● Monitor Well Location

Note: This figure shows the plan view for figures 14A, 15A, 16A, & 17A.

Figure 14

PLAN VIEW A-A'
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074922-00(008)GN-BR015 MAR 31/2015

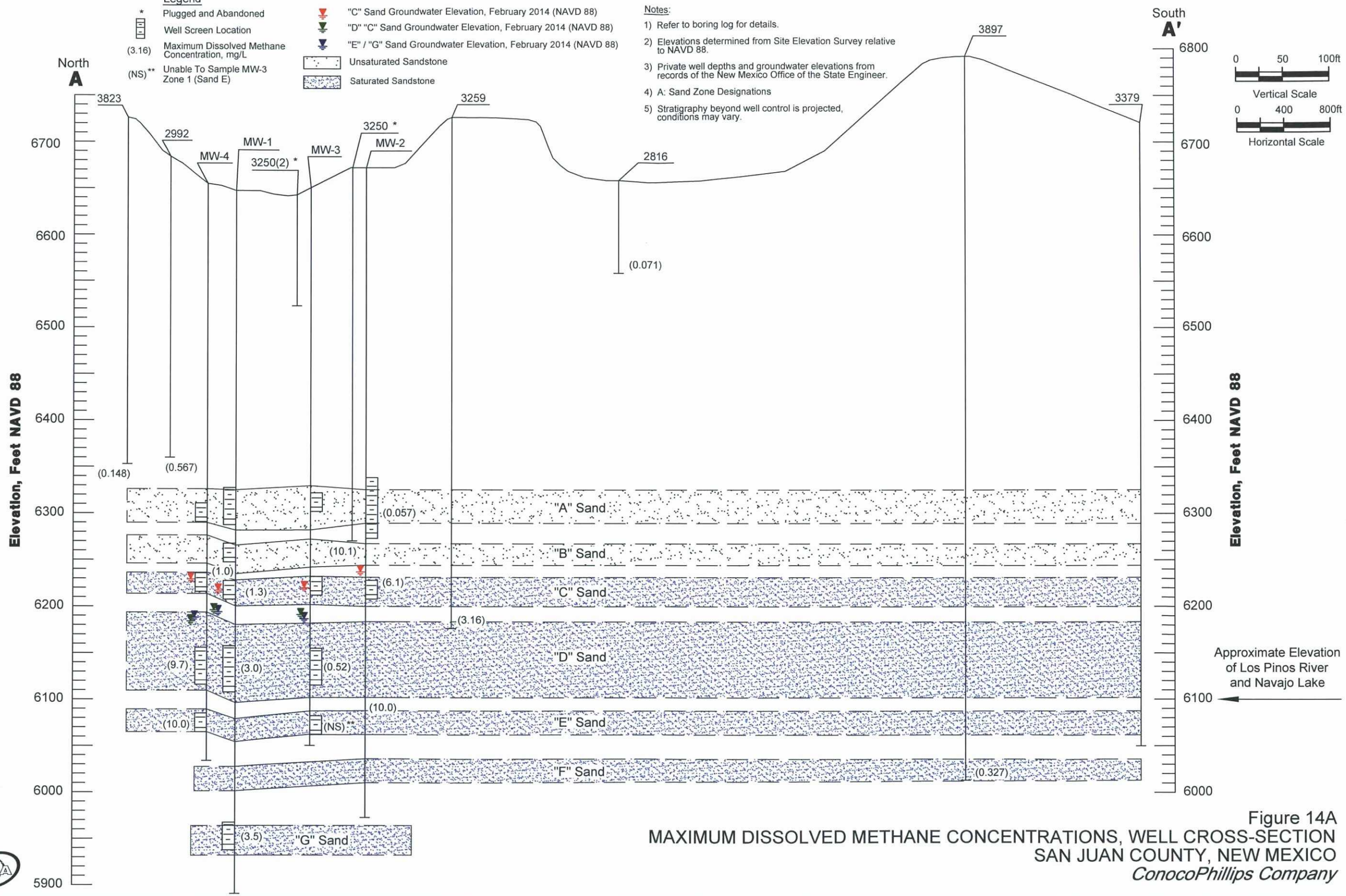


Figure 14A
MAXIMUM DISSOLVED METHANE CONCENTRATIONS, WELL CROSS-SECTION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074922-00(008)GN-BR018 MAR 31/2015

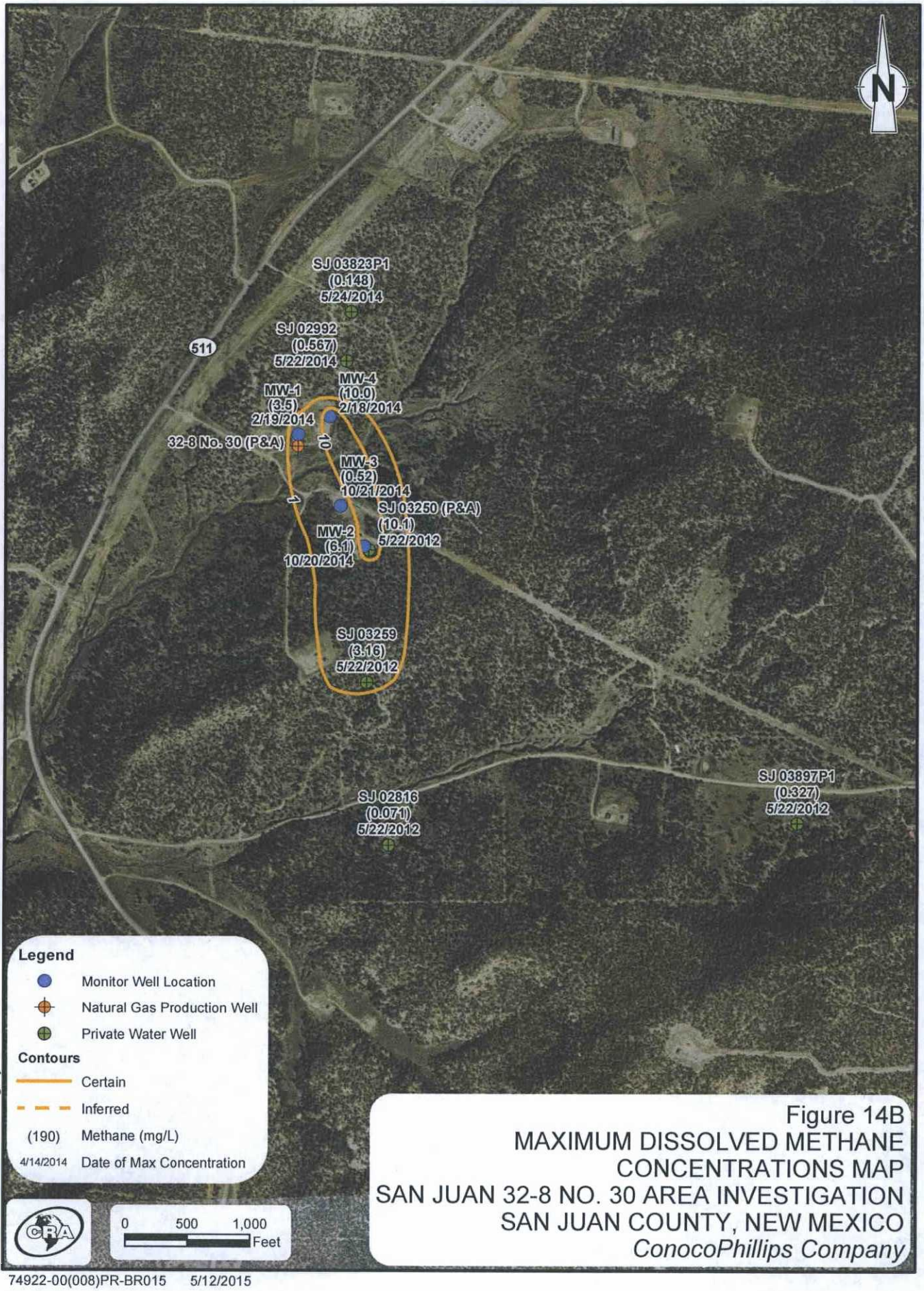


Figure 14B
MAXIMUM DISSOLVED METHANE CONCENTRATIONS MAP
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-00(008)PR-BR015 5/12/2015

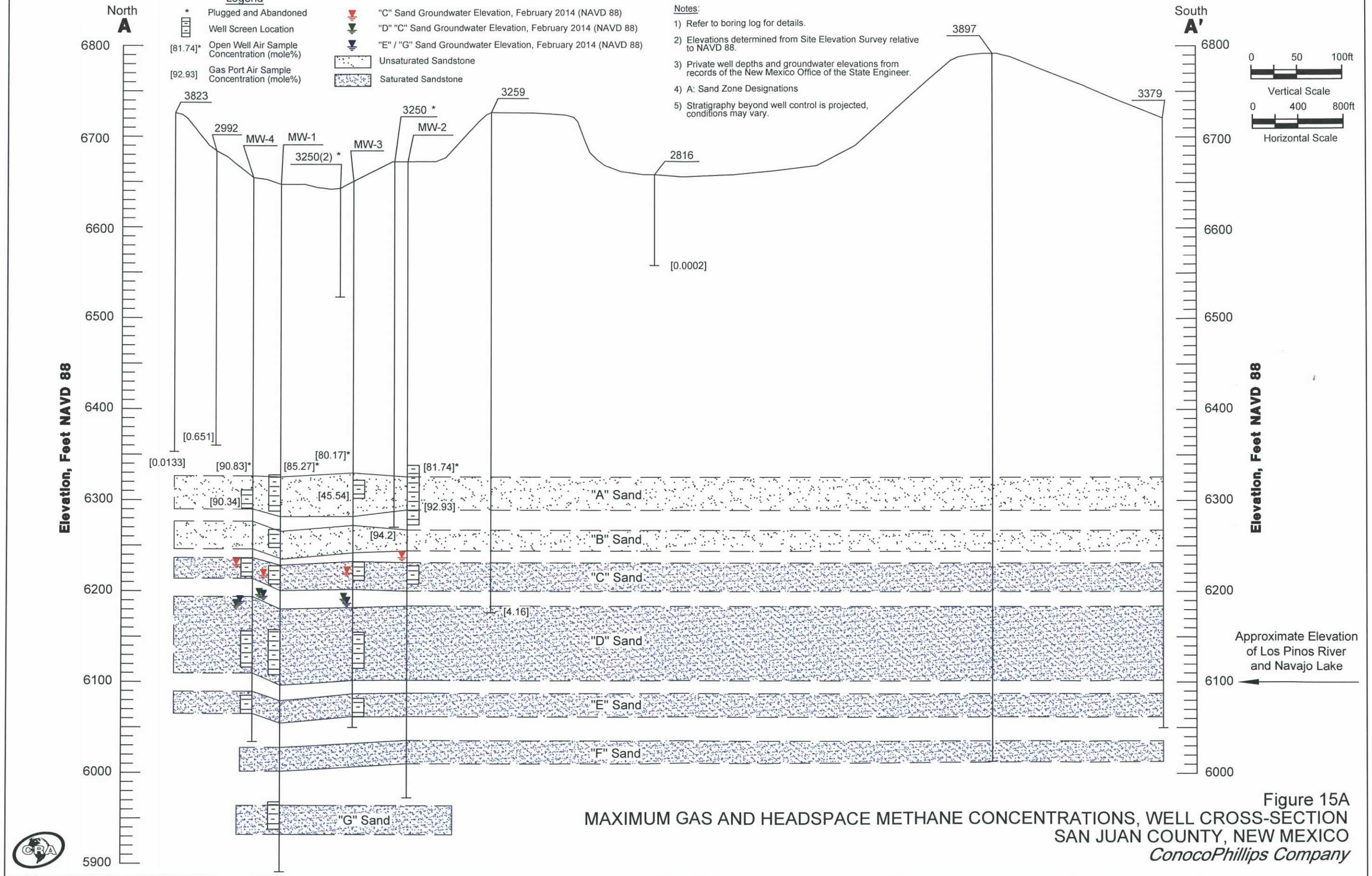


Figure 15A
MAXIMUM GAS AND HEADSPACE METHANE CONCENTRATIONS, WELL CROSS-SECTION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074922-00(008)GN-BR020 MAY 12/2015

Legend

* Plugged and Abandoned

Well Screen Location

(8.8) Dissolved Hydrogen Sulfide Maximum Concentration, mg/L

(NS)** Unable To Sample MW-3 Zone 1 (Sand E)

(ND) Not Detected

"C" Sand Groundwater Elevation, February 2014 (NAVD 88)

"D" "C" Sand Groundwater Elevation, February 2014 (NAVD 88)

"E" / "G" Sand Groundwater Elevation, February 2014 (NAVD 88)

Unsaturated Sandstone

Saturated Sandstone

Notes:

1) Refer to boring log for details.
2) Elevations determined from Site Elevation Survey relative to NAVD 88.
3) Private well depths and groundwater elevations from records of the New Mexico Office of the State Engineer.
4) A: Sand Zone Designations
5) Stratigraphy beyond well control is projected, conditions may vary.

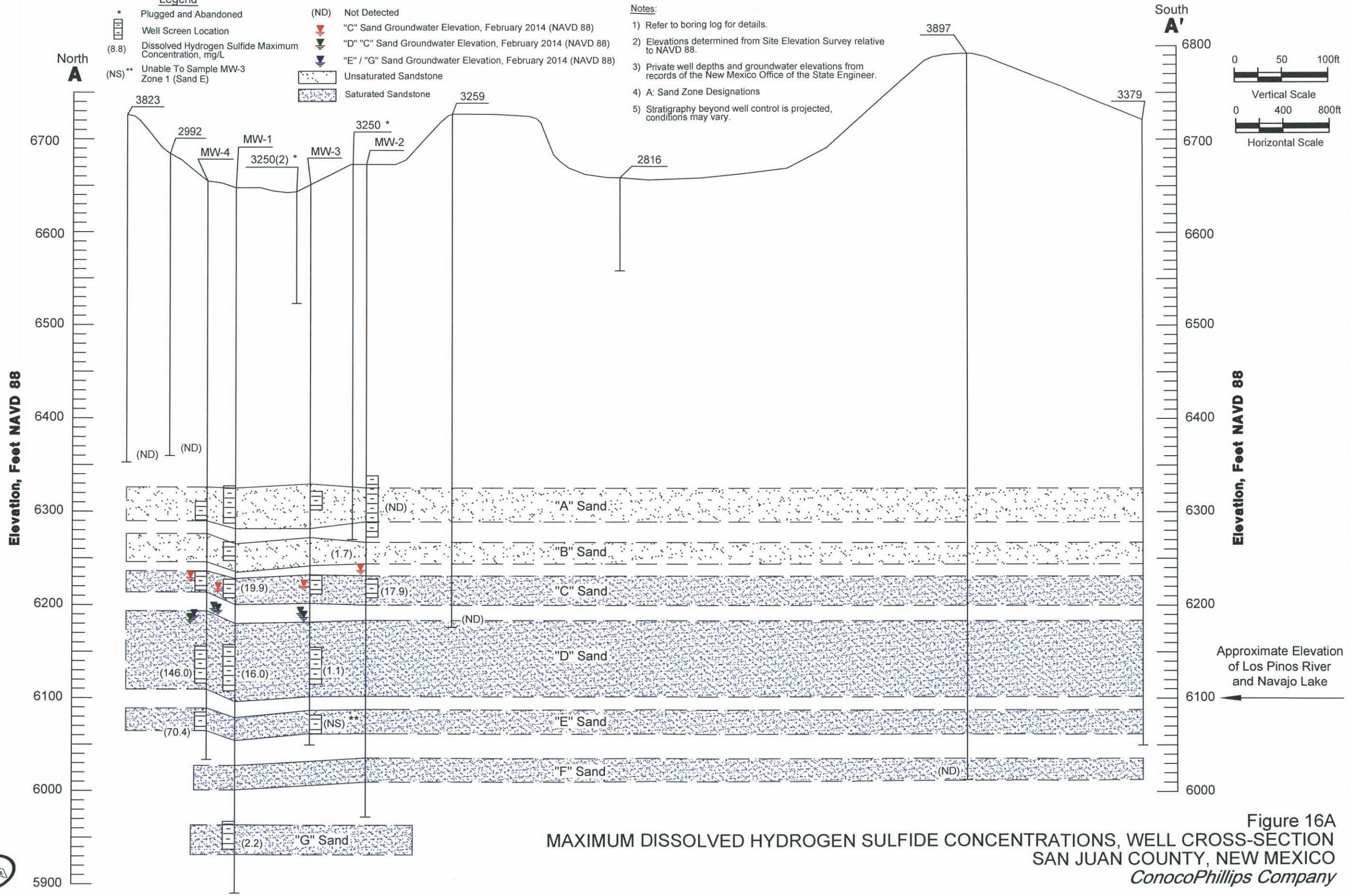


Figure 16A

MAXIMUM DISSOLVED HYDROGEN SULFIDE CONCENTRATIONS, WELL CROSS-SECTION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

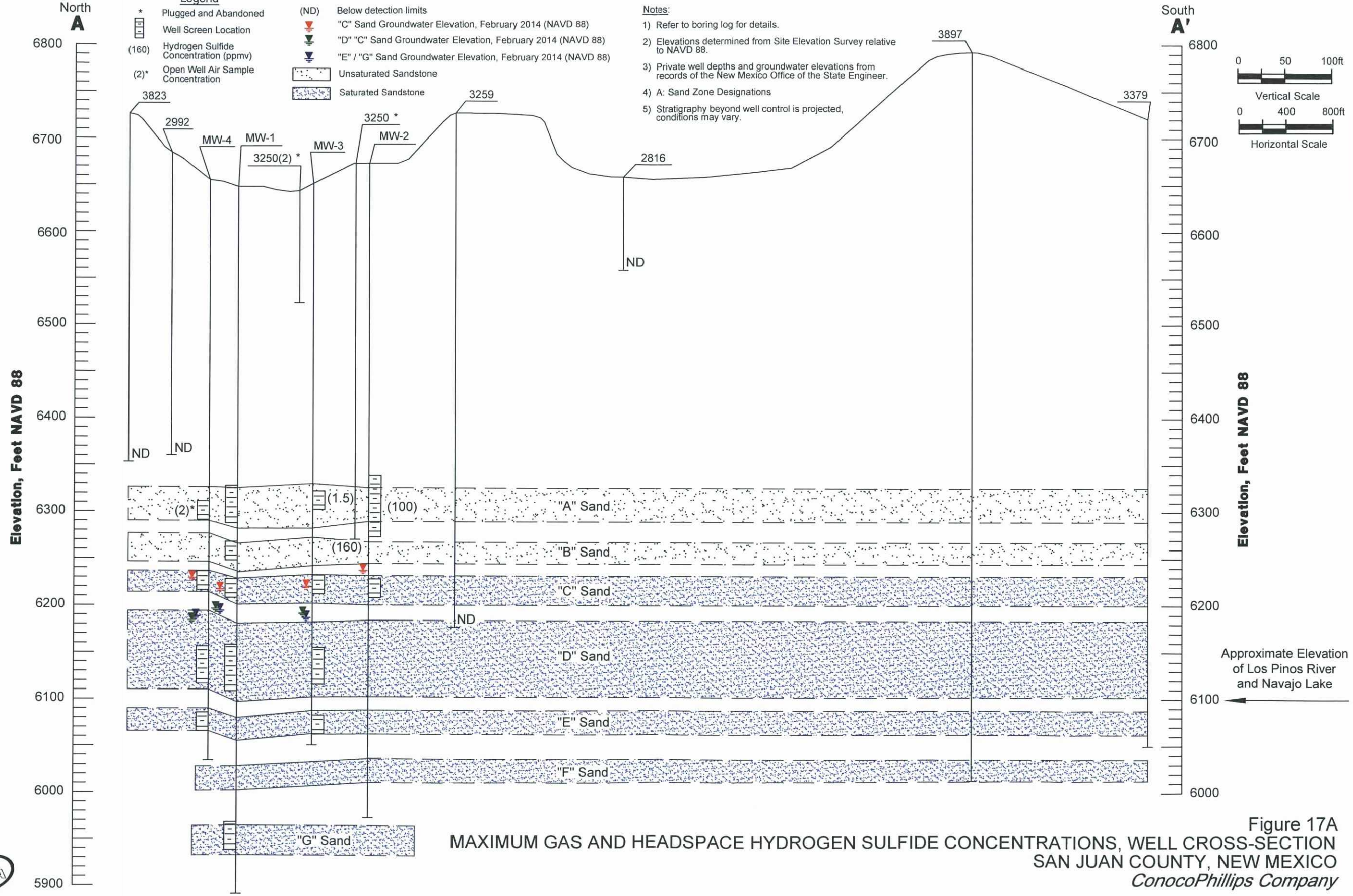
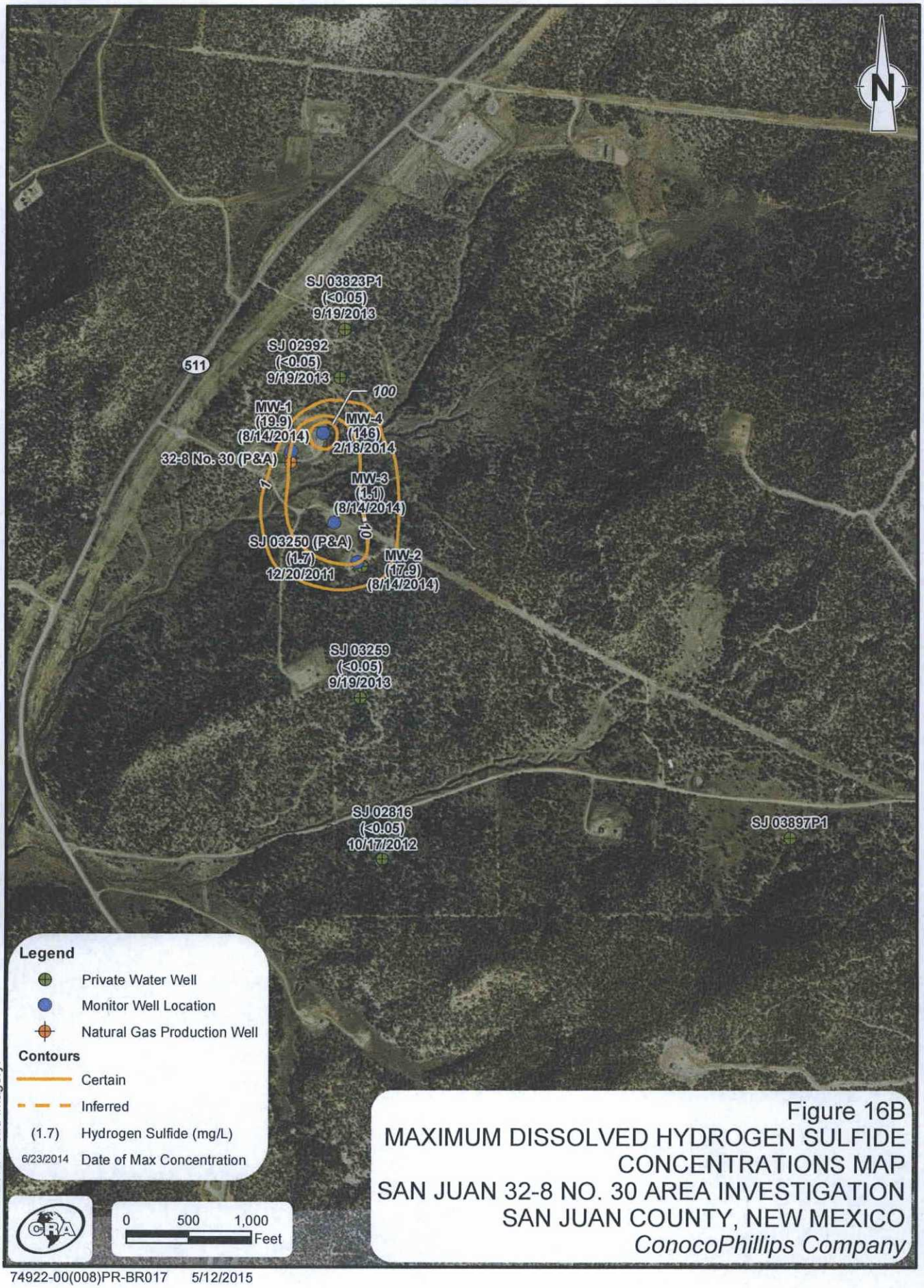


Figure 17A
MAXIMUM GAS AND HEADSPACE HYDROGEN SULFIDE CONCENTRATIONS, WELL CROSS-SECTION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074922-00(008)GN-BR021 MAR 31/2015



RE: 2010 ESRI World Imagery.

Figure 16B
MAXIMUM DISSOLVED HYDROGEN SULFIDE CONCENTRATIONS MAP
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-00(008)PR-BR017 5/12/2015

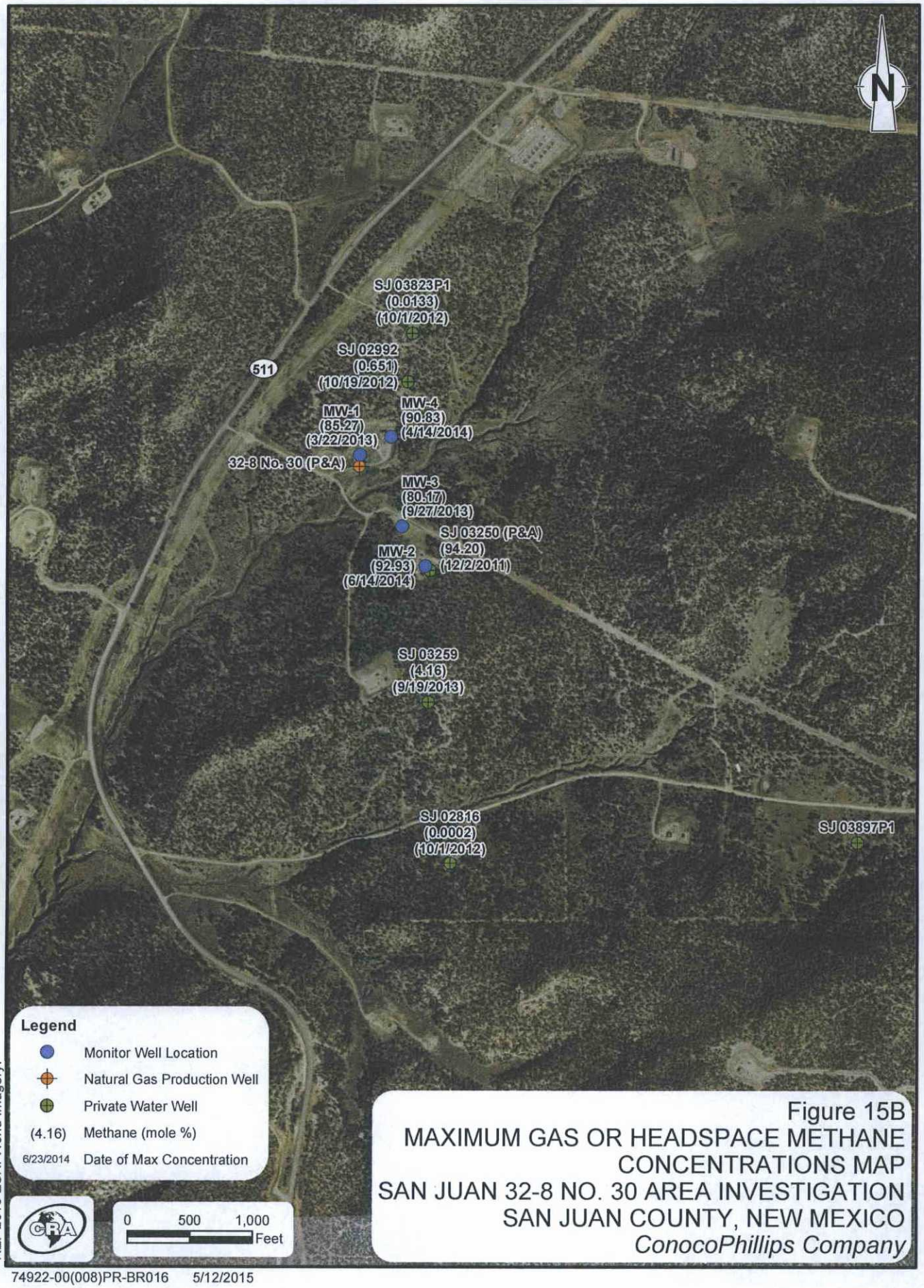
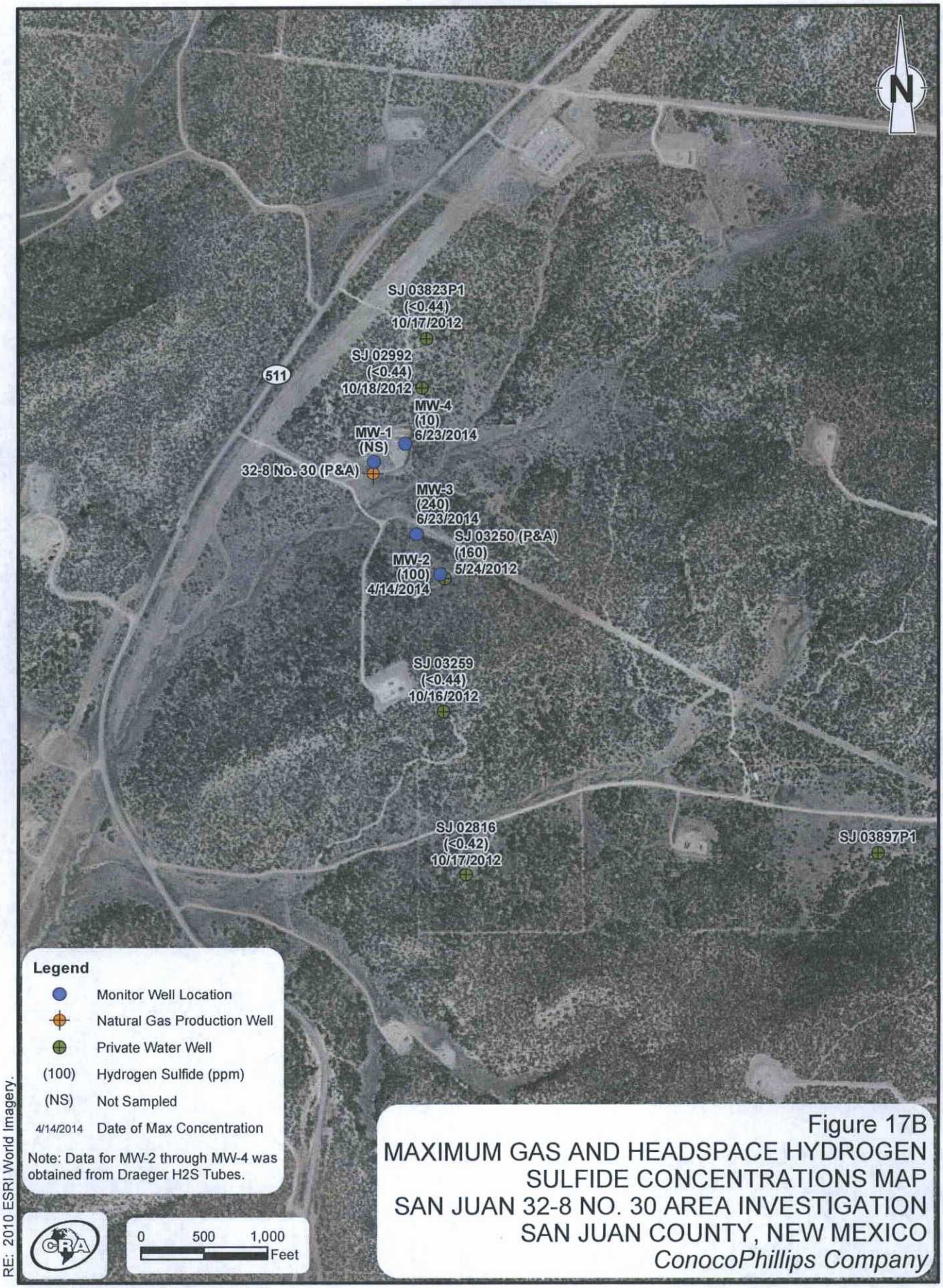


Figure 15B
MAXIMUM GAS OR HEADSPACE METHANE CONCENTRATIONS MAP
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

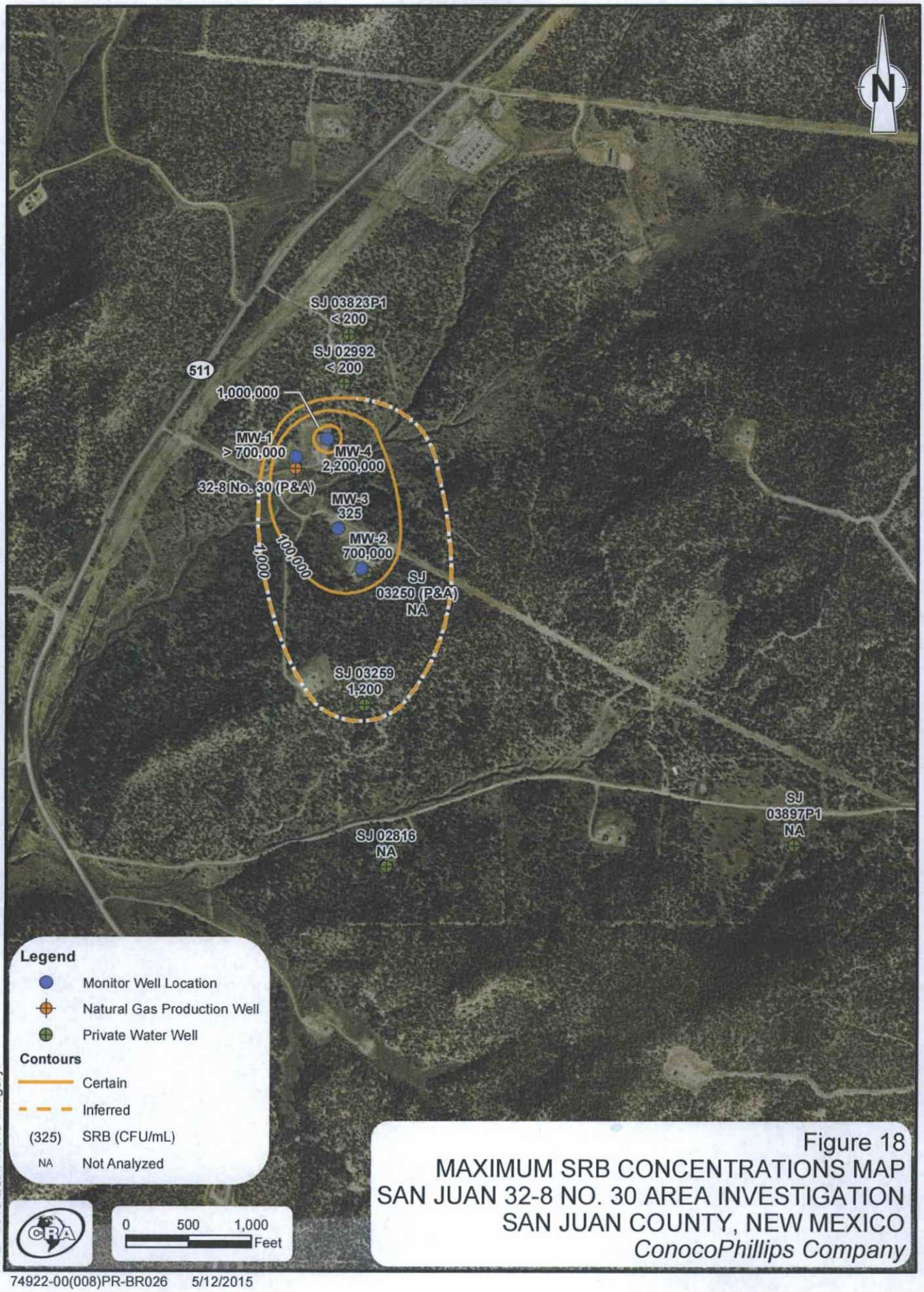
74922-00(008)PR-BR016 5/12/2015



RE: 2010 ESRI World Imagery.

Figure 17B
MAXIMUM GAS AND HEADSPACE HYDROGEN SULFIDE CONCENTRATIONS MAP
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-00(008)PR-BR018 3/31/2015



RE: 2010 ESRI World Imagery.

Figure 18
MAXIMUM SRB CONCENTRATIONS MAP
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-00(008)PR-BR026 5/12/2015

TABLE 1A

SURFACE WATER AND GROUNDWATER METHANE AND VOC ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30

Source ID	Source Type	Sample ID	Date	Methane (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)	Acetone (µg/L)	Benzene (µg/L)	Bromobenzene (µg/L)	Bromochloromethane (µg/L)	Bromodichloro methane (µg/L)	Bromoform (µg/L)	Bromomethane (Methyl bromide) (µg/L)
NMWQCC Groundwater Standards for Human Health or Domestic Water Supply				NE	NE	NE	NE	10	NE	NE	NE	NE	NE
SJ 02816	Water Well	DW-074922-120111-CM-46	12/01/2011	< 10.0	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-052212-CM-02816-2	05/22/2012	70.9	--	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-101712-CM-02816-3	10/17/2012	< 0.2*	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
SJ 03259	Water Well	DW-074922-120111-CM-29	12/01/2011	1,940	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-052212-CM03259-2	05/22/2012	3,160	--	< 0.53	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-101612-CM03259-3	10/16/2012	750*	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-091913-CM-3259	09/19/2013	960*	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
SJ 03250	Water Well	GW-074922-120211-CM-2566	12/20/2011	9,230	< 0.20	< 0.50	167	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-052212-CM-03250-2	05/22/2012	10,100	--	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03823P1	Water Well	DW-074922-120111-CM-D3	12/01/2011	< 10.0	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-052412-CM-03823P1-2	05/24/2012	148	--	< 0.59	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-101712-CM-03823P1-3	10/17/2012	2.7*	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-091913-CM-3823P1-COLD	09/19/2013	0.88*	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-091913-CM-3823P1-HOT	09/19/2013	2.0*	< 0.50	<0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
SJ 02992	Water Well	GW-074922-052412-CM-02992-1	05/24/2012	567	--	< 0.50	< 50.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		GW-074922-101712-CM-02992-2	10/19/2012	150*	< 0.50	< 0.50	< 10.0	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		GW-074922-091913-CM-2992	09/19/2013	200*	< 0.50	<0.50	12.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
SJ 03897P1	Water Well	GW-074922-052212-CM-03897P1-1	05/22/2012	327	--	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
		GW-074922-101612-CM-03897P1-2	10/16/2012	13*	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
SJ 32-8 No. 25	E&P Well	PW-074922-120211-CM-25	12/01/2011	3800	< 2.5	55.3	160	73	160	73	< 1.0	< 1.0	< 5.0
		PW-074922-052312-CM-25-2	05/23/2012	7,500	--	--	2,980	177	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 202	E&P Well	PW-074922-120211-CM-202	12/01/2011	4,870	0.03	9.6	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		PW-074922-052312-CM-202-2	05/23/2012	11,400	< 0.50	< 0.63	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0
SJ 32-8 No. 204	E&P Well	PW-074922-120211-CM-204A	12/01/2011	3,620	< 2.5	18.3	36.5	97.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
NAV	Surface Water	SW-074922-120211-CM-NAV	12/02/2011	< 10.0	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0

Notes:
[1] TPH GRO = total petroleum hydrocarbons gasoline range organics
[2] TPH DRO = total petroleum hydrocarbons diesel range organics
[3] ug/L = micrograms per liter (parts per billion)
[4] mg/L = milligrams per liter (parts per million)
[5] < 1.0 = Below laboratory detection limit
[6] -- Indicates not analyzed due to laboratory error
[7] * = data obtained from IsoBag
[8] A secondary table can be referenced to see other constituents detected in produced water samples only.
[9] NMWQCC = New Mexico Water Quality Control Commission
[10] Shaded values indicate an exceedance of the NMWQCC
[11] NE = Not established
[12] December 2011 water samples from Gas Wells were collected from produced water tanks and may not accurately represent produced water concentrations due to volatilization.
[13] GW and DW indicate private water well samples
[14] PW indicates gas well samples
[15] SW indicates surface water samples

SURFACE WATER AND GROUNDWATER METHANE AND VOC ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30

Source ID	Source Type	Sample ID	Date	2-Butanone (µg/L)	N-Butylbenzene (µg/L)	sec-Butylbenzene (2-Phenylbutane) (ug/L)	tert-Butylbenzene (µg/L)	Carbon disulfide (µg/L)	Carbon tetrachloride (µg/L)	Chlorobenzene (µg/L)	Chloroethane (µg/L)	Chloroform (µg/L)	Methyl chloride (Chloromethane) (µg/L)
NMWQCC Groundwater Standards for Human Health or Domestic Water Supply				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
SJ 02816	Water Well	DW-074922-120111-CM-46	12/01/2011	< 10.0	< 1.0	< 1.0	< 1.0	0.72	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM-02816-2	05/22/2012	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101712-CM-02816-3	10/17/2012	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03259	Water Well	DW-074922-120111-CM-29	12/01/2011	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	3.1	< 1.0
		GW-074922-052212-CM03259-2	05/22/2012	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	4.0	< 1.0
		GW-074922-101612-CM03259-3	10/16/2012	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	2.6	< 1.0
		GW-074922-091913-CM-3259	09/19/2013	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	2.3	< 1.0
SJ 03250	Water Well	GW-074922-120211-CM-2566	12/20/2011	363	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM-03250-2	05/22/2012	26.9	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03823P1	Water Well	DW-074922-120111-CM-D3	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052412-CM-03823P1-2	05/24/2012	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101712-CM-03823P1-3	10/17/2012	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3823P1-COLD	09/19/2013	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3823P1-HOT	09/19/2013	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 02992	Water Well	GW-074922-052412-CM-02992-1	05/24/2012	< 50.0	< 5.0	< 5.0	< 5.0	< 25.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		GW-074922-101712-CM-02992-2	10/19/2012	< 50.0	< 5.0	< 5.0	< 5.0	< 25.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		GW-074922-091913-CM-2992	09/19/2013	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03897P1	Water Well	GW-074922-052212-CM-03897P1-1	05/22/2012	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101612-CM-03897P1-2	10/16/2012	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 25	E&P Well	PW-074922-120211-CM-25	12/01/2011	18	1.7	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		PW-074922-052312-CM-25-2	05/23/2012	37.8	1.1	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 202	E&P Well	PW-074922-120211-CM-202	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		PW-074922-052312-CM-202-2	05/23/2012	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 204	E&P Well	PW-074922-120211-CM-204A	12/01/2011	< 1.0	1.2	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
NAV	Surface Water	SW-074922-120211-CM-NAV	12/02/2011	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Notes:
[1] TPH GRO = total petroleum hydrocarbons gasoline range organics
[2] TPH DRO = total petroleum hydrocarbons diesel range organics
[3] ug/L = micrograms per liter (parts per billion)
[4] mg/L = milligrams per liter (parts per million)
[5] < 1.0 = Below laboratory detection limit
[6] -- Indicates not analyzed due to laboratory error
[7] * = data obtained from IsoBag
[8] A secondary table can be referenced to see other constituents detected in produced water samples only.
[9] NMWQCC = New Mexico Water Quality Control Commission
[10] Shaded values indicate an exceedance of the NMWQCC
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[12] December 2011 water samples from Gas Wells were collected from produced water tanks and may not accuratel represent produced water concentrations due to volatilization.
[13] GW and DW indicate private water well samples
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[15] SW indicates surface water samples

TABLE 1A

SURFACE WATER AND GROUNDWATER METHANE AND VOC ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30

Source ID	Source Type	Sample ID	Date	2-Chlorotoluene (µg/L)	4-Chlorotoluene (µg/L)	1,2-Dibromo-3-chloropropane (DBCP) (µg/L)	Dibromochloromethane (µg/L)	1,2-Dibromoethane (Ethylene dibromide) (µg/L)	Dibromomethane (µg/L)	1,2-Dichlorobenzene (µg/L)	1,3-Dichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	Dichlorodifluoromethane (CFC-12) (µg/L)	1,1-Dichloroethane (µg/L)
NMWQCC Groundwater Standards for Human Health or Domestic Water Supply				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
SJ 02816	Water Well	DW-074922-120111-CM-46	12/01/2011	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM-02816-2	05/22/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101712-CM-02816-3	10/17/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03259	Water Well	DW-074922-120111-CM-29	12/01/2011	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM03259-2	05/22/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101612-CM03259-3	10/16/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3259	09/19/2013	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03250	Water Well	GW-074922-120211-CM-2566	12/20/2011	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM-03250-2	05/22/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03823P1	Water Well	DW-074922-120111-CM-D3	12/01/2011	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052412-CM-03823P1-2	05/24/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101712-CM-03823P1-3	10/17/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3823P1-COLD	09/19/2013	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3823P1-HOT	09/19/2013	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 02992	Water Well	GW-074922-052412-CM-02992-1	05/24/2012	< 5.0	< 5.0	< 12.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		GW-074922-101712-CM-02992-2	10/19/2012	< 5.0	< 5.0	< 12.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		GW-074922-091913-CM-2992	09/19/2013	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03897P1	Water Well	GW-074922-052212-CM-03897P1-1	05/22/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101612-CM-03897P1-2	10/16/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 25	E&P Well	PW-074922-120211-CM-25	12/01/2011	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		PW-074922-052312-CM-25-2	05/23/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 202	E&P Well	PW-074922-120211-CM-202	12/01/2011	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		PW-074922-052312-CM-202-2	05/23/2012	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 204	E&P Well	PW-074922-120211-CM-204A	12/01/2011	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
NAV	Surface Water	SW-074922-120211-CM-NAV	12/02/2011	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Notes:
[1] TPH GRO = total petroleum hydrocarbons gasoline range organics
[2] TPH DRO = total petroleum hydrocarbons diesel range organics
[3] ug/L = micrograms per liter (parts per billion)
[4] mg/L = milligrams per liter (parts per million)
[5] < 1.0 = Below laboratory detection limit
[6] -- Indicates not analyzed due to laboratory error
[7] * = data obtained from IsoBag
[8] A secondary table can be referenced to see other constituents detected in produced water samples only.
[9] NMWQCC = New Mexico Water Quality Control Commission
[10] Shaded values indicate an exceedance of the NMWQCC
[11] NE = Not established
[12] December 2011 water samples from Gas Wells were collected from produced water tanks and may not accuratel represent produced water concentrations due to volatilization.
[13] GW and DW indicate private water well samples
[14] PW indicates gas well samples
[15] SW indicates surface water samples

SURFACE WATER AND GROUNDWATER METHANE AND VOC ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30

Source ID	Source Type	Sample ID	Date	1,2-Dichloroethane (µg/L)	1,2-Dichloroethene (total) (µg/L)	1,1-Dichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)	trans-1,2-Dichloro ethene (µg/L)	1,2-Dichloropropane (µg/L)	1,3-Dichloropropane (µg/L)	2,2-Dichloropropane (µg/L)	1,1-Dichloropropene (µg/L)	cis-1,3-Dichloropropene (µg/L)	trans-1,3-Dichloropropene (µg/L)
NMWQCC Groundwater Standards for Human Health or Domestic Water Supply				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
SJ 02816	Water Well	DW-074922-120111-CM-46	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM-02816-2	05/22/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101712-CM-02816-3	10/17/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03259	Water Well	DW-074922-120111-CM-29	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM03259-2	05/22/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101612-CM03259-3	10/16/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3259	09/19/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03250	Water Well	GW-074922-120211-CM-2566	12/20/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM-03250-2	05/22/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03823P1	Water Well	DW-074922-120111-CM-D3	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052412-CM-03823P1-2	05/24/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101712-CM-03823P1-3	10/17/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3823P1-COLD	09/19/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3823P1-HOT	09/19/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 02992	Water Well	GW-074922-052412-CM-02992-1	05/24/2012	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		GW-074922-101712-CM-02992-2	10/19/2012	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		GW-074922-091913-CM-2992	09/19/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03897P1	Water Well	GW-074922-052212-CM-03897P1-1	05/22/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101612-CM-03897P1-2	10/16/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 25	E&P Well	PW-074922-120211-CM-25	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		PW-074922-052312-CM-25-2	05/23/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 202	E&P Well	PW-074922-120211-CM-202	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		PW-074922-052312-CM-202-2	05/23/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 204	E&P Well	PW-074922-120211-CM-204A	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
NAV	Surface Water	SW-074922-120211-CM-NAV	12/02/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Notes:
[1] TPH GRO = total petroleum hydrocarbons gasoline range organics
[2] TPH DRO = total petroleum hydrocarbons diesel range organics
[3] ug/L = micrograms per liter (parts per billion)
[4] mg/L = milligrams per liter (parts per million)
[5] < 1.0 = Below laboratory detection limit
[6] -- Indicates not analyzed due to laboratory error
[7] * = data obtained from IsoBag
[8] A secondary table can be referenced to see other constituents detected in produced water samples only.
[9] NMWQCC = New Mexico Water Quality Control Commission
[10] Shaded values indicate an exceedance of the NMWQCC
[11] NE = Not established
[12] December 2011 water samples from Gas Wells were collected from produced water tanks and may not accuratel represent produced water concentrations due to volatilization.
[13] GW and DW indicate private water well samples
[14] PW indicates gas well samples
[15] SW indicates surface water samples

TABLE 1A

SURFACE WATER AND GROUNDWATER METHANE AND VOC ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30

Source ID	Source Type	Sample ID	Date	Ethylbenzene (µg/L)	Hexachloro-1,3-butadiene (ug/L)	2-Hexanone (µg/L)	Isopropyl benzene (µg/L)	p-Isopropyl toluene (Cymene) (µg/L)	Methylene Chloride (µg/L)	4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK) (µg/L)	Methyl tert butyl ether (MTBE) (µg/L)	Naphthalene (µg/L)	N-Propylbenzene (µg/L)	Styrene (µg/L)
NMWQCC Groundwater Standards for Human Health or Domestic Water Supply				750	NE	NE	NE	NE	100	NE	NE	NE	NE	NE
SJ 02816	Water Well	DW-074922-120111-CM-46	12/01/2011	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-052212-CM-02816-2	05/22/2012	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-101712-CM-02816-3	10/17/2012	< 1.0	1.5	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
SJ 03259	Water Well	DW-074922-120111-CM-29	12/01/2011	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-052212-CM03259-2	05/22/2012	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-101612-CM03259-3	10/16/2012	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-091913-CM-3259	09/19/2013	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
SJ 03250	Water Well	GW-074922-120211-CM-2566	12/20/2011	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-052212-CM-03250-2	05/22/2012	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
SJ 03823P1	Water Well	DW-074922-120111-CM-D3	12/01/2011	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-052412-CM-03823P1-2	05/24/2012	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-101712-CM-03823P1-3	10/17/2012	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-091913-CM-3823P1-COLD	09/19/2013	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-091913-CM-3823P1-HOT	09/19/2013	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
SJ 02992	Water Well	GW-074922-052412-CM-02992-1	05/24/2012	< 5.0	< 5.0	< 50.0	< 5.0	< 5.0	< 5.0	< 50.0	< 5.0	< 50.0	< 5.0	< 5.0
		GW-074922-101712-CM-02992-2	10/19/2012	< 5.0	< 5.0	< 50.0	< 5.0	< 5.0	6.6	< 50.0	< 5.0	< 50.0	< 5.0	< 5.0
		GW-074922-091913-CM-2992	09/19/2013	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
SJ 03897P1	Water Well	GW-074922-052212-CM-03897P1-1	05/22/2012	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		GW-074922-101612-CM-03897P1-2	10/16/2012	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
SJ 32-8 No. 25	E&P Well	PW-074922-120211-CM-25	12/01/2011	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	2.0	< 1.0
		PW-074922-052312-CM-25-2	05/23/2012	5.4	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
SJ 32-8 No. 202	E&P Well	PW-074922-120211-CM-202	12/01/2011	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
		PW-074922-052312-CM-202-2	05/23/2012	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0
SJ 32-8 No. 204	E&P Well	PW-074922-120211-CM-204A	12/01/2011	12.1	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	13.4	1.0	< 1.0
NAV	Surface Water	SW-074922-120211-CM-NAV	12/02/2011	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0

Notes:
[1] TPH GRO = total petroleum hydrocarbons gasoline range organics
[2] TPH DRO = total petroleum hydrocarbons diesel range organics
[3] ug/L = micrograms per liter (parts per billion)
[4] mg/L = milligrams per liter (parts per million)
[5] < 1.0 = Below laboratory detection limit
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[7] * = data obtained from IsoBag
[8] A secondary table can be referenced to see other constituents detected in produced water samples only.
[9] NMWQCC = New Mexico Water Quality Control Commission
[10] Shaded values indicate an exceedance of the NMWQCC
[11] NE = Not established
[12] December 2011 water samples from Gas Wells were collected from produced water tanks and may not accuratel represent produced water concentrations due to volatilization.
[13] GW and DW indicate private water well samples
[14] PW indicates gas well samples
[15] SW indicates surface water samples

TABLE 1A

SURFACE WATER AND GROUNDWATER METHANE AND VOC ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30

Source ID	Source Type	Sample ID	Date	1,1,1,2-Tetrachloroethane (µg/L)	1,1,2,2-Tetrachloroethane (µg/L)	Tetrachloroethene (µg/L)	Toluene (µg/L)	1,2,3-Trichlorobenzene (µg/L)	1,2,4-Trichlorobenzene (µg/L)	1,1,1-Trichloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	Trichloroethene (µg/L)	Trichlorofluoromethane (CFC-11) (µg/L)
NMWQCC Groundwater Standards for Human Health or Domestic Water Supply				NE	NE	NE	750	NE	NE	NE	NE	NE	NE
SJ 02816	Water Well	DW-074922-120111-CM-46	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM-02816-2	05/22/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101712-CM-02816-3	10/17/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03259	Water Well	DW-074922-120111-CM-29	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM03259-2	05/22/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101612-CM03259-3	10/16/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3259	09/19/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03250	Water Well	GW-074922-120211-CM-2566	12/20/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052212-CM-03250-2	05/22/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03823P1	Water Well	DW-074922-120111-CM-D3	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-052412-CM-03823P1-2	05/24/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101712-CM-03823P1-3	10/17/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3823P1-COLD	09/19/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-091913-CM-3823P1-HOT	09/19/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 02992	Water Well	GW-074922-052412-CM-02992-1	05/24/2012	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		GW-074922-101712-CM-02992-2	10/19/2012	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
		GW-074922-091913-CM-2992	09/19/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 03897P1	Water Well	GW-074922-052212-CM-03897P1-1	05/22/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		GW-074922-101612-CM-03897P1-2	10/16/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 25	E&P Well	PW-074922-120211-CM-25	12/01/2011	< 1.0	< 1.0	< 1.0	40.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		PW-074922-052312-CM-25-2	05/23/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 202	E&P Well	PW-074922-120211-CM-202	12/01/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
		PW-074922-052312-CM-202-2	05/23/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SJ 32-8 No. 204	E&P Well	PW-074922-120211-CM-204A	12/01/2011	< 1.0	< 1.0	< 1.0	184	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
NAV	Surface Water	SW-074922-120211-CM-NAV	12/02/2011	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Notes:
[1] TPH GRO = total petroleum hydrocarbons gasoline range organics
[2] TPH DRO = total petroleum hydrocarbons diesel range organics
[3] ug/L = micrograms per liter (parts per billion)
[4] mg/L = milligrams per liter (parts per million)
[5] < 1.0 = Below laboratory detection limit
[6] -- Indicates not analyzed due to laboratory error
[7] * = data obtained from IsoBag
[8] A secondary table can be referenced to see other constituents detected in produced water samples only.
[9] NMWQCC = New Mexico Water Quality Control Commission
[10] Shaded values indicate an exceedance of the NMWQCC
[11] NE = Not established
[12] December 2011 water samples from Gas Wells were collected from produced water tanks and may not accuratel represent produced water concentrations due to volatilization.
[13] GW and DW indicate private water well samples
[14] PW indicates gas well samples
[15] SW indicates surface water samples

TABLE 1A

SURFACE WATER AND GROUNDWATER METHANE AND VOC ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30

Source ID	*Source Type*	*Sample ID*	*Date*	*1,2,3-Trichloro propane (µg/L)*	*1,2,3-Trichlorobenzene (µg/L)*	*1,2,4-Trichlorobenzene (µg/L)*	*1,3,5-Trimethylbenzene (µg/L)*	*Vinyl chloride (µg/L)*	*Xylenes (µg/L)*
NMWQCC Groundwater Standards for Human Health or Domestic Water Supply				NE	NE	NE	NE	NE	620
SJ 02816	Water Well	DW-074922-120111-CM-46	12/01/2011	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-052212-CM-02816-2	05/22/2012	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-101712-CM-02816-3	10/17/2012	< 2.5	4.2	2.3	< 1.0	< 1.0	< 3.0
SJ 03259	Water Well	DW-074922-120111-CM-29	12/01/2011	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-052212-CM03259-2	05/22/2012	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-101612-CM03259-3	10/16/2012	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-091913-CM-3259	09/19/2013	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
SJ 03250	Water Well	GW-074922-120211-CM-2566	12/20/2011	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-052212-CM-03250-2	05/22/2012	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
SJ 03823P1	Water Well	DW-074922-120111-CM-D3	12/01/2011	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-052412-CM-03823P1-2	05/24/2012	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-101712-CM-03823P1-3	10/17/2012	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-091913-CM-3823P1-COLD	09/19/2013	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-091913-CM-3823P1-HOT	09/19/2013	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
SJ 02992	Water Well	GW-074922-052412-CM-02992-1	05/24/2012	< 12.5	< 5.0	< 5.0	< 5.0	< 5.0	< 15.0
		GW-074922-101712-CM-02992-2	10/19/2012	< 12.5	< 5.0	< 5.0	< 5.0	< 5.0	< 15.0
		GW-074922-091913-CM-2992	09/19/2013	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
SJ 03897P1	Water Well	GW-074922-052212-CM-03897P1-1	05/22/2012	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		GW-074922-101612-CM-03897P1-2	10/16/2012	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
SJ 32-8 No. 25	E&P Well	PW-074922-120211-CM-25	12/01/2011	< 2.5	< 1.0	< 1.0	6.4	< 1.0	20.3
		PW-074922-052312-CM-25-2	05/23/2012	< 2.5	< 1.0	11.2	13.7	< 1.0	76.9
SJ 32-8 No. 202	E&P Well	PW-074922-120211-CM-202	12/01/2011	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
		PW-074922-052312-CM-202-2	05/23/2012	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0
SJ 32-8 No. 204	E&P Well	PW-074922-120211-CM-204A	12/01/2011	< 2.5	< 1.0	< 1.0	7.0	< 1.0	113
NAV	Surface Water	SW-074922-120211-CM-NAV	12/02/2011	< 2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0

Notes:
[1] TPH GRO = total petroleum hydrocarbons gasoline range organics
[2] TPH DRO = total petroleum hydrocarbons diesel range organics
[3] ug/L = micrograms per liter (parts per billion)
[4] mg/L = milligrams per liter (parts per million)
[5] < 1.0 = Below laboratory detection limit
[6] -- Indicates not analyzed due to laboratory error
[7] * = data obtained from IsoBag
[8] A secondary table can be referenced to see other constituents detected in produced water samples only.
[9] NMWQCC = New Mexico Water Quality Control Commission
[10] Shaded values indicate an exceedance of the NMWQCC
[11] NE = Not established
[12] December 2011 water samples from Gas Wells were collected from produced water tanks and may not accuratel represent produced water concentrations due to volatilization.
[13] GW and DW indicate private water well samples
[14] PW indicates gas well samples
[15] SW indicates surface water samples

TABLE 1B

SURFACE WATER AND GROUNDWATER GEOCHEMICAL ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Well ID	*Source Type*	*Sample ID*	*Date*	*Dissolved Boron (mg/L)*	*Dissolved Calcium (mg/L)*	*Dissolved Magnesium (mg/L)*	*Dissolved Potassium (mg/L)*	*Dissolved Sodium (mg/L)*	*Alkalinity (mg/L)*	*Total Dissolved Solids (mg/L)*	*Total Sulfide (mg/L)*	*Bromide (mg/L)*	*Chloride (mg/L)*	*Sulfate (mg/L)*
NMWQCC Groundwater Standards for Human Health or Domestic Water Supply				0.750	NE	NE	NE	NE	NE	1,000	NE	NE	250	600
SJ 02816	Water Well	DW-074922-120111-CM-46	12/01/2011	0.255	297	9.41	4.29	1,110	126	3,930	< 0.05	2.6	4.8	3,310
		GW-074922-052212-CM-02816-2	05/22/2012	0.242	272	9.33	4.38	1,160	118	4,640	< 0.05	< 1.0	4.5	3,400
		GW-074922-101712-CM-02816-3	10/17/2012	0.237	277	8.60	7.10	191	114	1,150	< 0.05	1.5	4.8	4,110
SJ 03259	Water Well	DW-074922-120111-CM-29	12/01/2011	0.164	414	9.59	5.34	684	184	2,620	< 0.05	< 1.0	5.6	2,240
		GW-074922-052212-CM03259-2	05/22/2012	0.152	396	9.78	5.18	688	180	3,710	< 0.05	< 1.0	5.6	2,610
		GW-074922-101612-CM03259-3	10/16/2012	0.152	383	9.83	4.71	669	170	3,700	< 0.05	< 1.0	5.6	2,660
		GW-074922-091913-CM-3259	09/19/2013	0.169	440	9.57	5.28	787	172	4,300	< 0.05	< 1.0	5.8	960*
SJ 03250	Water Well	GW-074922-120211-CM-2566	12/20/2011	0.127	218	11.20	2.91	303	234	1,810	1.7	< 1.0	8.3	1,170
		GW-074922-052212-CM-03250-2	05/22/2012	0.119	193	11.30	2.89	306	222	1,760	< 0.05	< 1.0	8.1	1,080
SJ 03823P1	Water Well	DW-074922-120111-CM-D3	12/01/2011	< 0.100	10.6	3.16	1.65	169	242	800	< 0.05	< 1.0	5.6	396
		GW-074922-052412-CM-03823P1-2	05/24/2012	< 0.100	94.6	2.99	1.66	167	236	796	< 0.05	< 1.0	5.9	403
		GW-074922-101712-CM-03823P1-3	10/17/2012	< 0.100	110	3.07	2.08	168	225	660	< 0.05	< 1.0	5.6	435
		GW-074922-091913-CM-3823P1-COLD	09/19/2013	< 0.100	108	2.94	1.54	181	224	857	< 0.05	< 1.0	5.7	474
		GW-074922-091913-CM-3823P1-HOT	09/19/2013	< 0.100	103	2.82	1.54	178	210	843	< 0.05	< 1.0	5.7	394
SJ 02992	Water Well	GW-074922-052412-CM-02992-1	05/24/2012	< 0.100	221	10.70	2.36	180	254	1,420	< 0.05	< 1.0	7.4	832
		GW-074922-101712-CM-02992-2	10/19/2012	< 0.100	237	10.30	2.84	176	227	1,450	< 0.05	< 1.0	7.3	771
		GW-074922-091913-CM-2992	09/19/2013	< 0.100	246	10.70	2.34	189	228	1,440	< 0.05	< 1.0	7.7	771
SJ 03897P1	Water Well	GW-074922-052212-CM-03897P1-1	05/22/2012	0.365	361	11.60	6.09	2,160	82	7,800	< 0.05	< 1.0	317	5,210
		GW-074922-101612-CM-03897P1-2	10/16/2012	0.331	379	12.30	4.56	1,750	73.5	7,860	< 0.05	2.4	319	5,290
SJ 32-8 No. 25	E&P Well	PW-074922-120211-CM-25	12/01/2011	1.56	13.70	6.46	22.10	2,360	3,680	7,150	< 0.05	16.5	1700	2.3
		PW-074922-052312-CM-25-2	05/23/2012	0.484	11.60	1.78	4.85	240	300	1,290	0.093	2.3	168	10.1
SJ 32-8 No. 202	E&P Well	PW-074922-120211-CM-202	12/01/2011	1.8	12.00	10.80	13.00	2,940	5,400	8,160	< 0.05	12.3	1530	< 1.0
		PW-074922-052312-CM-202-2	05/23/2012	1.65	10.70	9.62	13.30	3,130	5,100	6,660	< 0.05	16	< 1.0	< 1.0
SJ 32-8 No. 204	E&P Well	PW-074922-120211-CM-204A	12/01/2011	2.04	13.50	13.40	41.20	3,030	4,560	8,730	< 0.05	10.6	2130	< 1.0
NAV	Surface Water	SW-074922-120211-CM-NAV	12/02/2011	< 100	24.90	4.67	1.95	11.90	78	177	< 0.05	< 1.0	2.7	33.7

Notes:
[1] TPH GRO = total petroleum hydrocarbons gasoline range organics
[2] TPH DRO = total petroleum hydrocarbons diesel range organics
[3] ug/L = micrograms per liter (parts per billion)
[4] mg/L = milligrams per liter (parts per million)
[5] < 1.0 = Below laboratory detection limit
[6] * = data obtained from IsoBag
[7] A secondary table can be referenced to see other constituents detected in produced water samples only.
[8] NMWQCC = New Mexico Water Quality Control Commission
[9] Shaded values indicate an exceedance of the NMWQCC
[10] NE = Not established
[11] December 2011 water samples from Gas Wells were collected from produced water tanks and may not accurately represent produced water concentrations due to volatilization.
[12] GW and DW indicate private water well samples
[13] PW indicates gas well samples

TABLE 2

SURFACE WATER AND GROUNDWATER ISOTOPIC ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Well ID	*Source Type*	*Sample ID*	*Date*	*δD ‰ Relative to VSMOW*	*$\delta^{18}O$ ‰ Relative to VSMOW*
SJ 02816	Water Well	DW-074922-120111-CM-46	12/01/2011	-123.1	-15.93
		GW-074922-052212-CM-02816-2	05/22/2012	-120.6	-15.67
		GW-074922-101712-CM-02816-3	10/17/2012	-121.7	-15.96
SJ 03259	Water Well	DW-074922-120111-CM-29	12/01/2011	-114.2	-14.84
		GW-074922-052212-CM-03259-2	05/22/2012	-112.9	-14.77
		GW-074922-101612-CM-03259-3	10/16/2012	-111.8	-14.86
		GW-074922-091913-CM-3259	09/19/2013	-114.1	-14.77
SJ 03250	Water Well	GW-074922-120211-CM-2566	12/20/2011	-103.8	-13.70
		GW-074922-052212-CM-03250-2	05/22/2012	-104.9	-13.74
		GW-074922-052212-CM-DUP	05/22/2012	-104.4	-13.73
SJ 03250[1]	Water Well	Dry Well			
SJ 03823P1	Water Well	DW-074922-120111-CM-D3	12/01/2011	-114.6	-14.75
		GW-074922-052412-CM-03823P1-2	05/24/2012	-111.8	-14.65
		GW-074922-101712-CM-03823P1-3	10/17/2012	-113.3	-14.96
		GW-074922-091913-CM-3823P1-COLD	09/19/2013	-111.9	-14.83
		GW-074922-091913-CM-3823P1-HOT	09/19/2013	-113.3	-14.91
SJ 02992	Water Well	GW-074922-052412-CM-02992-1	05/24/2012	-102.9	-13.49
		GW-074922-101912-CM-02992-2	10/19/2012	-102.8	-13.61
		GW-074922-091913-CM-2992	09/19/2013	-104.7	-13.85
SJ 03897P1	Water Well	GW-074922-052212-CM-03897P1-1	05/22/2012	-109.5	-14.20
		GW-074922-101612-CM-03897P1-2	10/16/2012	-110.2	-14.30
SJ 32-8 No. 25	E&P Well	PW-074922-052312-CM-25	05/23/2012	-65.5	-4.40
SJ 32-8 No. 202	E&P Well	PW-074922-052312-CM-202	05/23/2012	-38.6	-6.03
NAV	Surface Water	SW-074922-120211-CM-NAV	12/02/2011	-94.1	-12.13

Notes:
[1] Data obtained from Isobag
[2] GW and DW indicate private water well samples
[3] PW indicates gas well samples
[4] SW indicates surface water samples

TABLE 3

GAS SAMPLE VOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - OCTOBER 2012
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
Results in ug/m3

Well ID	SJ 02816		SJ 03259			SJ 03250		SJ 03250(2)
Source Type	Water Well		Water Well			Water Well		Water Well
Sample ID	A-074922-052212-CM-02816-2	A-074922-101712-CM-02816-3	A-074922-120211-CM-29	A-074922-052212-CM03259-2	A-074922-101612-CM03259-3	A-074922-120211-CM-2566	A-074922-052412-CM-03250-2	A-074922-052412-CM-03250(2)-1
Date	05/22/2012	10/17/2012	12/01/2011	05/22/2012	10/16/2012	12/02/2011	05/24/2012	05/24/2012
Constituents								
Acetone	77.6	54.8	< 77.2	61.4	< 35.3	< 281	< 6,500	25.6
Benzene	< 3.4	< 1.1	< 52.3	4.3	< 23.9	< 190	< 8,710	74.4
Benzyl chloride	< 5.5	< 3.6	< 169	< 5.5	< 77.3	< 615	--	--
Bromodichloromethane	< 7.2	< 4.6	< 225	< 7.2	< 100	< 820	< 18,300	< 6.8
Bromoform	< 11.0	< 7.1	< 338	<11.0	< 155	< 1,230	< 28,000	< 11
Bromomethane	< 4.1	< 2.7	< 127	< 4.1	< 58.1	< 463	< 11,000	6.3
1,3 - Butadiene	<2.4	< 1.5	< 72.4	<2.2	< 33.1	< 264	< 6,000	< 2.2
2-Butanone	87.3	70.2	1,780	1,470	807	336 J	< 8,100	18.9
Carbon disulfide	< 3.3	< 2.1	< 101	11.2	< 46.4	< 369	< 8,500	7.28
Carbon tetrachloride	< 6.7	< 2.2	< 103	< 6.7	< 47.1	< 375	< 17,000	7.7
Chlorobenzene	< 4.9	< 3.2	< 151	<4.7	< 69.2	< 550	< 13,000	< 4.8
Chloroethane	< 2.8	< 1.8	< 86.8	4.1	< 39.7	< 316	< 7,200	< 2.7
Chloroform	9.9	< 3.4	3,710	3,080	1,600	< 580	< 13,000	18.9
Chloromethane	< 2.2	< 1.4	< 67.5	6.0	< 30.9	< 246	< 5,600	< 2.1
Cyclohexane	187	< 2.4	< 109	4.5	< 51.5	25,900	7,170 J	51.4
Dibromochloromethane	< 9.1	< 5.9	< 273	< 9.1	< 127	< 996	< 23,000	< 8.7
1,2 - Dibromoethane (EDB)	< 8.2	< 5.3	< 257	< 8.2	< 115	< 937	< 21,000	< 7.8
1,2 - Dichlorobenzene	< 6.4	< 4.1	< 193	< 6.4	< 89.8	< 703	< 16,000	< 6.1
1,3 - Dichlorobenzene	< 6.4	< 4.1	< 193	< 6.4	< 89.8	< 703	< 16,000	< 6.1
1,4 - Dichlorobenzene	< 6.4	< 4.1	< 193	< 6.4	< 89.8	< 703	< 16,000	< 6.4
Dichlorodifluoromethane	< 5.3	< 3.4	< 161	< 5.3	< 74.3	< 586	< 23,000	< 5
1,1 - Dichloroethane	< 4.3	< 2.8	< 132	< 4.3	< 60.3	< 480	< 11,000	< 4.1
1,2 - Dichloroethane	< 4.3	< 1.4	< 65.9	6.6	< 30.2	< 240	< 11,000	< 4.3
1,1 - Dichloroethene	< 4.2	< 2.7	< 130	< 4.2	<59.6	< 474	< 11,000	< 4
cis - 1,2 - Dichloroethene	< 4.2	< 2.7	< 130	< 4.2	< 59.6	< 474	< 11,000	< 4
trans - 1,2 - Dichloroethene	< 4.2	< 2.7	< 130	< 4.2	< 59.6	< 474	< 11,000	< 4
1,2 - Dichloropropane	< 4.9	< 3.2	< 151	< 4.9	< 69.2	< 550	< 13,000	< 4.7
cis - 1,3 - Dichloropropene	< 4.9	< 3.1	< 148	< 4.9	< 67.7	< 539	< 12,000	< 4.6
trans - 1,3 - Dichloropropene	< 4.9	< 3.1	< 148	< 4.9	< 67.7	< 539	< 12,000	< 4.6
Dichlorotetrafluorethane	< 7.5	< 4.8	< 225	< 7.5	< 104	< 820	< 19,000	8.6
Ethanol	17.6	13.2	< 306	17.4	68.0	< 1,110	--	--
Ethyl Acetate	< 3.8	< 2.5	< 117	< 3.8	< 53.7	< 427	< 9,900	< 3.7
Ethylbenzene	< 4.6	6.2	< 142	< 4.6	107	< 515	< 12,000	< 4.4
4 -Ethyltoluene	< 5.2	4.5	< 402	< 5.2	< 73.6	< 1,460	< 13,000	< 5
n-Heptane	36.4	5.1	< 133	< 4.4	< 61.1	4,970	< 11,000	41.2
Hexachloro-1,3-butadiene	< 11.4	< 7.5	< 354	< 11.4	< 162	< 1,290	< 29,000	< 11
n-Hexane	209	13.8	< 116	< 3.8	< 53.0	23,300	9,490 J	84.2
2-Hexanone	< 4.4	7.4	< 133	< 4.4	< 61.1	< 486	< 11,000	< 4.2
Methylene Chloride	< 3.7	31.9	< 114	< 3.7	< 52.2	< 416	< 9,500	< 3.5
4-methyl-2-pentanone	< 4.4	5.2	< 133	11.4	< 61.1	< 486	< 11,000	< 4.2
Methyl-tert-butyl-ether	< 7.7	< 2.5	< 117	< 7.7	< 53.7	< 427	< 9,900	< 3.7
Naphthalene	< 5.6	5.6	< 434	< 5.6	< 78.7	< 1,580	< 14,000	3.51 J

TABLE 3

GAS SAMPLE VOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - OCTOBER 2012
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
Results in ug/m3

Well ID	SJ 02816		SJ 03259			SJ 03250		SJ 03250(2)
Source Type	Water Well		Water Well			Water Well		Water Well
Sample ID	A-074922-052212-CM-02816-2	A-074922-101712-CM-02816-3	A-074922-120211-CM-29	A-074922-052212-CM03259-2	A-074922-101612-CM03259-3	A-074922-120211-CM-2566	A-074922-052412-CM-03250-2	A-074922-052412-CM-03250(2)-1
Date	05/22/2012	10/17/2012	12/01/2011	05/22/2012	10/16/2012	12/02/2011	05/24/2012	05/24/2012
Constituents								
2-propanol	< 2.6	< 1.7	< 402	6.2	< 36.8	< 1,460	--	--
Propylene	< 7.4	< 1.2	< 56.3	< 7.4	< 25.8	< 205	< 4,700	< 1.7
Styrene	< 4.5	4.5	< 140	< 4.5	< 64.0	< 509	< 12,000	5.2
1,1,2,2-Tetrachloroethane	< 7.3	< 2.4	< 112	< 7.3	< 51.4	< 409	< 19,000	< 7
Tetrachloroethene	< 7.2	< 2.3	< 111	< 7.2	< 50.7	< 403	< 19,000	< 6.9
Tetrahydrofuran	< 3.2	25.8	6,180	1,410	1,010	< 351	< 8,100	< 3
THC as Gas	20,700	3,700	13,300	21,000	19,300	837,000	690,000 J	13,000
Toluene	11.0	14.3	9,380	6,280	3,810	< 451	< 10,000	56.7
1,2,4-Trichlorobenzene	< 7.9	< 5.1	< 159	< 7.9	< 111	< 580	< 20,000	< 7.5
1,1,1 - Trichloroethane	<5.8	< 3.8	< 177	< 5.8	< 81.7	< 644	< 15,000	< 5.5
1,1,2-Trichloroethane	< 5.8	< 1.9	< 88.4	< 5.8	< 40.5	< 322	< 15,000	< 5.5
Trichloroethene	< 5.7	< 1.9	< 88.4	< 5.7	< 40.5	< 322	< 15,000	< 5.5
Trichlorofluoromethane	112	67.8	< 177	< 6.0	< 83.9	< 644	< 15,000	< 5.7
1,1,2-Trichlorotrifluoroethane	< 8.2	< 5.4	< 257	< 8.2	< 118	< 937	< 21,000	< 7.8
1,2,4-Trimethylbenzene	< 5.2	8.5	< 161	< 5.2	137	< 585	< 13,000	< 5
1,3,5-Trimethylbenzene	< 5.2	6.9	< 161	< 5.2	< 73.5	< 585	< 13,000	< 5
Vinyl acetate	< 3.8	< 2.4	< 114	<3.8	< 52.7	< 416	< 9,600	< 3.6
Vinyl Chloride	< 2.7	< 0.88	< 41.8	< 2.7	< 19.1	< 152	< 7,000	< 2.6
m&p Xylene	< 9.3	15.8	< 283	15.3	216	< 1,030	< 24,000	23.8
o-Xylene	< 4.6	7.2	< 142	< 4.6	100	< 515	< 12,000	4.86

TABLE 3

GAS SAMPLE VOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - OCTOBER 2012
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
Results in ug/m3

Well ID	*SJ 03823P1*			*SJ 02992*		*SJ 32-8 No. 25*	
Source Type	*Water Well*			*Water Well*		*E&P Well*	
Sample ID	*A-074922-120211-CM-D3*	*A-074922-052412-CM-03823P1-2*	*A-074922-101712-CM-03823P1-3*	*A-074922-052412-CM-02992-1*	*A-074922-101812-CM-02992-2*	*A-074922-120211-CM-25*	*A-074922-052312-CM-25-2*
Date	*12/02/2011*	*05/24/2012*	*10/17/2012*	*5/24/2012*	*10/18/2012*	*12/02/2011*	*05/23/2012*
Constituents							
Acetone	15.0	201	52.4	79.0	121	< 147	< 8,670
Benzene	< 0.52	< 3.3	< 1.1	< 3.4	0.97	33,500	27,000
Benzyl chloride	< 1.7	< 5.3	< 3.5	< 5.5	< 2.2	< 323	< 18,900
Bromodichloromethane	< 2.3	< 6.9	< 4.5	< 7.2	< 2.9	< 430	< 24,400
Bromoform	< 3.4	< 10.6	< 6.9	< 11.0	< 4.4	< 645	< 37,600
Bromomethane	< 1.3	< 4.0	< 2.6	< 4.1	15.0	< 243	< 14,100
1,3 - Butadiene	< 0.72	< 2.3	< 1.5	< 2.4	< 0.94	< 138	< 8,030
2-Butanone	15.0	212	71.1	7,470	13,600	< 184	< 10,800
Carbon disulfide	< 1.0	< 3.2	28.0	< 3.3	2.4	< 194	< 11,300
Carbon tetrachloride	< 1.0	< 6.5	< 2.1	< 6.7	< 1.3	< 197	< 22,900
Chlorobenzene	< 15	< 4.7	< 3.1	< 4.9	< 20	< 289	< 16,800
Chloroethane	< 0.87	< 2.7	< 1.8	< 2.8	3.1	< 166	< 9,610
Chloroform	16.8	37.9	8.7	< 5.2	< 2.1	< 304	< 17,800
Chloromethane	< 0.68	< 2.1	< 1.4	< 2.2	3.8	< 129	< 7,530
Cyclohexane	8.8	5.1	4.5	20.3	3.8	19,300	18,100
Dibromochloromethane	< 2.7	< 8.7	< 5.7	< 9.1	< 3.6	< 522	< 31,000
1,2 - Dibromoethane (EDB)	< 2.6	< 7.9	< 5.1	< 8.2	< 3.3	< 492	< 28,000
1,2 - Dichlorobenzene	< 1.9	< 6.2	< 4.0	< 6.4	< 2.6	< 369	< 21,900
1,3 - Dichlorobenzene	< 1.9	< 6.2	< 4.0	< 6.4	< 2.6	< 369	< 21,900
1,4 - Dichlorobenzene	< 1.9	< 6.2	< 4.0	8.1	< 2.6	< 369	< 21,900
Dichlorodifluoromethane	1.7	< 5.1	< 3.3	< 5.3	< 2.1	< 307	< 18,000
1,1 - Dichloroethane	< 1.3	< 4.2	< 2.7	< 4.3	< 1.7	< 252	< 14,800
1,2 - Dichloroethane	< 0.66	< 4.2	< 1.4	< 4.3	1.0	< 126	< 14,800
1,1 - Dichloroethene	< 1.3	< 4.1	< 2.7	< 4.2	< 1.7	< 249	< 14,500
cis - 1,2 - Dichloroethene	< 1.3	< 4.1	< 2.7	< 4.2	< 1.7	< 249	< 14,500
trans - 1,2 - Dichloroethene	< 1.3	< 4.1	< 2.7	< 4.2	< 1.7	< 249	< 14,500
1,2 - Dichloropropane	< 1.5	< 4.7	< 3.1	< 4.9	< 2.0	< 289	< 16,800
cis - 1,3 - Dichloropropene	< 1.5	< 4.7	< 3.0	< 4.9	< 1.9	< 283	< 16,600
trans - 1,3 - Dichloropropene	< 1.5	< 4.7	< 3.0	< 4.9	< 1.9	< 283	< 16,600
Dichlorotetrafluorethane	< 2.3	< 7.2	< 4.7	< 7.5	< 3.0	< 430	< 25,400
Ethanol	2.0 J	30.3	19.9	18.7	64.8	< 584	< 6,880
Ethyl Acetate	< 1.2	< 3.7	< 2.4	< 3.8	< 1.5	< 224	< 13,100
Ethylbenzene	< 1.4	< 4.5	7.4	< 4.6	7.5	255 J	< 15,800
4 -Ethyltoluene	< 4.0	< 5.0	6.2	< 5.2	6.1	< 768	< 17,900
n-Heptane	< 1.3	6.0	6.0	13.6	5.3	8,430	< 14,900
Hexachloro-1,3-butadiene	< 3.5	< 10.9	< 7.3	< 11.4	< 4.6	< 676	< 38,900
n-Hexane	3.5	< 3.6	< 2.4	< 3.8	< 1.5	13,900	23,000
2-Hexanone	< 1.3	< 4.2	7.9	< 4.4	8.5	< 255	< 14,900
Methylene Chloride	1.5	< 3.6	3.1	< 3.7	2.3	< 218	< 12,700
4-methyl-2-pentanone	2.9	7.2	5.4	7.5	6.0	< 255	< 14,900
Methyl-tert-butyl-ether	< 1.2	< 7.4	< 2.4	< 7.7	< 1.5	< 224	< 26,200
Naphthalene	< 4.3	< 5.4	5.2	< 5.6	9.3	< 829	< 19,100

TABLE 3

GAS SAMPLE VOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - OCTOBER 2012
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
Results in ug/m3

Well ID	*SJ 03823P1*			*SJ 02992*		*SJ 32-8 No. 25*	
Source Type	*Water Well*			*Water Well*		*E&P Well*	
Sample ID	*A-074922-120211-CM-D3*	*A-074922-052412-CM-03823P1-2*	*A-074922-101712-CM-03823P1-3*	*A-074922-052412-CM-02992-1*	*A-074922-101812-CM-02992-2*	*A-074922-120211-CM-25*	*A-074922-052312-CM-25-2*
Date	*12/02/2011*	*05/24/2012*	*10/17/2012*	*5/24/2012*	*10/18/2012*	*12/02/2011*	*05/23/2012*
Constituents							
2-propanol	2.0 J	< 2.5	< 1.6	3.3	11.3	< 768	< 8,960
Propylene	< 0.56	< 7.1	< 1.2	< 7.4	< 0.74	< 108	< 25,100
Styrene	< 1.4	4.9	4.8	< 4.5	5.0	< 267	< 15,500
1,1,2,2-Tetrachloroethane	< 1.1	< 7.0	< 2.3	< 7.3	< 1.5	< 214	< 25,000
Tetrachloroethene	< 1.1	< 7.0	< 2.3	< 7.2	< 1.4	< 212	< 24,700
Tetrahydrofuran	482	230	84.5	3,880	9,170	< 184	< 10,800
THC as Gas	2,590	11,500	6,230	15,400	14,500	595,000	1,100,000
Toluene	112	107	36.4	195	49.6	22,900	14,900
1,2,4-Trichlorobenzene	< 1.6	< 7.6	< 5.0	< 7.9	< 3.2	< 304	< 27,000
1,1,1 - Trichloroethane	< 1.8	< 5.6	< 3.7	< 5.8	< 2.3	< 338	< 19,900
1,1,2-Trichloroethane	< 0.89	< 5.6	< 1.8	< 5.8	< 1.2	< 169	< 19,900
Trichloroethene	< 0.89	< 5.5	< 1.8	< 5.7	< 1.2	< 169	< 19,600
Trichlorofluoromethane	< 1.8	< 5.8	< 3.8	< 6.0	< 2.4	< 338	< 20,500
1,1,2-Trichlorotrifluoroethane	< 2.6	< 7.9	< 5.3	< 8.2	< 3.4	< 492	< 27,900
1,2,4-Trimethylbenzene	< 1.6	< 5.0	12.1	< 5.2	16.6	< 307	< 17,900
1,3,5-Trimethylbenzene	< 1.6	< 5.0	8.8	< 5.2	7.5	< 307	< 17,900
Vinyl acetate	< 1.1	< 3.6	< 2.4	< 3.8	< 1.5	< 218	< 12,800
Vinyl Chloride	< 0.42	< 2.6	< 0.86	< 2.7	< 0.55	< 79.9	< 9,320
m&p Xylene	< 2.8	12.6	26.0	< 9.3	21.1	2390	< 31,600
o-Xylene	< 1.4	< 4.5	12.3	< 4..6	< 1.8	228 J	<15,800

TABLE 3

GAS SAMPLE VOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS SUMMARY

FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - OCTOBER 2012
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
Results in ug/m3

Well ID	*SJ 32-8 No. 202*		*SJ 32-8 No. 204A*
Source Type	*E&P Well*		*E&P Well*
Sample ID	*A-074922-120211-CM-202*	*A-074922-052312-CM-202-2*	*A-074922-120211-CM-204A*
Date	*12/02/2011*	*05/23/2012*	*12/02/2011*
Constituents			
Acetone	< 5.8	< 24.2	< 24.7
Benzene	< 3.9	< 32.4	206
Benzyl chloride	< 12.7	< 52.6	< 54.0
Bromodichloromethane	< 16.9	< 68.2	< 72.0
Bromoform	< 25.4	< 105	< 108
Bromomethane	< 9.6	< 39.4	< 40.7
1,3 - Butadiene	< 5.4	< 22.4	< 23.2
2-Butanone	< 7.3	< 30.0	< 30.9
Carbon disulfide	< 7.6	< 31.6	< 32.4
Carbon tetrachloride	< 7.7	< 64.0	< 32.9
Chlorobenzene	< 11.4	< 46.8	< 48.4
Chloroethane	< 6.5	< 26.8	< 27.8
Chloroform	< 12.0	< 49.6	< 50.9
Chloromethane	< 5.1	< 21.0	< 21.6
Cyclohexane	221	466	3,940
Dibromochloromethane	< 20.6	< 86.6	< 87.5
1,2 - Dibromoethane (EDB)	< 19.4	< 78.0	< 82.3
1,2 - Dichlorobenzene	< 14.5	< 61.2	< 61.8
1,3 - Dichlorobenzene	< 14.5	< 61.2	< 61.8
1,4 - Dichlorobenzene	< 14.5	< 61.2	< 61.8
Dichlorodifluoromethane	< 12.1	< 50.2	< 51.5
1,1 - Dichloroethane	< 9.9	< 41.2	< 42.2
1,2 - Dichloroethane	< 5.0	< 41.2	< 21.1
1,1 - Dichloroethene	< 9.8	< 40.4	< 41.7
cis - 1,2 - Dichloroethene	< 9.8	< 40.4	< 41.7
trans - 1,2 - Dichloroethene	< 9.8	< 40.4	< 41.7
1,2 - Dichloropropane	< 11.4	< 47.0	< 48.4
cis - 1,3 - Dichloropropene	< 11.1	< 46.2	< 47.3
trans - 1,3 - Dichloropropene	< 11.1	< 46.2	< 47.3
Dichlorotetrafluorethane	< 16.9	< 71.0	< 72.0
Ethanol	< 23.0	< 19.2	< 97.8
Ethyl Acetate	< 8.8	< 36.6	< 37.6
Ethylbenzene	< 10.6	< 44.2	24.0 J
4 -Ethyltoluene	< 30.2	< 50.0	< 129
n-Heptane	70.5	130	2,400
Hexachloro-1,3-butadiene	< 26.6	< 108	< 113
n-Hexane	106	286	3,440
2-Hexanone	< 10.0	< 41.6	< 42.7
Methylene Chloride	< 8.6	< 35.4	314
4-methyl-2-pentanone	< 10.0	< 41.6	< 42.7
Methyl-tert-butyl-ether	< 8.8	< 73.2	< 37.6
Naphthalene	< 32.7	< 53.2	< 139

TABLE 3

GAS SAMPLE VOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS SUMMARY

FROM E&P WELLS AND PRIVATE WATER WELLS

DECEMBER 2011 - OCTOBER 2012

CONOCOPHILLIPS COMPANY

SAN JUAN 32-8 NO. 30 AREA INVESTIGATION

Results in ug/m3

Well ID	*SJ 32-8 No. 202*		*SJ 32-8 No. 204A*
Source Type	*E&P Well*		*E&P Well*
Sample ID	*A-074922-120211-CM-202*	*A-074922-052312-CM-202-2*	*A-074922-120211-CM-204A*
Date	*12/02/2011*	*05/23/2012*	*12/02/2011*
Constituents			
2-propanol	< 30.2	< 25.0	< 129
Propylene	< 4.2	< 70.0	< 18.0
Styrene	< 10.5	< 43.2	< 44.8
1,1,2,2-Tetrachloroethane	< 8.4	< 69.8	< 35.9
Tetrachloroethene	< 8.3	< 69.0	< 35.5
Tetrahydrofuran	< 7.3	< 30.0	< 30.9
THC as Gas	10,200	46,900	85,800
Toluene	< 9.3	< 38.4	587
1,2,4-Trichlorobenzene	< 12.0	< 75.4	< 50.9
1,1,1 - Trichloroethane	< 13.3	< 55.4	< 56.6
1,1,2-Trichloroethane	< 6.7	< 55.4	< 28.3
Trichloroethene	< 6.7	< 54.6	< 28.3
Trichlorofluoromethane	< 13.3	< 57.2	< 56.6
1,1,2-Trichlorotrifluoroethane	< 19.4	< 77.8	< 82.3
1,2,4-Trimethylbenzene	< 12.1	< 50.0	< 51.4
1,3,5-Trimethylbenzene	< 12.1	< 50.0	< 51.4
Vinyl acetate	< 8.6	< 35.8	< 36.5
Vinyl Chloride	< 3.1	< 26.0	< 13.4
m&p Xylene	< 21.3	< 88.2	151
o-Xylene	< 10.6	< 44.2	31.8 J

Notes:

[1] J Indicates estimated concentrations

[2] -- Indicates not analyzed

[3] < 1.0 = Below Laboratory detection limit

[4] A = indicates Gas Sample

TABLE 4

GAS SAMPLE HYDROGEN SULFIDE AND ACETYLENE ANALYTICAL RESULTS SUMMARY
FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - OCTOBER 2012
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Well ID	*Source Type*	*Sample ID*	*Date*	*Hydrogen Sulfide (ppmv)*	*Acetylene (ppmv)*
SJ 02816	Water Well	--	12/01/2011	Inaccessible	
		A-074922-052212-CM-02816-2	05/22/2012	< 0.42	< 0.0021
		A-074922-101712-CM-02816-3	10/17/2012	< 0.42	< 0.0021
SJ 03259	Water Well	A-074922-120211-CM-29	12/01/2011	< 0.20	< 10
		A-074922-052212-CM-03259-2	05/22/2012	< 0.43	< 0.0022
		A-074922-101612-CM-03259-3	10/16/2012	< 0.44	< 0.0022
SJ 03250	Water Well	A-074922-120211-CM-2566	12/02/2011	150	< 10
		A-074922-052412-CM-03250-2	05/24/2012	160	1.6
SJ 03250(2)	Water Well	A-074922-052412-CM-3250(2)-1	05/24/2012	< 0.42	< 0.0021
SJ 03823P1	Water Well	A-074922-120211-CM-D3	12/02/2011	< 0.20	**
		A-074922-052412-CM-03823P1-2	05/24/2012	< 0.41	< 0.0021
		A-074922-101712-CM-03823P1-3	10/17/2012	< 0.44	< 0.0022
SJ 02992	Water Well	A-074922-052412-CM-02992-1	05/24/2012	< 0.44	< 0.0031
		A-074922-101812-CM-02992-2	10/18/2012	< 0.44	< 10
SJ 03897P1	Water Well	--	05/22/2012	Inaccessible	
		--	10/16/2012	Inaccessible	
SJ 32-8 No. 25	E&P Well	A-074922-120211-CM-2566	12/02/2011	< 0.20	< 10
		A-074922-052312-CM-25-2	05/23/2012	< 0.20	< 0.0018
SJ 32-8 No. 202	E&P Well	A-074922-120211-CM-202	12/02/2011	< 0.20	< 10
		A-074922-052312-CM-202-2	05/23/2012	< 0.20	< 0.0010
SJ 32-8 No. 204A	E&P Well	A-074922-120211-CM-204A	12/02/2011	< 0.20	< 10

Notes:
[1] ** = Sample volume was lost during transport to Air Technologies Laboratory
[2] ppmv = part per million by volume
[3] < 0.20 = Below laboratory detection limit of 0.20 ppmv
[4] -- Indicates not analyzed
[5] A- indicates Gas Sample

TABLE 5

GAS SAMPLE METHANE, CONDENSATES AND ATMOPHERIC GASES ANALYTICAL AND ISOTOPIC
ANALYTICAL RESULTS SUMMARY FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30

Well ID	Source Type	Sample ID	Date	Helium	Hydrogen	Argon	Oxygen	Nitrogen		Carbon Dioxide			Methane		
				Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %	$\delta^{15}N\%$	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰
SJ 02816	Water Well	--	12/01/2011	Inaccessible											
		A-074922-052212-CM-02816-2 [2]	05/22/2012	0.0027	ND	0.975	21.94	77.02	--	0.065	--	--	ND	--	--
		A-074922-101712-CM-02816-3 [2]	10/17/2012	ND	ND	0.951	20.98	77.94	-0.5	0.13	--	--	0.0002	--	--
SJ 03259	Water Well	A-074922-120211-CM-29 [2]	12/02/2011	ND	ND	0.935	20.86	78.04	--	0.075	--	--	0.0916	--	--
		A-074922-052212-CM-03259-2 [2]	05/22/2012	0.0016	ND	0.980	21.75	77.05	--	0.085	--	--	0.133	--	--
		A-074922-101612-CM-03259-3 [2]	10/16/2012	ND	ND	0.950	21.34	77.59	-0.6	0.064	--	--	0.0586	--	--
		A-074922-091913-CM-3259 [1]	09/19/2013	ND	ND	1.40	12.41	77.52	--	4.50	--	--	4.16	--	--
SJ 03250	Water Well	A-074922-120211-CM-2566 [2]	12/02/2011	0.0036	ND	0.0312	0.17	2.37	--	1.46	--	--	94.20	-36.44	-174.7
		A-074922-052412-CM-03250-2 [2]	05/24/2012	0.0047	ND	0.0350	0.17	2.58	--	1.46	-14.83	--	93.95	-36.48	-176.5
SJ 03250(2)	Water Well	A-074922-052412-CM-3250-(2)-1 [2]	05/24/2012	0.0016	ND	0.993	19.13	79.23	--	0.65	--	--	ND	--	--
SJ 03823P1	Water Well	A-074922-120211-CM-D3 [2]	12/02/2011	ND	ND	0.946	20.04	78.51	--	0.50	--	--	0.0031	--	--
		A-074922-052412-CM-03823P1-2 [2]	05/24/2012	0.0017	ND	0.980	21.78	77.12	--	0.12	--	--	0.0003	--	--
		A-074922-101712-CM-03823P1-3 [2]	10/17/2012	ND	ND	0.959	19.10	79.17	-0.3	0.77	-19.12	--	0.0002	--	--
		A-074922-101712-CM-03823P1-3 [1]	10/17/2013	--	--	1.40	21.43	71.66	-0.3	5.50	-19.12	--	0.0133	--	--
		A-074922-091913-CM-3823P1-Cold [1]	09/19/2013	ND	ND	1.42	16.50	76.58	--	5.50	--	--	0.0037	--	--
		A-074922-091913-CM-3823P1-Hot [1]	09/19/2013	ND	ND	1.33	16.40	76.18	--	6.08	--	--	0.0081	--	--
SJ 02992	Water Well	A-074922-052412-CM-02992-1 [2]	05/24/2012	0.0023	ND	0.987	21.59	77.30	--	0.12	--	--	0.0017	--	--
		A-074922-101912-CM-02992-2 [2]	10/18/2012	ND	ND	0.933	20.13	78.79	-0.4	0.14	--	--	0.0034	--	--
		A-074922-101912-CM-02992-2 [1]	10/19/2012	--	ND	1.33	18.74	71.59	--	7.68	--	--	0.651	--	--
		A-074922-091913-CM-2992 [1]	09/19/2013	ND	ND	1.21	14.57	76.93	--	6.70	--	--	0.584	--	--
SJ 03897P1	Water Well	--	05/22/2012	Inaccessible											
		--	10/16/2012	Inaccessible											
SJ 32-8 No. 25	E&P Well	A-074922-120211-CM-25 [2]	12/02/2011	0.0032	ND	0.0878	2.04	7.66	--	1.83	--	--	87.27	-35.93	-173.1
		A-074922-052312-CM-25-2 [2]	05/23/2012	0.0046	0.0099	0.0065	0.14	0.48	--	1.98	-7.42	--	95.62	-36.29	-174.7
SJ 32-8 No. 202	E&P Well	A-074922-120211-CM-202 [2]	12/02/2011	ND	ND	0.0458	1.07	3.90	--	10.13	--	--	84.57	-42.76	-207.4
		A-074922-052312-CM-202-2 [2]	05/23/2012	0.0011	ND	ND	0.094	0.24	--	10.95	16.49	--	88.40	-42.82	-209.5
SJ 32-8 No. 204A	E&P Well	A-074922-120211-CM-204 [2]	12/02/2011	ND	ND	0.126	2.91	10.82	--	9.71	--	--	76.17	-42.86	-208.6

Notes:

[1] Data obtained from Isobag
[2] Data obtained from Cali-5-Bond Bag
[3] -- Indicates not analyzed
[4] A- indicates Gas Sample
ND = Not Detected by mass spectroscopy

TABLE 5

GAS SAMPLE METHANE, CONDENSATES AND ATMOPHERIC GASES ANALYTICAL AND ISOTOPIC
ANALYTICAL RESULTS SUMMARY FROM E&P WELLS AND PRIVATE WATER WELLS
DECEMBER 2011 - SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30

Well ID	Source Type	Sample ID	Date	Ethane			Propane	Propylene	Isobutane	N-butane	Iso-pentane	N-pentane	Hexanes+	BTU/cu.ft.	Specific Gravity
				Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %		
SJ 02816	Water Well	--	12/01/2011	Inaccessible											
		A-074922-052212-CM-02816-2 [2]	05/22/2012	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	1.002
		A-074922-101712-CM-02816-3 [2]	10/17/2012	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	1.001
SJ 03259	Water Well	A-074922-120211-CM-29 [2]	12/02/2011	0.0006	--	--	--	--	--	--	--	--	ND	1	1.000
		A-074922-052212-CM-03259-2 [2]	05/22/2012	0.0008	--	--	ND	ND	ND	ND	ND	ND	ND	1	1.001
		A-074922-101612-CM-03259-3 [2]	10/16/2012	0.0004	--	--	ND	ND	ND	ND	ND	ND	ND	1	1.001
		A-074922-091913-CM-3259 [1]	09/19/2013	0.0051	--	--	ND	ND	ND	ND	ND	ND	ND	--	--
SJ 03250	Water Well	A-074922-120211-CM-2566 [2]	12/02/2011	1.53	-23.73	-138.0	0.174	0.0002	0.0344	0.0171	0.0075	0.0024	0.0031	989	0.589
		A-074922-052412-CM-03250-2 [2]	05/24/2012	1.57	-23.79	-133.6	0.170		0.0342	0.0166	0.0069	0.0022	0.0023	987	0.590
SJ 03250(2)	Water Well	A-074922-052412-CM-3250-(2)-1 [2]	05/24/2012	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	1.001
SJ 03823P1	Water Well	A-074922-120211-CM-D3 [2]	12/02/2011	0.0003	--	--	0.0002	--	0.0001	0.0002	0.0001	0.0002		0	1.001
		A-074922-052412-CM-03823P1-2 [2]	05/24/2012	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	1.002
		A-074922-101712-CM-03823P1-3 [2]	10/17/2012	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	1.002
		A-074922-101712-CM-03823P1-3 [1]	10/17/2013	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	1.002
		A-074922-091913-CM-3823P1-Cold [1]	09/19/2013	ND	--	--	ND	ND	ND	ND	ND	ND	ND	--	--
		A-074922-091913-CM-3823P1-Hot [1]	09/19/2013	ND	--	--	ND	ND	ND	ND	ND	ND	ND	--	--
SJ 02992	Water Well	A-074922-052412-CM-02992-1 [2]	05/24/2012	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	1.002
		A-074922-101912-CM-02992-2 [2]	10/18/2012	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	1.000
		A-074922-101912-CM-02992-2 [1]	10/19/2012	0.0086	--	--	0.0004	ND	ND	ND	ND	ND	ND	--	--
		A-074922-091913-CM-2992 [1]	09/19/2013	0.0069	--	--	ND	ND	ND	ND	ND	ND	ND	--	--
SJ 03897P1	Water Well	--	05/22/2012	Inaccessible											
		--	10/16/2012	Inaccessible											
SJ 32-8 No. 25	E&P Well	A-074922-120211-CM-25 [2]	12/02/2011	1.00	-23.31	-136.3	0.0859	0.002	0.0160	0.0063	0.0024	0.0007	0.0011	906	0.621
		A-074922-052312-CM-25-2 [2]	05/23/2012	1.54	-23.52	-137.3	0.158	ND	0.0349	0.0158	0.0076	0.0027	0.0037	1003	0.586
SJ 32-8 No. 202	E&P Well	A-074922-120211-CM-202 [2]	12/02/2011	0.279	-20.47	--	0.0059	0.0001	0.0005	0.0003	--	--	ND	863	0.676
		A-074922-052312-CM-202-2 [2]	05/23/2012	0.309	-20.44	--	0.0062	ND	0.0005	0.0003	ND	ND	ND	902	0.663
SJ 32-8 No. 204A	E&P Well	A-074922-120211-CM-204 [2]	12/02/2011	0.258	-20.68	--	0.0078	0.0001	0.0009	0.0009	0.0002	0.0001	--	777	0.711

Notes:

[1] Data obtained from Isobag
[2] Data obtained from Cali-5-Bond Bag
[3] -- Indicates not analyzed
[4] A- indicates Gas Sample
ND = Not Detected by mass spectroscopy

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
CONCOPHILLIPS COMPANY
SAN JUAN 32-30 NO. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Methane / Condensates from Isoflask							Total Petroleum Hydrocarbons (TPH)		Volatile Organics			
				Dissolved CH_4 (mg/L)	Dissolved C_2H_6 (cc/L)	Dissolved C_2H_6 (mg/L)	Dissolved C_2H_4 (cc/L)	Dissolved C_2H_4 (mg/L)	Dissolved C_3H_8 (cc/L)	Dissolved C_3H_8 (mg/L)	TPH (C10-C28) Diesel Range Organics (mg/L)	TPH (C6-C10) Gasoline Range Organics (mg/L)	Acetone (µg/L)	Benzene (µg/L)	Bromobenzene (µg/L)	Bromochloromethane (µg/L)
New Mexico Standards for Groundwater [1]				NE	NE	NE	NE	NE			NE	NE	NE	10	NE	NE
GW-074922-121012-CM-MW-1-Z3	MW-1	C	12/10/2012	0.57	--	--	--	--	--	--	1.4	< 0.50	29.9	< 1.0	< 1.0	< 1.0
GW-074922-022813-CM-MW-1-Z3	MW-1	C	2/28/2013	0.097	--	--	--	--	--	--	0.98	< 0.50	189	< 1.0	< 1.0	< 1.0
GW-074922-032213-CM-MW-1-Z3	MW-1	C	3/22/2013	0.100	--	--	--	--	--	--	1.2	< 0.50	213	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z3	MW-1	C	6/18/2013	1.300	--	--	--	--	--	--	1.4	< 0.50	432	2.4	< 1.0	< 1.0
GW-074922-100213-CM-MW-1-Z3	MW-1	C	10/2/2013	0.160	--	--	--	--	--	--	1.3	< 0.50	< 10.0	1.1	< 1.0	< 1.0
GW-074922-120613-CM-MW-[illegible]-Z3	MW-1	C	12/6/2013	0.260	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z3	MW-1	C	2/18/2014	0.021	0.00	0.00	< 0.0003	< 0.0003	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-1-Z3	MW-1	C	4/16/2014	0.200	0.01	0.01			0.00	0.00	--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z3	MW-1	C	6/24/2014	0.39	0.02	0.02	--	--	0.0012	0.0023	--	--				
GW-074922-081914-CM-MW-1-Z3	MW-1	C	8/19/2014	0.06	0.00	0.0036	--	--	0.0004	0.0008	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z3	MW-1	C	10/21/2014	0.21	0.01	0.0120	--	--	0.0009	0.0017	--	--	--	--	--	--
GW-074922-120314-CM-MW-1-Z3	MW-1	C	12/3/2014	0.11	0.00	0.0058	--	--	0.0006	0.0010	--	--	--	--	--	--
GW-074922-121012-CM-MW-1-Z2	MW-1	D	12/10/2012	1.0	--	--	--	--	--	--	5.3	< 0.50	91.4	< 5.0	< 5.0	< 5.0
GW-074922-022813-CM-MW-1-Z2	MW-1	D	2/28/2013	3.00	--	--	--	--	--	--	0.88	<0.50	552	< 5.0	< 5.0	< 5.0
GW-074922-032213-CM-MW-1-Z2	MW-1	D	3/22/2013	0.02	--	--	--	--	--	--	0.84	< 0.50	455	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z2	MW-1	D	6/18/2013	0.05	--	--	--	--	--	--	< 0.50	< 0.50	10.7	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z2	MW-1	D	9/26/2013	0.23	--	--	--	--	--	--	< 0.50	< 0.50	< 10.0	1.2	< 1.0	< 1.0
GW-074922-120613-CM-MW-[illegible]-Z2	MW-1	D	12/6/2013	0.18	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z2	MW-1	D	2/18/2014	0.05	0.00	0.00	< 0.0006	< 0.0007	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z2	MW-1	D	4/15/2014	0.013	0.00	0.00	--	--	<0.0003	<0.0006	--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z2	MW-1	D	6/24/2014	0.82	0.04	0.05	--	--	0.0066	0.0036	--	--	--	--	--	--
GW-074922-081914-CM-MW-1-Z2	MW-1	D	8/19/2014	0.25	0.02	0.0170	--	--	0.0042	0.0023	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z2	MW-1	D	10/21/2014	0.21	0.01	0.0150	--	--	0.0014	0.0026	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z2	MW-1	D	12/2/2014	0.42	0.02	0.0280	--	--	0.0027	0.0050	--	--	--	--	--	--
GW-074922-121012-CM-MW-1- DUP	MW-1	G	12/10/2012	--	--	--	--	--	--	--	--	--	117	< 5.0	< 5.0	< 5.0
GW-074922-121012-CM-MW-1-Z1	MW-1	G	12/10/2012	0.200	--	--	--	--	--	--	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0
GW-074922-022813-CM-MW-1-DUP	MW-1	G	2/28/2013	0.09	--	--	--	--	--	--	--	--	536	< 5.0	< 5.0	< 5.0
GW-074922-022813-CM-MW-1-Z1	MW-1	G	2/28/2013	1.000							0.58	< 0.50	256	< 1.0	< 1.0	< 1.0
GW-074922-032213-CM-MW-1-DUP	MW-1	G	3/22/2013	0.10	--	--	--	--	--	--	--	--	647	< 5.0	< 5.0	< 5.0
GW-074922-032213-CM-MW-1-Z1	MW-1	G	3/22/2013	1.200	--	--	--	--	--	--	< 0.50	< 0.50	371	1.1	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z1	MW-1	G	6/18/2013	0.640	--	--	--	--	--	--	4.5	< 0.5	99.0	1.2	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-DUP	MW-1	G	6/18/2013	0.02	--	--	--	--	--	--	--	--	< 10.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z1	MW-1	G	9/26/2013	1.100	--	--	--	--	--	--	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-DUP	MW-1	G	9/26/2013	1.20	0.07	--	--	--	--	--	< 0.50	< 0.50	< 10.0	< 1.0	< 1.0	< 1.0
GW-074922-120513-CM-MW-[illegible]-Z1	MW-1	G	12/5/2013	2.60	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-DUP	MW-1	G	12/5/2013	2.70	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-1-Z1	MW-1	G	2/19/2014	3.50	0.11	0.14	0.0011	0.0013	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-DUP	MW-1	G	2/19/2014	3.30	0.10	0.12	0.0011	0.0013	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z1	MW-1	G	4/15/2014	0.79	0.09	0.11	--	--	0.0081	0.0150	--	--	--	--	--	--
GW-074922-062414-CM-DUP	MW-1	G	6/24/2014	2.70	0.08	0.10	--	--	0.0042	0.0077	--	--	--	--	--	--

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
CONCOPHILLIPS COMPANY
SAN JUAN 32-30 NO. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Methane / Condensates from Isoflask							Total Petroleum Hydrocarbons (TPH)		Volatile Organics			
				Dissolved CH_4 (mg/L)	Dissolved C_2H_6 (cc/L)	Dissolved C_2H_6 (mg/L)	Dissolved C_2H_4 (cc/L)	Dissolved C_2H_4 (mg/L)	Dissolved C_3H_8 (cc/L)	Dissolved C_3H_8 (mg/L)	TPH (C10-C28) Diesel Range Organics (mg/L)	TPH (C6-C10) Gasoline Range Organics (mg/L)	Acetone (µg/L)	Benzene (µg/L)	Bromobenzene (µg/L)	Bromochloromethane (µg/L)
New Mexico Standards for Groundwater [1]				NE	NE	NE	NE	NE			NE	NE	NE	10	NE	NE
GW-074922-062414-CM-MW-1-Z1	MW-1	G	6/24/2014	2.60	0.08	0.09	--	--	0.0042	0.0076	--	--	--	--	--	--
GW-074922-082014-CM-MW-1-Z1	MW-1	G	8/20/2014	2.30	0.07	0.0880	--	--	0.0060	0.0110	--	--	--	--	--	--
GW-074922-082014-CM-DUP-1	MW-1	G	8/20/2014	2.7	0.079	0.099	--	--	0.006	0.011	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z1	MW-1	G	10/21/2014	2.90	0.11	0.1400	--	--	0.0095	0.0170	--	--	--	--	--	--
GW-074922-102114-CM-MW-DUP	MW-1	G	10/21/2014	0.05	0.00	0.0041	--	--	0.0004	0.0006	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z1	MW-1	G	12/2/2014	2.30	0.09	0.1100	--	--	0.0078	0.0140	--	--	--	--	--	--
GW-074922-120214-CM-DUP	MW-1	G	12/2/2014	2.60	0.09	0.1200	--	--	0.0077	0.0140	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z2	MW-2	A	12/3/2013	0.06	--	--	--	--			--	--	--	--	--	--
GW-074922-062314-CM-MW-2-Z2	MW-2	A	6/23/2014	0.17	0.01	0.10	--	--	0.0013	0.0024	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z1	MW-2	C	12/3/2013	0.06	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-2-Z1	MW-2	C	2/19/2014	0.01	0.00	0.00	< 0.0002	< 0.0002	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-2-Z1	MW-2	C	4/14/2014	0.18	0.01	0.01	--	--	0.0010	0.0018	--	--	--	--	--	--
GW-074922-081814-CM-MW-2-Z1	MW-2	C	8/18/2014	0.13	0.20	0.0022	--	--	0.0005	0.0003	--	--	--	--	--	--
GW-074922-102014-CM-MW-2-Z1	MW-2	C	10/20/2014	6.10	0.01	0.0180	--	--	0.0020	0.0037	--	--	--	--	--	--
GW-074922-120114-CM-MW-2-Z1	MW-2	C	12/1/2014	4.70	0.01	0.0160	--	--	0.0018	0.0033	--	--	--	--	--	--
GW-074922-120513-CM-MW-3-Z2	MW-3	D	12/5/2013	0.03	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-BJ-MW-3-Z2	MW-3	D	2/19/2014	0.00	< 0.0001	< 0.0002	< 0.0002	< 0.0002	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-3-Z2	MW-3	D	4/14/2014	0.19	0.00	0.00	--	--	0.0004	0.0007	--	--	--	--	--	--
GW-074922-062514-CM-MW-3-Z2	MW-3	D	6/25/2014	0.04	0.00	0.00	--	--	<.0005	<.0009	--	--	--	--	--	--
GW-074922-081914-CM-MW-3-Z2	MW-3	D	8/19/2014	0.03	0.00	0.0018	--	--	0.0002	0.0004	--	--	--	--	--	--
GW-074922-102114-CM-MW-3-Z2	MW-3	D	10/21/2014	0.52	0.02	0.0180	--	--	0.0011	0.0021	--	--	--	--	--	--
GW-074922-120214-CM-MW-3-Z2	MW-3	D	12/2/2014	0.05	0.00	0.0022	--	--	< 0.0002	< 0.0003	--	--	--	--	--	--
GW-074922-120413-CM-MW-4-Z2	MW-4	D	12/4/2013	0.88	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z2	MW-4	D	2/18/2014	0.03	0.00	0.00	< 0.0002	< 0.0002	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z2	MW-4	D	4/16/2014	0.03	0.00	0.00	--	--	0.0004	0.0008	--	--	--	--	--	--
GW-074922-062614-CM-MW-4-Z2	MW-4	D	6/26/2014	2.90	0.02	0.02	--	--	0.0019	0.0035	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z2	MW-4	D	8/20/2014	0.52	0.0055	0.0069	--	--	0.00095	0.0017	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z2	MW-4	D	10/22/2014	1.8	0.048	0.06	--	--	0.0051	0.0093	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z2	MW-4	D	12/3/2014	9.7	0.061	0.076	--	--	0.0057	0.011	--	--	--	--	--	--
GW-074922-120313-CM-MW-4-Z1	MW-4	E	12/3/2013	2.900	0.02	0.02	--	--	0.00	0.00	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z1	MW-4	E	2/18/2014	10.00	0.30	0.37	0.0002	0.0002	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z1	MW-4	E	4/16/2014	1.40	0.05	0.06	--	--	0.0060	0.0110	--	--	--	--	--	--
GW-074922-062514-CM-MW-4-Z1	MW-4	E	6/25/2014	1.20	0.07	0.08	--	--	0.0100	0.0190	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z1	MW-4	E	8/20/2014	2.20	0.10	0.1200	--	--	0.0110	0.0210	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z1	MW-4	E	10/22/2014	0.42	0.03	0.0350	--	--	0.0032	0.0059	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z1	MW-4	E	12/3/2014	1.50	0.08	0.0960	--	--	0.0089	0.0160	--	--	--	--	--	--

Notes:
[1] Criteria parameters and limits are listed in NMAC 20.6.2.3103 [NMAC Title 20, Chapter 6, Part 2, Section 3103: Human Health Standards for Groundwater of 10,000 mg/L TDS Concentration or Less].
[2] Additional NMAC 20.6.2.3103 limit for domestic water supply
[3] -- Indicates not analyzed
[4] Shaded bold results indicate exceedance limits listed in NMAC 20.6.2.3103.
[5] Sulfide analysis was conducted after hold time expired
[6] GW indicates Groundwater Sample
[7] < 1.0 Below laboratory detection limit
[8] NE indicates "Not Established'
[9] DUP indicates Duplicate Sample
mg/L = milligrams per liter
µg/L = micrograms per liter
cc/L = cubic centimeters

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
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Sample ID	Well	Zone	Date Sampled	Volatile Organics										
				Bromodichloro methane (µg/L)	Bromoform (µg/L)	Bromomethane (Methyl bromide) (µg/L)	2-Butanone (Methyl ethyl ketone) (MEK) (ug/L)	N-Butylbenzene (µg/L)	sec-Butylbenzene (2-Phenylbutane) (ug/L)	tert-Butylbenzene (µg/L)	Carbon disulfide (µg/L)	Carbon tetrachloride (µg/L)	Chlorobenzene (µg/L)	Chloroethane (µg/L)
New Mexico Standards for Groundwater [1]				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
GW-074922-121012-CM-MW-1-Z3	MW-1	C	12/10/2012	< 1.0	< 1.0	< 5.0	15.5	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-022813-CM-MW-1-Z3	MW-1	C	2/28/2013	< 1.0	< 1.0	< 5.0	609	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-032213-CM-MW-1-Z3	MW-1	C	3/22/2013	< 1.0	< 1.0	< 5.0	489	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z3	MW-1	C	6/18/2013	< 1.0	< 1.0	< 5.0	576	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-100213-CM-MW-1-Z3	MW-1	C	10/2/2013	< 1.0	< 1.0	< 5.0	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-120613-CM-MW-1-Z3	MW-1	C	12/6/2013	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z3	MW-1	C	2/18/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-1-Z3	MW-1	C	4/16/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z3	MW-1	C	6/24/2014											
GW-074922-081914-CM-MW-1-Z3	MW-1	C	8/19/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z3	MW-1	C	10/21/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-1-Z3	MW-1	C	12/3/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1-Z2	MW-1	D	12/10/2012	< 5.0	< 5.0	< 25.0	1,020	< 5.0	< 5.0	< 5.0	< 25.0	< 5.0	< 5.0	< 5.0
GW-074922-022813-CM-MW-1-Z2	MW-1	D	2/28/2013	< 5.0	< 5.0	< 25.0	1,290	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
GW-074922-032213-CM-MW-1-Z2	MW-1	D	3/22/2013	< 1.0	< 1.0	< 5.0	651	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z2	MW-1	D	6/18/2013	< 1.0	< 1.0	< 5.0	46.6	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z2	MW-1	D	9/26/2013	< 1.0	< 1.0	< 5.0	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-120613-CM-MW-1-Z2	MW-1	D	12/6/2013	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z2	MW-1	D	2/18/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z2	MW-1	D	4/15/2014	--	--	--	--	--	--	--				
GW-074922-062414-CM-MW-1-Z2	MW-1	D	6/24/2014	--	--	--	--	--	--	--				
GW-074922-081914-CM-MW-1-Z2	MW-1	D	8/19/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z2	MW-1	D	10/21/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z2	MW-1	D	12/2/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1- DUP	MW-1	G	12/10/2012	< 5.0	< 5.0	< 25.0	1,170	< 5.0	< 5.0	< 5.0	< 25.0	< 5.0	< 5.0	< 5.0
GW-074922-121012-CM-MW-1-Z1	MW-1	G	12/10/2012	< 1.0	< 1.0	< 5.0	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-022813-CM-MW-1-DUP	MW-1	G	2/28/2013	< 5.0	< 5.0	< 25.0	1,130	< 5.0	< 5.0	< 5.0	< 25.0	< 5.0	< 5.0	< 5.0
GW-074922-022813-CM-MW-1-Z1	MW-1	G	2/28/2013	< 1.0	< 1.0	< 5.0	65.8	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-032213-CM-MW-1-DUP	MW-1	G	3/22/2013	< 5.0	< 5.0	< 25.0	646	< 5.0	< 5.0	< 5.0	< 25.0	< 5.0	< 5.0	< 5.0
GW-074922-032213-CM-MW-1-Z1	MW-1	G	3/22/2013	< 1.0	< 1.0	< 5.0	47.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z1	MW-1	G	6/18/2013	< 1.0	< 1.0	< 5.0	118	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-DUP	MW-1	G	6/18/2013	< 1.0	< 1.0	< 5.0	46.3	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z1	MW-1	G	9/26/2013	< 1.0	< 1.0	< 5.0	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-DUP	MW-1	G	9/26/2013	< 1.0	< 1.0	< 5.0	< 10.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
GW-074922-120513-CM-MW-1-Z1	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-DUP	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-1-Z1	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-DUP	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z1	MW-1	G	4/15/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-DUP	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--	--

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
CONCOPHILLIPS COMPANY
SAN JUAN 32-30 NO. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Volatile Organics											
				Bromodichloro methane (µg/L)	Bromoform (µg/L)	Bromomethane (Methyl bromide) (µg/L)	2-Butanone (Methyl ethyl ketone) (MEK) (ug/L)	N-Butylbenzene (µg/L)	sec-Butylbenzene (2-Phenylbutane) (ug/L)	tert-Butylbenzene (µg/L)	Carbon disulfide (µg/L)	Carbon tetrachloride (µg/L)	Chlorobenzene (µg/L)	Chloroethane (µg/L)
New Mexico Standards for Groundwater [1]				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
GW-074922-062414-CM-MW-1-Z1	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-1-Z1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-DUP-1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z1	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-DUP	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z1	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-DUP	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z2	MW-2	A	12/3/2013	--	--	--	--	--	--	--	--	--	--	--
GW-074922-062314-CM-MW-2-Z2	MW-2	A	6/23/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z1	MW-2	C	12/3/2013	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-2-Z1	MW-2	C	2/19/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-2-Z1	MW-2	C	4/14/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-081814-CM-MW-2-Z1	MW-2	C	8/18/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-102014-CM-MW-2-Z1	MW-2	C	10/20/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120114-CM-MW-2-Z1	MW-2	C	12/1/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-MW-3-Z2	MW-3	D	12/5/2013	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-BJ-MW-3-Z2	MW-3	D	2/19/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-3-Z2	MW-3	D	4/14/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-3-Z2	MW-3	D	6/25/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-3-Z2	MW-3	D	8/19/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-3-Z2	MW-3	D	10/21/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-3-Z2	MW-3	D	12/2/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120413-CM-MW-4-Z2	MW-4	D	12/4/2013	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z2	MW-4	D	2/18/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z2	MW-4	D	4/16/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-062614-CM-MW-4-Z2	MW-4	D	6/26/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z2	MW-4	D	8/20/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z2	MW-4	D	10/22/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z2	MW-4	D	12/3/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-4-Z1	MW-4	E	12/3/2013	--	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z1	MW-4	E	2/18/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z1	MW-4	E	4/16/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-4-Z1	MW-4	E	6/25/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z1	MW-4	E	8/20/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z1	MW-4	E	10/22/2014	--	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z1	MW-4	E	12/3/2014	--	--	--	--	--	--	--	--	--	--	--

Notes:
[1] Criteria parameters and limits are listed in NMAC 20.6.2.3103 [NMAC Title 20, Chapter 6, Part 2, Section 3103: Human Health Standards for Groundwater of 10,000 mg/L TDS Concentration or Less].
[2] Additional NMAC 20.6.2.3103 limit for domestic water supply
(3) -- Indicates not analyzed
[4] Shaded bold results indicate exceedance limits listed in NMAC 20.6.2.3103.
[5] Sulfide analysis was conducted after hold time expired
[6] GW indicates Groundwater Sample
[7] < 1.0 Below laboratory detection limit
[8] NE indicates "Not Established'
[9] DUP indicates Duplicate Sample
mg/L = milligrams per liter
µg/L = micrograms per liter
cc/L = cubic centimeters

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Sample ID	Well	Zone	Date Sampled	Volatile Organics									
				Chloroform (Trichloromethane) (µg/L)	Methyl chloride (Chloromethane) (µg/L)	2-Chlorotoluene (µg/L)	4-Chlorotoluene (µg/L)	1,2-Dibromo-3-chloropropane (DBCP) (µg/L)	Dibromochloromethane (µg/L)	1,2-Dibromoethane (Ethylene dibromide) (µg/L)	Dibromo methane (µg/L)	1,2-Dichlorobenzene (µg/L)	1,3-Dichlorobenzene (µg/L)
New Mexico Standards for Groundwater [1]				*100*	*NE*	*NE*	*NE*	*NE*	*NE*	*0.1*	*NE*	*NE*	*NE*
GW-074922-121012-CM-MW-1-Z3	MW-1	C	12/10/2012	5.6	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-022813-CM-MW-1-Z3	MW-1	C	2/28/2013	1.8	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-032213-CM-MW-1-Z3	MW-1	C	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z3	MW-1	C	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-100213-CM-MW-1-Z3	MW-1	C	10/2/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-120613-CM-MW-[illegible]-Z3	MW-1	C	12/6/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z3	MW-1	C	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-1-Z3	MW-1	C	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z3	MW-1	C	6/24/2014						--	--	--	--	--
GW-074922-081914-CM-MW-1-Z3	MW-1	C	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z3	MW-1	C	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-1-Z3	MW-1	C	12/3/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1-Z2	MW-1	D	12/10/2012	8.5	< 5.0	< 5.0	< 5.0	< 12.5	< 5.0	**< 5.0**	< 5.0	< 5.0	< 5.0
GW-074922-022813-CM-MW-1-Z2	MW-1	D	2/28/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 12.5	< 5.0	**< 5.0**	< 5.0	< 5.0	< 5.0
GW-074922-032213-CM-MW-1-Z2	MW-1	D	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z2	MW-1	D	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z2	MW-1	D	9/26/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-120613-CM-MW-[illegible]-Z2	MW-1	D	12/6/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z2	MW-1	D	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z2	MW-1	D	4/15/2014										
GW-074922-062414-CM-MW-1-Z2	MW-1	D	6/24/2014										
GW-074922-081914-CM-MW-1-Z2	MW-1	D	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z2	MW-1	D	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z2	MW-1	D	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1- DUP	MW-1	G	12/10/2012	20.4	< 5.0	< 5.0	< 5.0	< 12.5	< 5.0	**< 5.0**	< 5.0	< 5.0	< 5.0
GW-074922-121012-CM-MW-1-Z1	MW-1	G	12/10/2012	4.5	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-022813-CM-MW-1-DUP	MW-1	G	2/28/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 12.5	< 5.0	**< 5.0**	< 5.0	< 5.0	< 5.0
GW-074922-022813-CM-MW-1-Z1	MW-1	G	2/28/2013	5.9	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-032213-CM-MW-1-DUP	MW-1	G	3/22/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 12.5	< 5.0	**< 5.0**	< 5.0	< 5.0	< 5.0
GW-074922-032213-CM-MW-1-Z1	MW-1	G	3/22/2013	3.5	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z1	MW-1	G	6/18/2013	1.3	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-DUP	MW-1	G	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z1	MW-1	G	9/26/2013	1.7	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-DUP	MW-1	G	9/26/2013	1.4	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	**< 1.0**	< 1.0	< 1.0	< 1.0
GW-074922-120513-CM-MW-[illegible]-Z1	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-DUP	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-1-Z1	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-DUP	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z1	MW-1	G	4/15/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-DUP	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
CONCOPHILLIPS COMPANY
SAN JUAN 32-30 NO. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Volatile Organics									
				Chloroform (Trichloromethane) (µg/L)	Methyl chloride (Chloromethane) (µg/L)	2-Chlorotoluene (µg/L)	4-Chlorotoluene (µg/L)	1,2-Dibromo-3-chloropropane (DBCP) (µg/L)	Dibromochloromethane (µg/L)	1,2-Dibromoethane (Ethylene dibromide) (µg/L)	Dibromo methane (µg/L)	1,2-Dichlorobenzene (µg/L)	1,3-Dichlorobenzene (µg/L)
New Mexico Standards for Groundwater [1]				100	NE	NE	NE	NE	NE	0.1	NE	NE	NE
GW-074922-062414-CM-MW-1-Z1	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-1-Z1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-DUP-1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z1	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-DUP	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z1	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-DUP	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z2	MW-2	A	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-062314-CM-MW-2-Z2	MW-2	A	6/23/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z1	MW-2	C	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-2-Z1	MW-2	C	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-2-Z1	MW-2	C	4/14/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081814-CM-MW-2-Z1	MW-2	C	8/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102014-CM-MW-2-Z1	MW-2	C	10/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120114-CM-MW-2-Z1	MW-2	C	12/1/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-MW-3-Z2	MW-3	D	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-BJ-MW-3-Z2	MW-3	D	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-3-Z2	MW-3	D	4/14/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-3-Z2	MW-3	D	6/25/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-3-Z2	MW-3	D	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-3-Z2	MW-3	D	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-3-Z2	MW-3	D	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120413-CM-MW-4-Z2	MW-4	D	12/4/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z2	MW-4	D	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z2	MW-4	D	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062614-CM-MW-4-Z2	MW-4	D	6/26/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z2	MW-4	D	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z2	MW-4	D	10/22/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z2	MW-4	D	12/3/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-4-Z1	MW-4	E	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z1	MW-4	E	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z1	MW-4	E	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-4-Z1	MW-4	E	6/25/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z1	MW-4	E	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z1	MW-4	E	10/22/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z1	MW-4	E	12/3/2014	--	--	--	--	--	--	--	--	--	--

Notes:
[1] Criteria parameters and limits are listed in NMAC 20.6.2.3103 [NMAC Title 20, Chapter 6, Part 2, Section 3103: Human Health Standards for Groundwater of 10,000 mg/L TDS Concentration or Less].
[2] Additional NMAC 20.6.2.3103 limit for domestic water supply
(3) -- Indicates not analyzed
[4] Shaded bold results indicate exceedance limits listed in NMAC 20.6.2.3103.
[5] Sulfide analysis was conducted after hold time expired
[6] GW indicates Groundwater Sample
[7] < 1.0 Below laboratory detection limit
[8] NE indicates "Not Established'
[9] DUP indicates Duplicate Sample
mg/L = milligrams per liter
µg/L = micrograms per liter
cc/L = cubic centimeters

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
CONCOPHILLIPS COMPANY
SAN JUAN 32-30 NO. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Volatile Organics									
				1,4-Dichlorobenzene (µg/L)	Dichlorodi fluoromethane (CFC-12) (µg/L)	1,1-Dichloroethane (µg/L)	1,2-Dichloroethane (µg/L)	1,2-Dichloroethene (total) (µg/L)	1,1-Dichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)	trans-1,2-Dichloro ethene (µg/L)	1,2-Dichloropropane (µg/L)	1,3-Dichloropropane (µg/L)
New Mexico Standards for Groundwater [1]				NE	NE	25	10	NE	5	NE	NE	NE	NE
GW-074922-121012-CM-MW-1-Z3	MW-1	C	12/10/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-022813-CM-MW-1-Z3	MW-1	C	2/28/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-032213-CM-MW-1-Z3	MW-1	C	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z3	MW-1	C	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-100213-CM-MW-1-Z3	MW-1	C	10/2/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-120613-CM-MW-[illegible]-Z3	MW-1	C	12/6/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z3	MW-1	C	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-1-Z3	MW-1	C	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z3	MW-1	C	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-1-Z3	MW-1	C	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z3	MW-1	C	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-1-Z3	MW-1	C	12/3/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1-Z2	MW-1	D	12/10/2012	< 5.0	< 5.0	< 0.50	< 5.0	< 5.0	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0
GW-074922-022813-CM-MW-1-Z2	MW-1	D	2/28/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 5.0	< 5.0	< 5.0	< 5.0
GW-074922-032213-CM-MW-1-Z2	MW-1	D	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z2	MW-1	D	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z2	MW-1	D	9/26/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-120613-CM-MW-[illegible]-Z2	MW-1	D	12/6/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z2	MW-1	D	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z2	MW-1	D	4/15/2014										
GW-074922-062414-CM-MW-1-Z2	MW-1	D	6/24/2014										
GW-074922-081914-CM-MW-1-Z2	MW-1	D	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z2	MW-1	D	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z2	MW-1	D	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1- DUP	MW-1	G	12/10/2012	< 5.0	< 5.0	< 0.50	< 5.0	< 5.0	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0
GW-074922-121012-CM-MW-1-Z1	MW-1	G	12/10/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-022813-CM-MW-1-DUP	MW-1	G	2/28/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 5.0	< 5.0	< 5.0	< 5.0
GW-074922-022813-CM-MW-1-Z1	MW-1	G	2/28/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-032213-CM-MW-1-DUP	MW-1	G	3/22/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	**< 5.0**	< 5.0	< 5.0	< 5.0	< 5.0
GW-074922-032213-CM-MW-1-Z1	MW-1	G	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z1	MW-1	G	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-DUP	MW-1	G	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z1	MW-1	G	9/26/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-DUP	MW-1	G	9/26/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-120513-CM-MW-[illegible]-Z1	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-DUP	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-1-Z1	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-DUP	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z1	MW-1	G	4/15/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-DUP	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
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Sample ID	Well	Zone	Date Sampled	Volatile Organics									
				1,4-Dichlorobenzene (µg/L)	Dichlorodi fluoromethane (CFC-12) (µg/L)	1,1-Dichloroethane (µg/L)	1,2-Dichloroethane (µg/L)	1,2-Dichloroethene (total) (µg/L)	1,1-Dichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)	trans-1,2-Dichloro ethene (µg/L)	1,2-Dichloropropane (µg/L)	1,3-Dichloropropane (µg/L)
New Mexico Standards for Groundwater [1]				NE	NE	25	10	NE	5	NE	NE	NE	NE
GW-074922-062414-CM-MW-1-Z1	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-1-Z1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-DUP-1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z1	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-DUP	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z1	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-DUP	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z2	MW-2	A	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-062314-CM-MW-2-Z2	MW-2	A	6/23/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z1	MW-2	C	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-2-Z1	MW-2	C	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-2-Z1	MW-2	C	4/14/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081814-CM-MW-2-Z1	MW-2	C	8/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102014-CM-MW-2-Z1	MW-2	C	10/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120114-CM-MW-2-Z1	MW-2	C	12/1/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-MW-3-Z2	MW-3	D	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-BJ-MW-3-Z2	MW-3	D	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-3-Z2	MW-3	D	4/14/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-3-Z2	MW-3	D	6/25/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-3-Z2	MW-3	D	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-3-Z2	MW-3	D	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-3-Z2	MW-3	D	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120413-CM-MW-4-Z2	MW-4	D	12/4/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z2	MW-4	D	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z2	MW-4	D	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062614-CM-MW-4-Z2	MW-4	D	6/26/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z2	MW-4	D	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z2	MW-4	D	10/22/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z2	MW-4	D	12/3/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-4-Z1	MW-4	E	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z1	MW-4	E	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z1	MW-4	E	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-4-Z1	MW-4	E	6/25/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z1	MW-4	E	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z1	MW-4	E	10/22/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z1	MW-4	E	12/3/2014	--	--	--	--	--	--	--	--	--	--

Notes:
[1] Criteria parameters and limits are listed in NMAC 20.6.2.3103 [NMAC Title 20, Chapter 6, Part 2, Section 3103: Human Health Standards for Groundwater of 10,000 mg/L TDS Concentration or Less].
[2] Additional NMAC 20.6.2.3103 limit for domestic water supply
[3] -- Indicates not analyzed
[4] Shaded bold results indicate exceedance limits listed in NMAC 20.6.2.3103.
[5] Sulfide analysis was conducted after hold time expired
[6] GW indicates Groundwater Sample
[7] < 1.0 Below laboratory detection limit
[8] NE indicates "Not Established'
[9] DUP indicates Duplicate Sample
mg/L = milligrams per liter
µg/L = micrograms per liter
cc/L = cubic centimeters

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
CONCOPHILLIPS COMPANY
SAN JUAN 32-30 NO. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Volatile Organics									
				2,2-Dichloropropane (µg/L)	1,1-Dichloropropene (µg/L)	cis-1,3-Dichloropropene (µg/L)	trans-1,3-Dichloropropene (µg/L)	Ethylbenzene (µg/L)	Hexachloro-1,3-butadiene (ug/L)	2-Hexanone (µg/L)	Isopropyl benzene (µg/L)	p-Isopropyl toluene (Cymene) (µg/L)	Methylene Chloride (µg/L)
New Mexico Standards for Groundwater [1]				*NE*	*NE*	*NE*	*NE*	*750*	*NE*	*NE*	*NE*	*NE*	*100*
GW-074922-121012-CM-MW-1-Z3	MW-1	C	12/10/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	3.1
GW-074922-022813-CM-MW-1-Z3	MW-1	C	2/28/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	14.3
GW-074922-032213-CM-MW-1-Z3	MW-1	C	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	28.1
GW-074922-061813-CM-MW-1-Z3	MW-1	C	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	15.4
GW-074922-100213-CM-MW-1-Z3	MW-1	C	10/2/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0
GW-074922-120613-CM-MW-1-Z3	MW-1	C	12/6/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z3	MW-1	C	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-1-Z3	MW-1	C	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z3	MW-1	C	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-1-Z3	MW-1	C	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z3	MW-1	C	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-1-Z3	MW-1	C	12/3/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1-Z2	MW-1	D	12/10/2012	< 5.0	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
GW-074922-022813-CM-MW-1-Z2	MW-1	D	2/28/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50.0	< 5.0	< 5.0	48.2
GW-074922-032213-CM-MW-1-Z2	MW-1	D	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	6.4
GW-074922-061813-CM-MW-1-Z2	MW-1	D	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z2	MW-1	D	9/26/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0
GW-074922-120613-CM-MW-1-Z2	MW-1	D	12/6/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z2	MW-1	D	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z2	MW-1	D	4/15/2014					--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z2	MW-1	D	6/24/2014					--	--	--	--	--	--
GW-074922-081914-CM-MW-1-Z2	MW-1	D	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z2	MW-1	D	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z2	MW-1	D	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1- DUP	MW-1	G	12/10/2012	< 5.0	< 0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 50.0	< 5.0	< 5.0	8.5
GW-074922-121012-CM-MW-1-Z1	MW-1	G	12/10/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	3.6
GW-074922-022813-CM-MW-1-DUP	MW-1	G	2/28/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50.0	< 5.0	< 5.0	7.7
GW-074922-022813-CM-MW-1-Z1	MW-1	G	2/28/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	4.5
GW-074922-032213-CM-MW-1-DUP	MW-1	G	3/22/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 50.0	< 5.0	< 5.0	17.2
GW-074922-032213-CM-MW-1-Z1	MW-1	G	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	20.2
GW-074922-061813-CM-MW-1-Z1	MW-1	G	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	20.2
GW-074922-061813-CM-MW-1-DUP	MW-1	G	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z1	MW-1	G	9/26/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-DUP	MW-1	G	9/26/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0
GW-074922-120513-CM-MW-1-Z1	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-DUP	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-1-Z1	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-DUP	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z1	MW-1	G	4/15/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-DUP	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
CONCOPHILLIPS COMPANY
SAN JUAN 32-30 NO. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Volatile Organics									
				2,2-Dichloropropane (µg/L)	1,1-Dichloropropene (µg/L)	cis-1,3-Dichloropropene (µg/L)	trans-1,3-Dichloropropene (µg/L)	Ethylbenzene (µg/L)	Hexachloro-1,3-butadiene (ug/L)	2-Hexanone (µg/L)	Isopropyl benzene (µg/L)	p-Isopropyl toluene (Cymene) (µg/L)	Methylene Chloride (µg/L)
New Mexico Standards for Groundwater [1]				NE	NE	NE	NE	750	NE	NE	NE	NE	100
GW-074922-062414-CM-MW-1-Z1	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-1-Z1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-DUP-1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z1	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-DUP	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z1	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-DUP	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z2	MW-2	A	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-062314-CM-MW-2-Z2	MW-2	A	6/23/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z1	MW-2	C	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-2-Z1	MW-2	C	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-2-Z1	MW-2	C	4/14/2014	--	--	--	--	--	--	-	--	--	--
GW-074922-081814-CM-MW-2-Z1	MW-2	C	8/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102014-CM-MW-2-Z1	MW-2	C	10/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120114-CM-MW-2-Z1	MW-2	C	12/1/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-MW-3-Z2	MW-3	D	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-BJ-MW-3-Z2	MW-3	D	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-3-Z2	MW-3	D	4/14/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-3-Z2	MW-3	D	6/25/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-3-Z2	MW-3	D	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-3-Z2	MW-3	D	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-3-Z2	MW-3	D	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120413-CM-MW-4-Z2	MW-4	D	12/4/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z2	MW-4	D	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z2	MW-4	D	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062614-CM-MW-4-Z2	MW-4	D	6/26/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z2	MW-4	D	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z2	MW-4	D	10/22/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z2	MW-4	D	12/3/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-4-Z1	MW-4	E	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z1	MW-4	E	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z1	MW-4	E	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-4-Z1	MW-4	E	6/25/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z1	MW-4	E	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z1	MW-4	E	10/22/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z1	MW-4	E	12/3/2014	--	--	--	--	--	--	--	--	--	--

Notes:
[1] Criteria parameters and limits are listed in NMAC 20.6.2.3103 [NMAC Title 20, Chapter 6, Part 2, Section 3103: Human Health Standards for Groundwater of 10,000 mg/L TDS Concentration or Less].
[2] Additional NMAC 20.6.2.3103 limit for domestic water supply
[3] -- Indicates not analyzed
[4] Shaded bold results indicate exceedance limits listed in NMAC 20.6.2.3103.
[5] Sulfide analysis was conducted after hold time expired
[6] GW indicates Groundwater Sample
[7] < 1.0 Below laboratory detection limit
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[9] DUP indicates Duplicate Sample
mg/L = milligrams per liter
µg/L = micrograms per liter
cc/L = cubic centimeters

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Sample ID	Well	Zone	Date Sampled	Volatile Organics									
				4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK) (µg/L)	Methyl tert butyl ether (MTBE) (µg/L)	Naphthalene (µg/L)	N-Propylbenzene (µg/L)	Styrene (µg/L)	1,1,1,2-Tetrachloroethane (µg/L)	1,1,2,2-Tetrachloroethane (µg/L)	Tetrachloroethene (µg/L)	Toluene (µg/L)	1,2,3-Trichlorobenzene (µg/L)
New Mexico Standards for Groundwater [1]				NE	NE	30	NE	NE	NE	10	NE	750	NE
GW-074922-121012-CM-MW-1-Z3	MW-1	C	12/10/2012	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-022813-CM-MW-1-Z3	MW-1	C	2/28/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0
GW-074922-032213-CM-MW-1-Z3	MW-1	C	3/22/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.7	< 1.0
GW-074922-061813-CM-MW-1-Z3	MW-1	C	6/18/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.7	< 1.0
GW-074922-100213-CM-MW-1-Z3	MW-1	C	10/2/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.0	< 1.0
GW-074922-120613-CM-MW-[illegible]-Z3	MW-1	C	12/6/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z3	MW-1	C	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-1-Z3	MW-1	C	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z3	MW-1	C	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-1-Z3	MW-1	C	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z3	MW-1	C	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-1-Z3	MW-1	C	12/3/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1-Z2	MW-1	D	12/10/2012	< 50.0	< 5.0	**<50.0**	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	< 0.50
GW-074922-022813-CM-MW-1-Z2	MW-1	D	2/28/2013	< 50.0	< 5.0	**< 50.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
GW-074922-032213-CM-MW-1-Z2	MW-1	D	3/22/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z2	MW-1	D	6/18/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z2	MW-1	D	9/26/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.3	< 1.0
GW-074922-120613-CM-MW-[illegible]-Z2	MW-1	D	12/6/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z2	MW-1	D	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z2	MW-1	D	4/15/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z2	MW-1	D	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-1-Z2	MW-1	D	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z2	MW-1	D	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z2	MW-1	D	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1- DUP	MW-1	G	12/10/2012	< 50.0	< 5.0	**< 50.0**	< 5.0	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	< 0.50
GW-074922-121012-CM-MW-1-Z1	MW-1	G	12/10/2012	< 10.0	< 1.0	**< 50.0**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0
GW-074922-022813-CM-MW-1-DUP	MW-1	G	2/28/2013	< 50.0	< 5.0	**< 50.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
GW-074922-022813-CM-MW-1-Z1	MW-1	G	2/28/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-032213-CM-MW-1-DUP	MW-1	G	3/22/2013	< 50.0	< 5.0	**< 50.0**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
GW-074922-032213-CM-MW-1-Z1	MW-1	G	3/22/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-Z1	MW-1	G	6/18/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-061813-CM-MW-1-DUP	MW-1	G	6/18/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
GW-074922-092613-CM-MW-1-Z1	MW-1	G	9/26/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.0	< 1.0
GW-074922-092613-CM-MW-1-DUP	MW-1	G	9/26/2013	< 10.0	< 1.0	< 10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.9	< 1.0
GW-074922-120513-CM-MW-[illegible]-Z1	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-DUP	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-1-Z1	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-DUP	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z1	MW-1	G	4/15/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-DUP	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
CONCOPHILLIPS COMPANY
SAN JUAN 32-30 NO. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Volatile Organics									
				4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK) (µg/L)	Methyl tert butyl ether (MTBE) (µg/L)	Naphthalene (µg/L)	N-Propylbenzene (µg/L)	Styrene (µg/L)	1,1,1,2-Tetrachloroethane (µg/L)	1,1,2,2-Tetrachloroethane (µg/L)	Tetrachloroethene (µg/L)	Toluene (µg/L)	1,2,3-Trichlorobenzene (µg/L)
New Mexico Standards for Groundwater [1]				NE	NE	30	NE	NE	NE	10	NE	750	NE
GW-074922-062414-CM-MW-1-Z1	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-1-Z1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-DUP-1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z1	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-DUP	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z1	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-DUP	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z2	MW-2	A	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-062314-CM-MW-2-Z2	MW-2	A	6/23/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z1	MW-2	C	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-2-Z1	MW-2	C	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-2-Z1	MW-2	C	4/14/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081814-CM-MW-2-Z1	MW-2	C	8/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102014-CM-MW-2-Z1	MW-2	C	10/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120114-CM-MW-2-Z1	MW-2	C	12/1/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-MW-3-Z2	MW-3	D	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-BJ-MW-3-Z2	MW-3	D	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-3-Z2	MW-3	D	4/14/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-3-Z2	MW-3	D	6/25/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-3-Z2	MW-3	D	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-3-Z2	MW-3	D	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-3-Z2	MW-3	D	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120413-CM-MW-4-Z2	MW-4	D	12/4/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z2	MW-4	D	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z2	MW-4	D	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062614-CM-MW-4-Z2	MW-4	D	6/26/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z2	MW-4	D	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z2	MW-4	D	10/22/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z2	MW-4	D	12/3/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-4-Z1	MW-4	E	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z1	MW-4	E	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z1	MW-4	E	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-4-Z1	MW-4	E	6/25/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z1	MW-4	E	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z1	MW-4	E	10/22/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z1	MW-4	E	12/3/2014	--	--	--	--	--	--	--	--	--	--

Notes:
[1] Criteria parameters and limits are listed in NMAC 20.6.2.3103 [NMAC Title 20, Chapter 6, Part 2, Section 3103: Human Health Standards for Groundwater of 10,000 mg/L TDS Concentration or Less].
[2] Additional NMAC 20.6.2.3103 limit for domestic water supply
[3] -- Indicates not analyzed
[4] Shaded bold results indicate exceedance limits listed in NMAC 20.6.2.3103.
[5] Sulfide analysis was conducted after hold time expired
[6] GW indicates Groundwater Sample
[7] < 1.0 Below laboratory detection limit
[8] NE indicates "Not Established'
[9] DUP indicates Duplicate Sample
mg/L = milligrams per liter
µg/L = micrograms per liter
cc/L = cubic centimeters

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
CONCOPHILLIPS COMPANY
SAN JUAN 32-30 NO. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Volatile Organics									
				1,2,4-Trichlorobenzene (µg/L)	1,1,1-Trichloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	Trichloroethene (µg/L)	Trichlorofluoromethane (CFC-11) (µg/L)	1,2,3-Trichloro propane (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,3,5-Trimethylbenzene (µg/L)	Vinyl chloride (µg/L)	Xylenes, total (µg/L)
New Mexico Standards for Groundwater [1]				NE	60	10	NE	NE	NE	NE	NE	1	620
GW-074922-121012-CM-MW-1-Z3	MW-1	C	12/10/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-022813-CM-MW-1-Z3	MW-1	C	2/28/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-032213-CM-MW-1-Z3	MW-1	C	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-061813-CM-MW-1-Z3	MW-1	C	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-100213-CM-MW-1-Z3	MW-1	C	10/2/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-120613-CM-MW-□-Z3	MW-1	C	12/6/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z3	MW-1	C	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-1-Z3	MW-1	C	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z3	MW-1	C	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-1-Z3	MW-1	C	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z3	MW-1	C	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-1-Z3	MW-1	C	12/3/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1-Z2	MW-1	D	12/10/2012	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	< 12.5	< 5.0	< 5.0	**< 5.0**	< 15.0
GW-074922-022813-CM-MW-1-Z2	MW-1	D	2/28/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 12.5	< 5.0	< 5.0	**< 5.0**	< 15.0
GW-074922-032213-CM-MW-1-Z2	MW-1	D	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 3.0
GW-074922-061813-CM-MW-1-Z2	MW-1	D	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 3.0
GW-074922-092613-CM-MW-1-Z2	MW-1	D	9/26/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	< 1.0	< 3.0
GW-074922-120613-CM-MW-□-Z2	MW-1	D	12/6/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-CM-MW-1-Z2	MW-1	D	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z2	MW-1	D	4/15/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-MW-1-Z2	MW-1	D	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-1-Z2	MW-1	D	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z2	MW-1	D	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z2	MW-1	D	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-121012-CM-MW-1- DUP	MW-1	G	12/10/2012	< 5.0	< 0.50	< 0.50	< 5.0	< 5.0	< 12.5	< 5.0	< 5.0	**< 5.0**	< 15.0
GW-074922-121012-CM-MW-1-Z1	MW-1	G	12/10/2012	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-022813-CM-MW-1-DUP	MW-1	G	2/28/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 12.5	< 5.0	< 5.0	**< 5.0**	< 15.0
GW-074922-022813-CM-MW-1-Z1	MW-1	G	2/28/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-032213-CM-MW-1-DUP	MW-1	G	3/22/2013	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 12.5	< 5.0	< 5.0	**< 5.0**	< 15.0
GW-074922-032213-CM-MW-1-Z1	MW-1	G	3/22/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-061813-CM-MW-1-Z1	MW-1	G	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-061813-CM-MW-1-DUP	MW-1	G	6/18/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-092613-CM-MW-1-Z1	MW-1	G	9/26/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-092613-CM-MW-1-DUP	MW-1	G	9/26/2013	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.5	< 1.0	< 1.0	**< 1.0**	< 3.0
GW-074922-120513-CM-MW-□-Z1	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-DUP	MW-1	G	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-1-Z1	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-DUP	MW-1	G	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041514-WM-MW-1-Z1	MW-1	G	4/15/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062414-CM-DUP	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--

GROUNDWATER HYDROCARBON ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012- DECEMBER 2014
CONCOPHILLIPS COMPANY
SAN JUAN 32-30 NO. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Volatile Organics									
				1,2,4-Trichlorobenzene (µg/L)	1,1,1-Trichloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	Trichloroethene (µg/L)	Trichlorofluoromethane (CFC-11) (µg/L)	1,2,3-Trichloro propane (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,3,5-Trimethylbenzene (µg/L)	Vinyl chloride (µg/L)	Xylenes, total (µg/L)
New Mexico Standards for Groundwater [1]				NE	60	10	NE	NE	NE	NE	NE	1	620
GW-074922-062414-CM-MW-1-Z1	MW-1	G	6/24/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-1-Z1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-DUP-1	MW-1	G	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-1-Z1	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-DUP	MW-1	G	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-1-Z1	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-DUP	MW-1	G	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z2	MW-2	A	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-062314-CM-MW-2-Z2	MW-2	A	6/23/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-2-Z1	MW-2	C	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-CM-MW-2-Z1	MW-2	C	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-2-Z1	MW-2	C	4/14/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081814-CM-MW-2-Z1	MW-2	C	8/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102014-CM-MW-2-Z1	MW-2	C	10/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120114-CM-MW-2-Z1	MW-2	C	12/1/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120513-CM-MW-3-Z2	MW-3	D	12/5/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021914-BJ-MW-3-Z2	MW-3	D	2/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041414-CM-MW-3-Z2	MW-3	D	4/14/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-3-Z2	MW-3	D	6/25/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-081914-CM-MW-3-Z2	MW-3	D	8/19/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102114-CM-MW-3-Z2	MW-3	D	10/21/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120214-CM-MW-3-Z2	MW-3	D	12/2/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120413-CM-MW-4-Z2	MW-4	D	12/4/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z2	MW-4	D	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z2	MW-4	D	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062614-CM-MW-4-Z2	MW-4	D	6/26/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z2	MW-4	D	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z2	MW-4	D	10/22/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z2	MW-4	D	12/3/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120313-CM-MW-4-Z1	MW-4	E	12/3/2013	--	--	--	--	--	--	--	--	--	--
GW-074922-021814-BJ-MW-4-Z1	MW-4	E	2/18/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-041614-CM-MW-4-Z1	MW-4	E	4/16/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-062514-CM-MW-4-Z1	MW-4	E	6/25/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-082014-CM-MW-4-Z1	MW-4	E	8/20/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-102214-CM-MW-4-Z1	MW-4	E	10/22/2014	--	--	--	--	--	--	--	--	--	--
GW-074922-120314-CM-MW-4-Z1	MW-4	E	12/3/2014	--	--	--	--	--	--	--	--	--	--

Notes:
[1] Criteria parameters and limits are listed in NMAC 20.6.2.3103 [NMAC Title 20, Chapter 6, Part 2, Section 3103: Human Health Standards for Groundwater of 10,000 mg/L TDS Concentration or Less].
[2] Additional NMAC 20.6.2.3103 limit for domestic water supply
[3] -- Indicates not analyzed
[4] Shaded bold results indicate exceedance limits listed in NMAC 20.6.2.3103.
[5] Sulfide analysis was conducted after hold time expired
[6] GW indicates Groundwater Sample
[7] < 1.0 Below laboratory detection limit
[8] NE indicates "Not Established'
[9] DUP indicates Duplicate Sample
mg/L = milligrams per liter
µg/L = micrograms per liter
cc/L = cubic centimeters

TABLE 6B

GROUNDWATER GEOCHEMICAL ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012 - AUGUST 2014
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Alkalinity		Sulfide		Anions				Dissolved Metals						
				Total Alkalinity as $CaCO_3$ (mg/L)	Total Dissolved Solids (TDS) (mg/L)	Sulfide Total (mg/L)[5]	Sulfide Dissolved (mg/L)	Bromide (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Barium, Dissolved (mg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Strontium, Dissolved (mg/L)
New Mexico Standards for Groundwater[1]				NE	1000[2]	NE	NE	NE	250.0[2]	NE	600[2]	NE	0.075[2]	NE	NE	NE	NE	NE
GW-074922-121012-CM-MW-1-Z3	MW-1	C	12/10/2012	294	**2,420**	8.8	--	1.1	140	--	**1,040**	--	--	--	--	--	--	--
GW-074922-121112-CM-MW-1-Z3	MW-1	C	12/11/2012	--	--	--	--	--	--	--	--	--	**0.144**	189	6.81	13.90	473	--
GW-074922-022813-CM-MW-1-Z3	MW-1	C	2/28/2013	746	**3,110**	2.5	--	< 1.0	143	--	**864**	--	**0.170**	332	10.80	18.20	608	--
GW-074922-032213-CM-MW-1-Z3	MW-1	C	3/22/2013	931	**2,840**	0.090	--	1.9	140	--	**628**	--	**0.157**	330	10.30	17.10	576	--
GW-074922-032213-CM-MW-1-DUP	MW-1	C	3/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-061813-CM-MW-1-Z3	MW-1	C	6/18/2013	1420	**2,560**	2.1	--	4.5	165	--	145	--	**0.141**	233	7.16	13.80	576	--
GW-074922-100213-CM-MW-1-Z3	MW-1	C	10/2/2013	1,290	**2,770**	5.7	3.4	< 1.0	186	0.59	593	--	**0.150**	295	9.32	14.20	635	--
GW-074922-120613-CM-MW-[illegible]-Z3	MW-1	C	12/6/2013	1,240	**3,370**	5.1	--	< 1.0	160	--	**836**	0.188	**0.141**	317	9.54	15.00	674	4.83
GW-074922-021814-CM-MW-1-Z3	MW-1	C	2/18/2014	879	**3,330**	3.2	--	< 1.0	150.0	--	**1,050**	0.18	**0.176**	364	10.70	18.50	415	5.58
GW-074922-041514-WM-MW-1-Z3	MW-1	C	4/15/2014	911.0	**3,420**	0.52	--	< 1.0	138	--	**1,240**	0.134	**0.155**	316	9.12	15.5	487	4.68
GW-074922-041514-WM-DUP	MW-1	C	4/15/2014	188.0	**4,110**	0.56	--	< 1.0	35.3	--	**3,910**	0.0347	**0.309**	454	11.9	15.6	862	7.26
GW-074922-062414-CM-MW-1-Z3	MW-1	C	6/24/2014	857.0	**2,880**	15.3	--	< 1.0	124	--	**1,230**	0.096	**0.151**	252	9	15	722	4
GW-074922-081914-CM-MW-1-Z3	MW-1	C	8/19/2014	816.0	**3,060**	19.9	--	ND	114	--	**1,170**	0.0919	**0.145**	230	9	15	707	5
GW-074922-121012-CM-MW-1-Z2	MW-1	D	12/10/2012	345	**2,690**	5.6	--	1.0	67.0	--	**1,360**	--	**0.156**	287	8.44	14.70	580	--
GW-074922-121012-CM-MW-1- DUP	MW-1	D	12/10/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-022813-CM-MW-1-Z2	MW-1	D	2/28/2013	711	**4,630**	15.1	--	< 1.0	128	--	**2,220**	--	**0.282**	471	11.80	17.20	1,000	--
GW-074922-022813-CM-MW-1-DUP	MW-1	D	2/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-032213-CM-MW-1-Z2	MW-1	D	3/22/2013	622	**4,440**	0.097	--	1.1	124	--	**2,410**	--	**0.314**	441	11.70	16.50	1,040	--
GW-074922-061813-CM-MW-1-Z2	MW-1	D	6/18/2013	467	**5,510**	12.4	--	< 1.0	117	--	**3,300**	--	**0.403**	502	13.80	15.80	1,290	--
GW-074922-061813-CM-MW-1-DUP	MW-1	D	6/18/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GW-074922-092613-CM-MW-1-Z2	MW-1	D	9/26/2013	365	**6,000**	12.4	--	< 1.0	107	--	**4,490**	--	**0.416**	444	11.30	13.30	1,440	--
GW-074922-120613-CM-MW-[illegible]-Z2	MW-1	D	12/6/2013	423	**6,100**	7.2	--	< 1.0	84.3	--	**4,070**	0.05	**0.479**	432	11.50	11.90	1,620	6.27
GW-074922-021814-CM-MW-1-Z2	MW-1	D	2/18/2014	351	**6,900**	2.3	--	< 1.0	72.7	--	**4,900**	0.05	**0.635**	469	13.00	17.60	886	7.23
GW-074922-021914-CM-MW-DUP	MW-1	D	2/19/2014	202	**4,900**	0.8	--	< 1.0	36.2	--	**5,260**	0.0407	**0.344**	498	13	18	460	8
GW-074922-041514-WM-MW-1-Z2	MW-1	D	4/15/2014	375.0	**6,940**	1.0	--	< 1.0	61.8	--	**5,240**	0.0423	**0.618**	454	12.4	16.4	1670	6.86
GW-074922-062414-CM-MW-1-Z2	MW-1	D	6/24/2014	425.0	**7,020**	9.4	--	< 1.0	60.7	--	**4,580**	0.04	**0.554**	433	11	13	1,650	6
GW-074922-081914-CM-MW-1-Z2	MW-1	D	8/19/2014	486.0	**7,280**	16	--	ND	59.4	--	**4,540**	0.0397	**0.551**	423	11	13	1,650	7
GW-074922-121012-CM-MW-1-Z1	MW-1	G	12/10/2012	93.7	**3,930**	< 0.50	--	1.4	135	--	**2,700**	--	**0.242**	429	10.80	15.70	813	--
GW-074922-022813-CM-MW-1-Z1	MW-1	G	2/28/2013	502	**3,770**	2.2	--	< 1.0	82.3	--	**2,010**	--	**0.246**	487	13.10	18.80	786	--
GW-074922-032213-CM-MW-1-Z1	MW-1	G	3/22/2013	411	**3,750**	< 0.050	--	< 1.0	73.6	--	**2,270**	--	**0.239**	468	12.70	17.00	780	--
GW-074922-061813-CM-MW-1-Z1	MW-1	G	6/18/2013	297	**4,130**	0.061	--	< 1.0	50.5	--	**3,090**	--	**0.296**	500	13.30	15.60	839	--
GW-074922-092613-CM-MW-1-Z1	MW-1	G	9/26/2013	246	**4,320**	1.6	--	< 1.0	43.6	--	**4,180**	--	**0.289**	460	11.70	14.10	906	--
GW-074922-092613-CM-MW-1-DUP	MW-1	G	9/26/2013	246	**4,230**	1.5	--	< 1.0	42.6	--	**4,150**	--	**0.302**	476	12	15	860	--
GW-074922-120513-CM-MW-[illegible]-Z1	MW-1	G	12/5/2013	237	**4,300**	0.97	--	< 1.0	39.6	--	**2,950**	<0. 500	**<0.500**	495	13.10	14.10	940	7.76
GW-074922-120513-CM-DUP	MW-1	G	12/5/2013	224	**3,590**	1.0	--	< 1.0	38.9	--	**2,960**	0.041	**0.306**	478	12	14	1,040	8

TABLE 6B

GROUNDWATER GEOCHEMICAL ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012 - AUGUST 2014
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Alkalinity		Sulfide		Anions				Dissolved Metals						
				Total Alkalinity as $CaCO_3$ (mg/L)	Total Dissolved Solids (TDS) (mg/L)	Sulfide Total (mg/L)[5]	Sulfide Dissolved (mg/L)	Bromide (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Barium, Dissolved (mg/L)	Dissolved Boron (mg/L)	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Strontium, Dissolved (mg/L)
New Mexico Standards for Groundwater[1]				NE	1000[2]	NE	NE	NE	250.0[2]	NE	600[2]	NE	0.075[2]	NE	NE	NE	NE	NE
GW-074922-021914-CM-MW-1-Z1	MW-1	G	2/19/2014	207	**4,920**	0.82	--	< 1.0	39.0	--	**3,240**	0.04	**0.352**	499	13.60	18.50	477	8.49
GW-074922-041514-WM-MW-1-Z1	MW-1	G	4/15/2014	---	**4,510**	0.46	--	< 1.0	35.6	--	**4,500**	0.0388	**0.33**	480	12.5	16.4	864	7.57
GW-074922-062414-CM-MW-1-Z1	MW-1	G	6/24/2014	134.0	**4,980**	0.48	--	< 1.0	36.8	--	**2,560**	0.0408	**0.341**	476	12	14	1,010	7,620
GW-074922-062414-CM-DUP	MW-1	G	6/24/2014	140.0	**5,010**	0.3	--		36.9		**3,600**	0.0396	**0.35**	479	12	15	1,090	7,710
GW-074922-082014-CM-MW-1-Z1	MW-1	G	8/20/2014	133.0	**4,880**	1.2	--	ND	35	--	**3,950**	0.0354	**0.332**	440	11	14	974	7
GW-074922-082014-CM-DUP	MW-1	G	8/20/2014	143.0	**4,520**	1.9	--	ND	33.3	--	**3,630**	0.035	**0.315**	414	10	13	932	7
GW-074922-120313-CM-MW-2-Z2	MW-2	A	12/3/2013	325	**1,160**	< 0.050	--	< 1.0	19.0	--	58	0.05	**0.146**	8	0.85	1.86	274	0.13
GW-074922-120313-CM-MW-2-Z1	MW-2	C	12/3/2013	201	**2,200**	0.10	--	< 1.0	22.2	--	458	0.24	**0.159**	237	13.20	5.39	376	2.39
GW-074922-021914-CM-MW-2-Z1	MW-2	C	2/19/2014	1,130	**3,150**	10.1	--	< 1.0	21.9	--	273	0.23	**0.196**	374	19.20	7.39	292	4.00
GW-074922-041414-CM-MW-2-Z1	MW-2	C	4/14/2014	1380.0	**2,620**	7.3	--	< 1.0	21.5	--	**2**	0.252	**0.191**	367	20.1	6.68	392	3.86
GW-074922-062314-CM-MW-2-Z1	MW-2	C	6/23/2014	1570.0	**2,840**	10.2	--	< 1.0	21.7	--	**2**	0.252	**0.184**	242	18	6	460	4
GW-074922-081814-CM-MW-2-Z1	MW-2	C	8/18/2014	1740.0	**3,780**	17.9	--	ND	23.4	--	4	0.24	**0.183**	340	17	5	454	4
GW-074922-120513-CMMW-3-Z2	MW-3	D	12/5/2013	147	**4,410**	< 0.050	--	< 1.0	11.5	--	**2,930**	0.01	**0.264**	372	13.00	4.77	1,050	6.12
GW-074922-021914-BJ-MW-3-Z2	MW-3	D	2/19/2014	135	**4,760**	0.15	--	< 1.0	11.5	--	**6,210**	0.01	**0.308**	433	10.50	7.18	467	7.40
GW-074922-041414-CM-MW-3-Z2	MW-3	D	4/14/2014	144.0	**4,020**	0.14	--	< 1.0	11.6	--	**2,880**	0.0114	**0.291**	420	9.63	6.89	934	6.98
GW-074922-062514-CM-MW-3-Z2	MW-3	D	6/25/2014	133.0	**4,040**	0.2	--		12.3		**2,930**	0.0113	**0.285**	404	9	5	1,030	7
GW-074922-081914-CM-MW-3-Z2	MW-3	D	8/19/2014	142.0	**4,560**	1.1	--	ND	11.9	--	**3,020**	0.0122	**0.274**	378	8	5	942	7
GW-074922-120413-CM-MW-4-Z2	MW-4	D	12/4/2013	838	**3,160**	1.5	--	< 1.0	50.3	--	**915**	0.08	**<0.500**	362	11.20	5.90	638	4.95
GW-074922-021814-BJ-MW-4-Z2	MW-4	D	2/18/2014	1,310	**3,740**	146.0	--	< 1.0	80.2	--	**910**	0.07	**0.312**	448	12.00	8.31	467	5.69
GW-074922-041614-CM-MW-4-Z2	MW-4	D	4/16/2014	1430.0	**3,320**	64.1	--	< 1.0	70.6	--	**1,050**	0.0621	**0.258**	413	10.7	6.65	710	5.19
GW-074922-062514-CM-MW-4-Z2	MW-4	D	6/25/2014	1540.0	**2,540**	73			56.6		**1,270**	0.064	**0.34**	415	10	6	962	5
GW-074922-082014-CM-MW-4-Z2	MW-4	D	8/20/2014	1750.0	**3,610**	72.4	--	ND	47.7	--	**1,270**	0.0585	**0.31**	403	10	6	855	5
GW-074922-120313-CM-MW-4-Z1	MW-4	E	12/3/2013	1,370	**2,510**	70.0	--	< 1.0	19.4	--	442	0.12	**0.100**	517	17.80	4.92	339	6.06
GW-074922-021814-BJ-MW-4-Z1	MW-4	E	2/18/2014	1,200	**2,630**	70.4	--	< 1.0	16.7	--	**901**	0.10	**<0.100**	682	15.70	5.09	229	6.81
GW-074922-041614-CM-MW-4-Z1	MW-4	E	4/16/2014	935.0	**3,140**	67.3	--	< 1.0	16.4	--	**1,070**	0.08	**< 0.1**	635	14.4	4.61	204	5.82
GW-074922-062514-CM-MW-4-Z1	MW-4	E	6/25/2014	897.0	**2,850**	58.8			17.8		**1,260**	0.0808	**0.111**	670	14	4	268	6
GW-074922-082014-CM-MW-4-Z1	MW-4	E	8/20/2014	939.0	**3,510**	65.8	--	ND	17.7	--	**1,190**	0.728	**0.104**	581	12	4	270	6

Notes:
[1] Criteria parameters and limits are listed in NMAC 20.6.2.3103 [NMAC Title 20, Chapter 6, Part 2, Section 3103: Human Health Standards for Ground Water of 10,000 mg/l TDS Concentration or Less].
[2] Additional NMAC 20.6.2.3103 limit for domestic water supply.
[3] -- Indicates not analyzed
[4]Shaded bold results indicate exceedance limits listed in NMAC 20.6.2.3103.
[5] Sulfide analysis was conducted after hold time expired
[6] GW indicates Groundwater Sample
[7] < 1.0 Below laboratory detection limit
[8] NE indicates "Not Established'
[9] DUP indicates Duplicate Sample
[10] ND indicates "Not Detected"
mg/L = milligrams per liter

TABLE 7

GROUNDWATER HEADSPACE METHANE, CONDENSATES, AND ATMOSPHERIC GASES
ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012 - DECEMBER 2014
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Ar (%)	CO (%)	CO_2 (%)	H_2 (%)	He (%)	N_2 (%)	O_2 (%)	CH_4 (Methane) (%)	C_2H_4 (Ethylene)(%)	C_2H_6 (Ethane)(%)	C_3H_6 (Propylene)(%)	C_3H_8 (Propane)(%)	iC_4H_{10} (Iso-butane)(%)	nC_4H_{10} (N-butane)(%)	iC_5H_{12} (Iso-pentane)(%)	nC_5H_{12} (N-pentane)(%)	C_6H_{14} + (Hexanes +)(%)	dDH_2O (‰)	$d^{18}OH_2O$ (‰)
GW-074922-121012-CM-MW-1-Z3	MW-1	C	12/10/2012	0.0784	ND	0.61	0.0165	0.006	97.63	1.52	0.141	ND	0.0024	ND	ND	ND	ND	ND	ND	ND	-92.1	-12.04
GW-074922-022813-CM-MW-1-DUP	MW-1	C	2/28/2013	0.15	ND	0.6	ND	0.0111	98.09	1.12	0.029	0.0001	0.0007	ND	ND	ND	ND	ND	ND	ND	-93.7	-12.17
GW-074922-022813-CM-MW-1-Z3	MW-1	C	2/28/2013	ND	ND	0.28	ND	0.0099	97.29	2.33	0.0214	ND	0.0006	ND	ND	ND	ND	ND	ND	ND	-91.9	-11.89
GW-074922-032213-CM-MW-1-Z3	MW-1	C	3/22/2013	0.144	ND	0.26	ND	0.0116	99.32	0.23	0.0334	ND	0.0009	ND	ND	ND	ND	ND	ND	ND	--	--
GW-074922-032213-CM-MW-1-DUP	MW-1	C	3/22/2013	0.127	ND	0.76	ND	0.0108	98.51	0.57	0.0231	ND	0.0005	ND	ND	ND	ND	ND	ND	ND	--	--
GW-074922-061813-CM-MW-1-Z3	MW-1	C	6/18/2013	0.114	ND	0.9	ND	ND	96.65	1.8	0.52	ND	0.0154	ND	0.0016	0.0001	0.0002	ND	ND	ND	-93.4	-12.02
GW-074922-100213-CM-MW-1-Z3	MW-1	C	10/2/2013	0.112	ND	0.67	ND	ND	96.7	2.45	0.0676	ND	0.0017	ND	0.0002	ND	ND	ND	ND	ND	--	--
GW-074922-120613-CM-MW-1-Z3	MW-1	C	12/6/2013	0.0186	ND	0.51	ND	ND	99.4	0.026	0.0438	ND	0.0011	ND	0.0001	ND	ND	ND	ND	ND	--	--
GW-074922-021814-CM-MW-1-Z3	MW-1	C	2/18/2014	0.0624	ND	0.5	ND	ND	99.24	0.18	0.0176	ND	0.0007	ND	ND	ND	ND	ND	ND	ND	--	--
GW-074922-041614-CM-MW-1-Z3	MW-1	C	4/16/2014	0.0639	ND	0.67	ND	ND	98.79	0.38	0.0952	ND	--	--	0.0003	ND	ND	ND	ND	ND	-96.2	-12.54
GW-074922-062414-CM-MW-1-Z3	MW-1	C	6/24/2014	0.0709	ND	0.54	ND	ND	98.96	0.027	0.387	ND	0.0101	ND	0.0008	ND	ND	ND	ND	ND	-96.1	-12.57
GW-074922-081914-CM-MW-1-Z3	MW-1	C	8/19/2014	0.0833	ND	0.87	ND	ND	98.61	0.4	0.04	ND	0.0013	ND	0.0002	ND	ND	ND	ND	ND	-95.5	-12.56
GW-074922-102114-CM-MW-1-Z3	MW-1	C	10/21/2014	0.0773	ND	0.43	ND	0.524	98.7	0.062	0.205	ND	0.0057	ND	0.0006	ND	ND	ND	ND	ND	-95.8	.12.5
GW-074922-120314-CM-MW-1-Z3	MW-1	C	12/3/2014	0.0298	ND	0.27	ND	ND	99.64	ND	0.0571	ND	0.0016	ND	0.0002	ND	ND	ND	ND	ND	-96.7	-12.69
GW-074922-121012-CM-MW-1-Z2	MW-1	D	12/10/2012	0.133	ND	1.95	0.727	0.0134	95.53	1.2	0.444	ND	0.0063	ND	0.0003	ND	ND	ND	ND	ND	-93.4	-12.24
GW-074922-022813-CM-MW-1-Z2	MW-1	D	2/28/2013	0.211	0.006	0.64	0.0046	0.0115	96.73	0.98	1.38	0.0004	0.0319	ND	0.0031	0.0001	0.0004	ND	0.0001	ND	-92.7	-11.94
GW-074922-032213-CM-MW-1-Z2	MW-1	D	3/22/2013	0.663	ND	1.46	ND	--	93.07	4.72	0.086	ND	0.0026	ND	ND	ND	ND	ND	ND	ND	--	--
GW-074922-061813-CM-MW-1-Z2	MW-1	D	6/18/2013	0.615	ND	2.53	ND	--	88.68	7.99	0.181	0.0003	0.0058	ND	0.0007	ND	ND	ND	ND	ND	-99.8	-12.82
GW-074922-061813-CM-MW-1-DUP	MW-1	D	6/18/2013	0.622	ND	1.12	ND	--	89.31	8.88	0.0643	ND	0.0024	ND	ND	ND	ND	ND	ND	ND	-99.8	-12.71
GW-074922-092613-CM-MW-1-Z2	MW-1	D	9/26/2013	0.69	ND	2.54	ND	--	83.19	13.18	0.38	0.0006	0.0147	0.0002	0.0015	ND	0.0002	ND	ND	ND	--	--
GW-074922-120613-CM-MW-1-Z2	MW-1	D	12/6/2013	0.258	ND	1.47	ND	--	97.66	0.088	0.506	0.0002	0.0181	ND	0.0023	ND	0.0004	ND	ND	ND	--	--
GW-074922-021814-CM-MW-1-Z2	MW-1	D	2/18/2014	0.0244	ND	0.42	ND	ND	99.42	0.12	0.0146	ND	0.0007	ND	0.0001	ND	ND	ND	ND	ND	--	--
GW-074922-041514-WM-MW-1-Z2	MW-1	D	4/15/2014	0.0213	ND	0.24	ND	ND	99.57	0.16	0.0057	ND	0.0002	ND	ND	ND	ND	ND	ND	ND	-104.6	-13.42
GW-074922-062414-CM-MW-1-Z2	MW-1	D	6/24/2014	0.577	ND	6.72	ND	ND	89.68	0.48	2.46	0.001	0.0721	ND	0.007	0.0007	0.001	ND	ND	ND	-104.1	-13.48
GW-074922-081914-CM-MW-1-Z2	MW-1	D	8/19/2014	0.243	ND	3.95	ND	NA	95.33	ND	0.455	0.0004	0.0195	ND	0.0028	0.0004	0.0006	ND	ND	ND	-104.4	-13.57
GW-074922-102114-CM-MW-1-Z2	MW-1	D	10/21/2014	0.183	ND	0.9	ND	ND	98.49	0.093	0.317	ND	0.011	ND	0.0014	0.0001	0.0002	ND	ND	ND	-105.0	13.60
GW-074922-120214-CM-MW-1-Z2	MW-1	D	12/2/2014	0.0906	ND	2.4	ND	NA	96.77	0.045	0.671	0.0005	0.0223	ND	0.0028	0.0002	0.0005	ND	ND	ND	-104.5	-13.65
GW-074922-121012-CM-MW-1-Z1	MW-1	G	12/10/2012	1.02	ND	0.88	ND	--	75.86	21.9	0.337	ND	0.0049	ND	ND	ND	ND	ND	ND	ND	-98	-12.70
GW-074922-022813-CM-MW-1-Z1	MW-1	G	2/28/2013	0.726	0.013	35.71	ND	--	50.24	11.91	1.36	0.0012	0.0327	ND	0.0018	ND	ND	0.0004	ND	ND	-95.3	-12.31
GW-074922-032213-CM-MW-1-Z1	MW-1	G	3/22/2013	1.21	ND	5.91	ND	--	62.25	24.61	5.88	ND	0.132	ND	0.0099	ND	0.0005	0.0009	ND	ND	--	--
GW-074922-061813-CM-MW-1-Z1	MW-1	G	6/18/2013	0.887	ND	2.25	ND	--	73.93	20.17	2.68	0.0005	0.0754	ND	0.0079	0.0005	0.0005	ND	ND	ND	-96.5	-12.64

TABLE 7

GROUNDWATER HEADSPACE METHANE, CONDENSATES, AND ATMOSPHERIC GASES
ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012 - DECEMBER 2014
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Ar (%)	CO (%)	CO_2 (%)	H_2 (%)	He (%)	N_2 (%)	O_2 (%)	CH_4 (Methane) (%)	C_2H_4 (Ethylene)(%)	C_2H_6 (Ethane)(%)	C_3H_6 (Propylene)(%)	C_3H_8 (Propane)(%)	iC_4H_{10} (Iso-butane)(%)	nC_4H_{10} (N-butane)(%)	iC_5H_{12} (Iso-pentane)(%)	nC_5H_{12} (N-pentane)(%)	C_6H_{14} + (Hexanes +)(%)	dDH_2O (‰)	$d^{18}OH_2O$ (‰)
GW-074922-092613-CM-MW-1-Z1	MW-1	G	9/26/2013	1.23	ND	3.91	ND	--	66.85	23.75	4.15	0.0012	0.1	0.0004	0.0049	ND	0.0008	ND	ND	ND	--	--
GW-074922-092613-CM-MW-1-DUP	MW-1	G	9/26/2013	1.17	ND	3.13	ND	--	68.57	23.66	3.37	0.0008	0.089	ND	0.0046	ND	0.0008	ND	ND	ND	--	--
GW-074922-120513-CM-MW-1-Z1	MW-1	G	12/5/2013	1.44	ND	7.07	ND	--	75.44	5.25	10.6	0.0018	0.18	0.0004	0.011	0.0009	0.0018	ND	ND	ND	--	--
GW-074922-120513-CM-DUP	MW-1	G	12/5/2013	1.6	ND	8.25	ND	--	74.78	1.63	13.5	0.0026	0.223	0.0005	0.0134	0.001	0.0021	ND	ND	ND	--	--
GW-074922-021914-CM-MW-1-Z1	MW-1	G	2/19/2014	1.19	ND	6.97	ND	--	73.62	2.65	15.25	0.002	0.294	ND	0.0212	0.0016	0.0024	ND	ND	ND	--	--
GW-074922-021914-CM-DUP	MW-1	G	2/19/2014	1.32	ND	8.05	ND	--	71.06	3.15	16.1	0.0021	0.288	ND	0.021	0.0017	0.0026	0.0004	ND	ND	--	--
GW-074922-041514-WM-MW-1-Z1	MW-1	G	4/15/2014	1.3	ND	8.46	ND	--	66.75	7.98	15.17	0.0019	0.3	ND	0.0292	0.0034	0.0034	0.0005	ND	ND	-98.9	-13.05
GW-074922-062414-CM-MW-1-Z1	MW-1	G	6/24/2014	1.16	ND	21.06	ND	ND	59.97	7.19	10.42	0.0016	0.183	ND	0.0106	0.0008	0.0012	ND	ND	ND	-99	-12.84
gw-074922-062414-CM-DUP	MW-1	G	6/24/2014	1.16	ND	20.67	ND	NA	60.65	6.93	10.39	0.0015	0.182	ND	0.0105	0.0007	0.0015	ND	ND	ND	-98.7	-12.79
GW-074922-082014-CM-MW-1-Z1	MW-1	G	8/20/2014	1.14	ND	27.72	ND	NA	55.34	5.36	10.22	0.0064	0.192	ND	0.0172	0.0021	0.0026	0.0004	ND	ND	-98.4	-12.95
GW-074922-082014-CM-DUP	MW-1	G	8/20/2014	1.18	ND	22.55	ND	NA	58.87	6.41	10.77	0.0037	0.195	ND	0.0156	0.0016	0.002	0.0004	ND	ND	-98.6	-12.97
GW-074922-102114-CM-MW-1-Z1	MW-1	G	10/21/2014	0.986	ND	14.75	ND	NA	67.15	8.33	8.56	0.0016	0.199	ND	0.0183	0.0019	0.0022	0.0003	ND	ND	-98.4	-12.90
GW-074922-102114-CM-DUP	MW-1	G	10/21/2014	0.0241	ND	0.39	ND	ND	99.53	0.029	0.0218	ND	0.0009	ND	0.0001	ND	ND	ND	ND	ND	-103.8	-13.43
GW-074922-120214-CM-MW-1-Z1	MW-1	G	12/2/2014	0.738	ND	49.29	ND	NA	41	0.27	8.46	0.0122	0.202	ND	0.019	0.0023	0.0023	0.0004	ND	ND	-99.4	-12.99
GW-074922-120214-CM-DUP	MW-1	G	12/2/2014	0.89	ND	31.77	ND	NA	53.88	4.85	8.4	0.0062	0.185	ND	0.0162	0.0018	0.0022	0.0004	ND	ND	-98.9	-13.01
GW-074922-120313-CM-MW-2-Z2	MW-2	A	12/3/2013	0.0528	ND	0.12	ND	ND	99.74	0.047	0.039	ND	0.0007	ND	0.0001	ND	ND	ND	ND	ND	--	--
GW-074922-120313-CM-MW-2-Z1	MW-2	C	12/3/2013	0.0149	ND	0.67	0.04	ND	99.2	0.056	0.0225	ND	0.0003	ND	ND	ND	ND	ND	ND	ND	--	--
GW-074922-021914-CM-MW-2-Z1	MW-2	C	2/19/2014	0.077	ND	2.55	ND	--	97.12	0.21	0.0396	ND	0.0019	ND	ND	ND	ND	ND	ND	ND	--	--
GW-074922-041414-CM-MW-2-Z1	MW-2	C	4/14/2014	0.0814	ND	4.52	ND	--	94.96	0.051	0.372	ND	0.0093	ND	0.0014	ND	0.0002	ND	ND	ND	-91.1	-11.83
GW-074922-062314-CM-MW-2-Z2	MW-2	C	6/23/2014	0.556	ND	6.64	ND	NA	89.71	2.26	0.811	ND	0.0232	ND	0.004	ND	0.0005	ND	ND	ND	--	--
GW-074922-081814-CM-MW-2-Z1	MW-2	C	8/18/2014	0.0238	ND	1.66	ND	ND	98.25	ND	0.0705	ND	0.0006	ND	ND	ND	ND	ND	ND	ND	-90.4	-11.76
GW-074922-102014-CM-MW-2-Z1	MW-2	C	10/20/2014	0.0456	ND	17.56	ND	NA	72.37	0.064	9.94	ND	0.0145	ND	0.0022	0.0002	0.0004	ND	ND	ND	-89.7	-11.55
GW-074922-120114-CM-MW-2-Z1	MW-2	C	12/1/2014	0.0094	ND	4.85	ND	ND	93.12	ND	2.02	ND	0.0035	ND	0.0005	ND	0.0001	ND	ND	ND	-90.6	-11.75
GW-074922-120513-CM-MW-3-Z2	MW-3	D	12/5/2013	0.0616	ND	0.12	ND	ND	98.96	0.82	0.0362	ND	0.0004	ND	ND	ND	ND	ND	ND	ND	--	--
GW-074922-021914-BJ-MW-3-Z2	MW-3	D	2/19/2014	0.0747	ND	0.29	ND	--	98.44	1.19	0.0072	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--
GW-074922-041414-CM-MW-3-Z2	MW-3	D	4/14/2014	0.203	ND	0.71	ND	ND	98.13	0.8	0.154	ND	0.002	ND	0.0002	ND	ND	ND	ND	ND	-102	-13.54
GW-074922-062514-CM-MW-3-Z2	MW-3	D	6/25/2014	0.0495	ND	0.33	ND	ND	98.99	0.62	0.0116	ND	0.0002	ND	ND	ND	ND	ND	ND	ND	-101.5	-13.22
GW-074922-081914-CM-MW-3-Z2	MW-3	D	8/19/2014	0.291	ND	0.93	ND	NA	92.58	6.14	0.0612	ND	0.0018	ND	0.0003	ND	ND	ND	ND	ND	-101	-13.34
GW-074922-120214-CM-MW-3-Z2	MW-3	D	10/21/2014	1.45	ND	7.28	ND	NA	88.33	0.57	2.33	0.0009	0.0403	ND	0.0033	ND	ND	ND	ND	ND	-100.8	13.16
GW-074922-102114-CM-MW-3-Z2	MW-3	D	12/2/2014	0.14	ND	1.07	ND	NA	98.29	0.32	0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	-101.9	13.36
GW-074922-120413-CM-MW-4-Z2	MW-4	D	12/4/2013	0.163	ND	12.44	ND	ND	86.37	0.024	0.978	0.0001	0.0217	ND	0.0021	0.0001	0.0002	ND	ND	ND	--	--
GW-074922-021814-BJ-MW-4-Z2	MW-4	D	2/18/2014	0.0912	ND	9.16	ND	--	90.48	0.14	0.118	ND	0.0069	ND	0.0012	ND	ND	ND	ND	ND	--	--
GW-074922-041614-CM-MW-4-Z2	MW-4	D	4/16/2014	0.0469	ND	2.26	ND	ND	97.51	0.14	0.0365	ND	0.0018	ND	0.0003	ND	ND	ND	ND	ND	-94.5	-12.32
GW-074922-062614-CM-MW-4-Z2	MW-4	D	6/26/2014	0.0651	ND	2.6	ND	ND	96.64	ND	0.689	ND	0.0028	ND	ND	ND	ND	ND	ND	ND	-94.5	-12.28

TABLE 7

GROUNDWATER HEADSPACE METHANE, CONDENSATES, AND ATMOSPHERIC GASES
ANALYTICAL RESULTS SUMMARY FROM MONITOR WELLS
DECEMBER 2012 - DECEMBER 2014
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Ar (%)	CO (%)	CO_2 (%)	H_2 (%)	He (%)	N_2 (%)	O_2 (%)	CH_4 (Methane) (%)	C_2H_4 (Ethylene)(%)	C_2H_6 (Ethane)(%)	C_3H_6 (Propylene)(%)	C_3H_8 (Propane)(%)	iC_4H_{10} (Iso-butane)(%)	nC_4H_{10} (N-butane)(%)	iC_5H_{12} (Iso-pentane)(%)	nC_5H_{12} (N-pentane)(%)	C_6H_{14} + (Hexanes +)(%)	dDH_2O (‰)	$d^{18}OH_2O$ (‰)
GW-074922-082014-CM-MW-4-Z2	MW-4	D	8/20/2014	0.0471	ND	2.22	ND	ND	97.17	0.31	0.249	ND	0.0017	ND	0.0003	ND	ND	ND	ND	ND	-94.5	-12.41
GW-074922-102214-CM-MW-4-Z2	MW-4	D	10/22/2014	0.044	ND	2.7	ND	0.578	93.84	0.038	2.75	ND	0.0437	ND	0.005	0.0004	0.0005	0.0001	ND	0.0001	-95.3	-12.39
GW-074922-120314-CM-MW-4-Z2	MW-4	D	12/3/2014	0.0929	ND	12.02	ND	NA	65.94	0.044	21.81	ND	0.0853	ND	0.0086	0.0008	0.0005	ND	ND	ND	-95.3	-12.37
GW-074922-120313-CM-MW-4-Z1	MW-4	E	12/3/2013	0.266	ND	6.5	ND	ND	91.54	0.037	1.61	0.0002	0.0393	ND	0.0042	0.0002	0.0004	ND	ND	ND	--	--
GW-074922-021814-BJ-MW-4-Z1	MW-4	E	2/18/2014	0.603	ND	12.05	ND	--	56.58	0.13	30.04	0.0002	0.54	ND	0.0495	0.0024	0.004	ND	0.0004	0.0002	--	--
GW-074922-041614-CM-MW-4-Z1	MW-4	E	4/16/2014	0.439	ND	9	ND	--	87.57	0.12	2.8	ND	0.0622	ND	0.008	0.0006	0.001	ND	ND	ND	-89.3	-11.59
GW-074922-062514-CM-MW-4-Z1	MW-4	E	6/25/2014	0.367	ND	4.77	ND	ND	92.48	ND	2.29	0.0002	0.0766	ND	0.0127	0.0014	0.002	0.0002	ND	ND	-89	-11.46
GW-074922-082014-CM-MW-4-Z1	MW-4	E	8/20/2014	0.638	ND	3.08	ND	ND	91.97	0.73	3.48	0.0002	0.0914	ND	0.0116	0.0012	0.0012	0.0002	0.0001	0.0001	-89.7	-11.61
GW-074922-102214-CM-MW-4-Z1	MW-4	E	10/22/2014	0.0393	ND	1.39	ND	0.657	96.92	0.26	0.702	ND	0.0279	ND	0.0035	0.0003	0.0004	ND	ND	ND	-89.2	-11.68
GW-074922-120314-CM-MW-4-Z1	MW-4	E	12/3/2014	0.0373	ND	1.16	ND	0.031	98.02	ND	0.721	ND	0.0235	ND	0.0028	0.0003	0.0003	ND	ND	ND	-90.8	-11.7

Notes:

[1] The carrier gas used in nitrogen analysis interferes with atmospheric nitrogen.

[2] -- Indicates not analyzed

[3] ND Indicates not detected by mass spectrometry

[4] NA indicates not analyzed by mass spectrometry

[5] Data comes from Isoflask

TABLE 8

GAS VOC ANALYTICAL RESULTS SUMMARY
FROM OPEN MONITOR WELL CASINGS
SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

	Sample ID	A-074922-092713-CM-MW-DUP (MW-4)	*A-074922-092713-CM-MW-2*	A-074922-092713-CM-MW-3	A-074922-092713-CM-MW-4
	Date Sampled	9/27/2013	*9/27/2013*	9/27/2013	9/27/2013
New Mexico Standards [1]	*Unit*				
Hydrogen Sulfide	ppbv	< 0.63	< 0.67	< 0.59	< 0.63
Dichlorodifluoromethane (12)	ppbv	< 63	< 59	< 32	< 63
Chloromethane	ppbv	4,300	5,400	2,100	4,000
1,2-Cl-1,1,2,2-F ethane (114)	ppbv	< 63	< 59	< 32	< 63
Vinyl Chloride	ppbv	< 63	< 59	< 32	< 63
Bromomethane	ppbv	< 63	< 59	< 32	< 63
Chloroethane	ppbv	< 63	< 59	< 32	< 63
Trichlorofluoromethane (11)	ppbv	< 63	< 59	< 32	< 63
1,1-Dichloroethene	ppbv	< 63	< 59	< 32	< 63
Carbon Disulfide	ppbv	< 320	< 300	< 160	< 320
1,1,2-Cl 1,2,2-F ethane (113)	ppbv	< 63	< 59	< 32	< 63
Acetone	ppbv	< 320	< 300	< 160	< 320
Methylene Chloride	ppbv	< 63	< 59	< 32	< 63
t-1,2-Dichloroethene	ppbv	< 63	< 59	< 32	< 63
1,1-Dichloroethane	ppbv	< 63	< 59	< 32	< 63
Vinyl Acetate	ppbv	< 320	< 300	< 160	< 320
c-1,2-Dichloroethene	ppbv	< 63	< 59	< 32	< 63
2-Butanone	ppbv	< 63	< 59	< 32	< 63
t-Butyl Methyl Ether (MTBE)	ppbv	< 63	< 59	< 32	< 63
Chloroform	ppbv	< 63	< 59	< 32	< 63
1,1,1-Trichloroethane	ppbv	< 63	< 59	< 32	< 63
Carbon Tetrachloride	ppbv	< 63	< 59	< 32	< 63
Benzene	ppbv	< 63	< 59	< 32	< 63

TABLE 8

GAS VOC ANALYTICAL RESULTS SUMMARY
FROM OPEN MONITOR WELL CASINGS
SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

	Sample ID	A-074922-092713-CM-MW-DUP (MW-4)	A-074922-092713-CM-MW-2	A-074922-092713-CM-MW-3	A-074922-092713-CM-MW-4
	Date Sampled	9/27/2013	9/27/2013	9/27/2013	9/27/2013
New Mexico Standards [1]	Unit				
1,2-Dichloroethane	ppbv	< 63	< 59	< 32	< 63
Trichloroethene	ppbv	< 63	< 59	< 32	< 63
1,2-Dichloropropane	ppbv	< 63	< 59	< 32	< 63
Bromodichloromethane	ppbv	< 63	< 59	< 32	< 63
c-1,3-Dichloropropene	ppbv	< 63	< 59	< 32	< 63
4-Methyl-2-Pentanone	ppbv	< 63	< 59	< 32	< 63
Toluene	ppbv	< 63	< 59	< 32	< 63
t-1,3-Dichloropropene	ppbv	< 63	< 59	< 32	< 63
1,1,2-Trichloroethane	ppbv	< 63	< 59	< 32	< 63
Tetrachloroethene	ppbv	< 63	< 59	< 32	< 63
2-Hexanone	ppbv	< 63	< 59	< 32	< 63
Dibromochloromethane	ppbv	< 63	< 59	< 32	< 63
1,2-Dibromoethane	ppbv	< 63	< 59	< 32	< 63
Chlorobenzene	ppbv	< 63	< 59	< 32	< 63
Ethylbenzene	ppbv	< 63	< 59	< 32	< 63
p,&m-Xylene	ppbv	< 63	< 59	< 32	< 63
o-Xylene	ppbv	< 63	< 59	< 32	< 63
Styrene	ppbv	< 63	< 59	< 32	< 63
Bromofrom	ppbv	< 63	< 59	< 32	< 63
1,1,2,2-Tetrachloroethane	ppbv	< 130	< 120	< 63	< 130
Benzyl Chloride	ppbv	< 63	< 59	< 32	< 63
4-Ethyl Toluene	ppbv	< 63	< 59	< 32	< 63
1,3,5-Trimethylbenzene	ppbv	< 130	< 120	< 63	< 130
1,2,4-Trimethylbenzene	ppbv	< 130	< 120	< 63	< 130

TABLE 8

GAS VOC ANALYTICAL RESULTS SUMMARY
FROM OPEN MONITOR WELL CASINGS
SEPTEMBER 2013
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

	Sample ID	A-074922-092713-CM-MW-DUP (MW-4)	*A-074922-092713-CM-MW-2*	A-074922-092713-CM-MW-3	A-074922-092713-CM-MW-4
	Date Sampled	9/27/2013	*9/27/2013*	9/27/2013	9/27/2013
New Mexico Standards [1]	*Unit*				
1,3-Dichlorobenzene	ppbv	< 63	< 59	< 32	< 63
1,4-Dichlorobenzene	ppbv	< 63	< 59	< 32	< 63
1,2-Dichlorobenzene	ppbv	< 63	< 59	< 32	< 63
1,2,4-Trichlorobenzene	ppbv	< 130	< 120	< 63	< 130
Hexachlorobutadiene	ppbv	< 63	< 59	< 32	< 63
TVOC as Gasoline	ppbv	800	1,300	360	860
TVOC as Diesel	ppbv	2,400	3,800	1,100	2,600
Methane	% v/v	61	74	25	58
Ethane	% v/v	0.93	1.1	0.37	0.85
Acetylene	% v/v	< 0.0032	< 0.0034	< 0.0030	< 0.0032
Net Heating Value	BTU/ft^3	566	690	236	542
Gross Heating Value	BTU/ft3	628	767	262	602

Notes:

[1] New Mexico currently has no groundwater or groundwater headspace standards for the parameters analyzed.

[2] The carrier gas used in nitrogen analysis interferes with atmospheric nitrogen.

PPBV = Part Per Billion by Volume

V/V = volume-volume percent

TABLE 9

GAS HYDROCARBON AND FIXED GASES
ANALYTICAL RESULTS SUMMARY FROM OPEN MONITOR WELL
CASING AND GAS PORT SAMPLES
MARCH 2013 - DECEMBER 2014
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Argon	Carbon Monoxide	Carbon Dioxide		Hydrogen	Helium	Nitrogen	Oxygen	Methane			Ethylene
				Chemical mol. %	Chemical mol. %	Chemical mol. %	δ^{13} C‰	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %	δ^{13} C‰	δD‰	Chemical mol. %
New Mexico Standards [1]				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
A-074922-032213-CM-MW-1(2)	MW-1	--	3/22/2013	0.111	ND	0.013	--	ND	ND	98.09	1.78	0.0011	--	--	ND
A-074922-032213-CM-MW-1(3)	MW-1	--	3/22/2013	0.0578	ND	0.018	--	ND	ND	99.56	0.36	0.0005	--	--	ND
A-074922-032213-CM-MW-1-DUP	MW-1	--	3/22/2013	0.0652	ND	0.011	--	ND	ND	99.38	0.54	0.0018	--	--	ND
A-074922-032213-CM-CPW	MW-1	--	3/22/2013	0.130	ND	1.6	--	ND	0.0034	11.27	0.12	85.27	-36.66	-175.0	ND
A-074922-081814-CM-DUP	MW-1	--	8/18/2014	0.306	ND	1.00	-12.73	ND	ND	26.12	0.08	71.19	-36.66	-173.6	ND
A-074922-092713-CM-MW-2	MW-2	--	9/27/2013	0.154	ND	1.14	-14.59	ND	ND	13.07	2.29	81.74	-36.58	-174.30	ND
A-074922-120213-CM-MW-2	MW-2	--	12/2/2013	0.797	ND	2.00	-26.27	ND	ND	69.55	15.18	12.28	-45.49	-183.3	ND
A-074922-120213-CM-DUP	MW-2	--	12/2/2013	0.962	ND	3.94	-29.45	ND	ND	78.30	16.07	0.717	-72.13	-197.2	ND
A-074922-021714-BJ-MW-2	MW-2	--	2/18/2014	0.626	ND	4.23	--	ND	ND	43.32	9.48	41.76	-34.35	-160.1	ND
A-074922-021714-BJ-DUP	MW-2	--	2/18/2014	0.634	ND	3.17	--	ND	ND	38.61	3.17	52.410	-33.22	-164.1	ND
A-074922-041614-KW-MW-2	MW-2	--	4/16/2014	0.565	ND	4.20	--	ND	ND	31.04	5.24	58.25	-35.11	-168.9	ND
A-074922-062314-CM-MW-2	MW-2	--	6/23/2014	0.0439	ND	1.52	--	ND	ND	3.59	0.15	92.93	-36.47	-173.9	ND
A-074922-081814-CM-MW-2	MW-2	--	8/18/2014	0.463	ND	2.61	-22.64	ND	ND	29.43	8.31	58.37	-27.86	-164.8	ND
A-074922-102014-CM-MW-2	MW-2	--	10/20/2014	0.393	ND	1.37	-17.17	ND	ND	30.24	7.02	60.12	-36.20	-172.6	ND
A-074922-120114-CM-MW-2	MW-2	--	12/1/2014	0.291	ND	1.52	-15.87	ND	0.0231	24.47	3.51	69.24	-36.71	-169.7	ND
A-074922-092713-CM-MW-3	MW-3	--	9/27/2013	0.184	ND	0.91	-9.50	ND	ND	15.68	1.49	80.17	-36.53	-175.80	ND
A-074922-120213-WM-MW-3	MW-3	--	12/2/2013	0.681	ND	2.95	-27.48	ND	ND	39.74	10.34	45.54	-32.21	-166.2	ND
A-074922-021714-BJ-MW-3	MW-3	--	2/18/2014	0.595	ND	0.48	--	ND	ND	49.67	12.63	35.94	-36.12	-168.3	ND
A-074922-041614-KW-MW-3	MW-3	--	4/16/2014	0.938	ND	0.055	--	ND	ND	77.81	21.13	0.063	--	--	ND
A-074922-062314-CM-MW-3	MW-3	--	6/23/2014	0.92	ND	0.06	--	ND	ND	76.69	20.63	1.67	-36.64	-172.3	ND
A-074922-081814-CM-MW-3	MW-3	--	8/18/2014	0.919	ND	0.06	-34.78	ND	ND	76.48	20.60	1.90	-34.78	-165.3	ND
A-074922-102014-CM-MW-3	MW-3	--	10/20/2014	0.938	ND	0.05	--	ND	ND	77.69	21.32	0.00	--	--	ND
A-074922-120114-CM-MW-3	MW-3	--	12/1/2014	0.867	ND	4.14	-27.74	ND	ND	68.69	14.71	11.34	-34.67	-164.1	ND
A-074922-092713-CM-MW-DUP	MW-4	--	9/27/2013	0.411	ND	0.25	-15.35	ND	ND	34.90	0.65	62.61	-37.33	-172.90	ND
A-074922-092713-CM-MW-4	MW-4	--	9/27/2013	0.415	ND	0.25	-14.70	ND	0.0051	35.40	0.87	61.89	-37.34	-174.80	ND
A-074922-120213-WM-MW-4(1)	MW-4-1	--	12/2/2013	0.122	ND	1.29	-9.12	ND	ND	10.39	1.32	85.22	-36.51	-175.5	ND
A-074922-021714-BJ-MW-4(1)	MW-4-1	--	2/18/2014	0.149	ND	1.24	--	ND	ND	12.72	2.01	82.28	-36.38	-175.1	ND
A-074922-041614-KW-MW-4 (1)	MW-4-1	--	4/16/2014	0.0963	ND	1.36	--	ND	ND	8.51	0.42	87.92	-36.07	-173.3	ND
A-074922-062314-CM-MW-4 (1)	MW-4-1	--	6/23/2014	0.298	ND	0.92	--	ND	ND	23.32	0.09	72.05	-36.64	-173.8	ND
A-074922-081814-CM-MW-4 (1)	MW-4-1	--	8/18/2014	0.405	ND	0.73	-21.21	ND	ND	50.18	6.91	40.83	-40.72	-170.7	ND
A-074922-120114-CM-MW-4 (1)	MW-4-1	--	12/1/2014	0.349	ND	0.93	-12.16	ND	ND	31.43	1.37	64.71	-36.45	-168.7	ND
A-074922-120114-CM-DUP	MW-4-1	--	12/1/2014	0.25	ND	0.77	-22.94	ND	0.0443	41.67	4.03	52.13	-40.34	-178.2	ND
A-074922-120413-KW-MW-4(2)	MW-4-2	--	12/4/2013	0.099	ND	1.34	-9.16	ND	ND	8.48	0.76	87.62	-36.47	-177.10	ND
A-074922-021417-BJ-MW-4(2)	MW-4-2	--	2/18/2014	0.0838	ND	1.37	--	ND	ND	7.23	0.18	89.41	-36.35	-174.9	ND
A-074922-041614-KW-MW-4 (2)	MW-4-2	--	4/16/2014	0.071	ND	1.33	--	ND	ND	5.98	0.047	90.83	-36.41	-174.5	ND
A-074922-041614-KW-DUP	MW-4-2	--	4/16/2014	0.0752	ND	1.33	--	ND	ND	6.35	0.16	90.34	-36.33	-172.9	ND
A-074922-062314-CM-MW-4 (2)	MW-4-2	--	6/23/2014	0.0752	ND	1.32	--	ND	ND	6.38	0.13	90.38	-36.32	-176.7	0
A-074922-062314-CM-DUP	MW-4-2	--	6/23/2014	0.0707	ND	1.32	--	ND	ND	5.98	0.03	90.86	-36.32	-172.9	0
A-074922-082014-CM-MW-4(2)	MW-4-2	--	8/20/2014	0.128	ND	1.29	-9.55	ND	ND	11.34	0.03	85.58	-36.41	-175.3	ND
A-074922-102014-CM-MW-4(2)	MW-4-2	--	10/20/2014	0.0786	ND	1.36	-9.48	ND	ND	7.78	0.07	88.98	-36.55	-172.1	ND
A-074922-102014-CM-DUP	MW-4-2	--	10/20/2014	0.0788	ND	1.36	-9.42	ND	ND	7.81	0.07	88.95	-36.50	-169.1	ND
A-074922-120114-CM-MW-4(2)	MW-4-2	--	12/1/2014	0.191	ND	1.16	-10.40	ND	ND	17.96	0.03	79.13	-36.49	-171.7	ND

Notes:

[1] New Mexico currently has no groundwater or groundwater headspace standards for the parameters analyzed.

[2] The carrier gas used in nitrogen analysis interferes with atmospheric nitrogen.

[3] -- Indicates not analyzed

[4] ND Indicates not detected by mass spectroscopy

[5] NS Indicates not sampled

[6] NE indicates not established

GAS HYDROCARBON AND FIXED GASES
ANALYTICAL RESULTS SUMMARY FROM OPEN MONITOR WELL
CASING AND GAS PORT SAMPLES
MARCH 2013 - DECEMBER 2014
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Sample ID	Well	Zone	Date Sampled	Ethane			Propylene	Propane	Isobutane	N-butane	Iso-pentane	N-pentane	Hexanes+	Total (BTU/ft^3)	Specific Gravity
				Chemical mol. %	$\delta^{13}C$‰	δD‰	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %	Chemical mol. %		
New Mexico Standards [1]				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
A-074922-032213-CM-MW-1(2)	MW-1	--	3/22/2013	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	0.97
A-074922-032213-CM-MW-1(3)	MW-1	--	3/22/2013	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	0.968
A-074922-032213-CM-MW-1-DUP	MW-1	--	3/22/2013	ND	--	--	ND	ND	ND	ND	ND	ND	ND	0	0.968
A-074922-032213-CM-CPW	MW-1	--	3/22/2013	1.39	--	--	ND	1.60	0.0333	0.0148	0.0069	0.0018	0.003	895	0.627
A-074922-081814-CM-DUP	MW-1	--	8/18/2014	1.140	-23.78	-135.1	ND	0.1260	0.0246	0.0116	0.0051	0.0015	0.0023	746	0.682
A-074922-092713-CM-MW-2	MW-2	--	9/27/2013	1.37	-23.69	-135.60	ND	0.164	0.0364	0.0170	0.0081	0.0024	0.0048	859	0.642
A-074922-120213-CM-MW-2	MW-2	--	12/2/2013	0.181	-27.70	--	ND	0.0088	ND	0.0004	0.0004	ND	0.0008	128	0.952
A-074922-120213-CM-DUP	MW-2	--	12/2/2013	0.0056	--	--	ND	0.0004	ND	ND	0.0006	ND	0.0006	7	1.012
A-074922-021714-BJ-MW-2	MW-2	--	2/18/2014	0.515	-21.58	-120.3	ND	0.0578	0.0115	0.0030	0.0008	0.0002	0.0003	434	0.835
A-074922-021714-BJ-DUP	MW-2	--	2/18/2014	0.7750	-22.5600	-127.2	ND	0.0872	0	0.0069	0.0028	0.0006	0.0008	548	0.783
A-074922-041614-KW-MW-2	MW-2	--	4/16/2014	0.604	-21.49	-119.9	ND	0.0746	0.0214	0.0040	0.0016	0.0003	0.0002	604	0.76
A-074922-062314-CM-MW-2	MW-2	--	6/23/2014	1.530	-23.69	-136.6	ND	0.1720	0.0368	0.0172	0.0368	0.0172	0.0034	976	0.595
A-074922-081814-CM-MW-2	MW-2	--	8/18/2014	0.681	-19.55	-115.0	0.0001	0.0980	0.0240	0.0082	0.0024	0.0007	0.0005	607	0.755
A-074922-102014-CM-MW-2	MW-2	--	10/20/2014	0.732	-23.95	-119.3	ND	0.0862	0.0222	0.0079	0.0025	0.0010	0.0006	625	0.739
A-074922-120114-CM-MW-2	MW-2	--	12/1/2014	0.828	-24.41	-126.0	0.0001	0.0852	0.0244	0.0080	0.0027	0.0010	0.0007	720	0.697
A-074922-092713-CM-MW-3	MW-3	--	9/27/2013	1.34	-23.64	-136.20	ND	0.158	0.0342	0.0159	0.0077	0.0024	0.0050	843	0.646
A-074922-120213-WM-MW-3	MW-3	--	12/2/2013	0.634	-21.88	-131.3	ND	0.0801	0.0211	0.0064	0.0032	0.0008	0.0016	476	0.814
A-074922-021714-BJ-MW-3	MW-3	--	2/18/2014	0.590	-23.53	-132.3	ND	0.0650	0.0151	0.0061	0.0032	0.0008	0.0018	377	0.842
A-074922-041614-KW-MW-3	MW-3	--	4/16/2014	0.0009	--	--	ND	0.0002	ND	ND	ND	ND	ND	1	1
A-074922-062314-CM-MW-3	MW-3	--	6/23/2014	0.026	--	--	ND	0.0034	0.0007	0.0004	0.0001	ND	ND	17	0.993
A-074922-081814-CM-MW-3	MW-3	--	8/18/2014	0.030	--	--	ND	0.0040	0.0009	0.0004	0.0002	ND	ND	20	0.992
A-074922-102014-CM-MW-3	MW-3	--	10/20/2014	0.000	--	--	ND	ND	ND	ND	ND	ND	ND	0	1.001
A-074922-120114-CM-MW-3	MW-3	--	12/1/2014	0.198	-22.48	--	ND	0.0382	0.0093	0.0037	0.0021	0.0005	0.0008	120	0.968
A-074922-092713-CM-MW-DUP	MW-4	--	9/27/2013	1.02	-23.99	-129.10	ND	0.114	0.0234	0.0109	0.0049	0.0015	0.0027	657	0.714
A-074922-092713-CM-MW-4	MW-4	--	9/27/2013	1.01	-23.94	-137.70	ND	0.113	0.0232	0.0108	0.0049	0.0015	0.0043	649	0.718
A-074922-120213-WM-MW-4(1)	MW-4-1	--	12/2/2013	1.42	-23.79	-137.9	ND	0.167	0.0362	0.0167	0.0078	0.0025	0.0059	896	0.627
A-074922-021714-BJ-MW-4(1)	MW-4-1	--	2/18/2014	1.37	-23.74	-136.8	ND	0.163	0.0355	0.0164	0.0077	0.0025	0.0049	865	0.64
A-074922-041614-KW-MW-4 (1)	MW-4-1	--	4/16/2014	1.450	-23.67	-135.8	ND	0.1730	0.0371	0.0172	0.0081	0.0027	0.0078	924	0.615
A-074922-062314-CM-MW-4 (1)	MW-4-1	--	6/23/2014	1.150	-23.97	-136.3	ND	0.1270	0.0249	0.0117	0.0050	0.0002	0.0031	755	0.678
A-074922-081814-CM-MW-4 (1)	MW-4-1	--	8/18/2014	0.822	-25.36	-133.7	ND	0.0884	0.0153	0.0103	0.0044	0.0016	0.0020	432	0.815
A-074922-120114-CM-MW-4 (1)	MW-4-1	--	12/1/2014	1.060	-23.84	-132.8	ND	0.1150	0.0221	0.0101	0.0047	0.0015	0.0024	679	0.71
A-074922-120114-CM-DUP	MW-4-1	--	12/1/2014	0.988	-25.41	-137.5	ND	0.0880	0.0139	0.0075	0.0040	0.0075	0.0020	549	0.764
A-074922-120413-KW-MW-4(2)	MW-4-2	--	12/4/2013	1.46	-23.93	-139.00	ND	0.173	0.0375	0.0174	0.0084	0.0028	0.0063	921	0.617
A-074922-021417-BJ-MW-4(2)	MW-4-2	--	2/18/2014	1.48	-23.73	-135.9	ND	0.175	0.0377	0.0176	0.0082	0.0027	0.0050	940	0.609
A-074922-041614-KW-MW-4 (2)	MW-4-2	--	4/16/2014	1.490	-23.88	-137.0	ND	0.1770	0.0382	0.0175	0.0082	0.0026	0.0073	954	0.602
A-074922-041614-KW-DUP	MW-4-2	--	4/16/2014	1.490	-23.71	-135.6	ND	0.1770	0.0382	0.0175	0.0081	0.0026	0.0090	950	0.605
A-074922-062314-CM-MW-4 (2)	MW-4-2	--	6/23/2014	1.470	-23.76	-136.4	ND	0.1730	0.0368	0.0166	0.0075	0.0023	0.0038	949	0.604
A-074922-062314-CM-DUP	MW-4-2	--	6/23/2014	1.490	-23.32	-172.9	ND	0.1770	0.0381	0.0175	0.0081	0.0026	0.0048	955	0.602
A-074922-082014-CM-MW-4(2)	MW-4-2	--	8/20/2014	1.400	-23.71	-135.5	ND	0.1650	0.0305	0.0162	0.0076	0.0025	0.0034	899	0.624
A-074922-102014-CM-MW-4(2)	MW-4-2	--	10/20/2014	1.490	-23.83	-134.9	ND	0.1710	0.0362	0.0166	0.0077	0.0027	0.0053	935	0.61
A-074922-102014-CM-DUP	MW-4-2	--	10/20/2014	1.490	-23.76	-129.7	ND	0.1710	0.0359	0.0163	0.0076	0.0026	0.0049	935	0.61
A-074922-120114-CM-MW-4(2)	MW-4-2	--	12/1/2014	1.320	-23.78	-132.7	ND	0.1470	0.0295	0.0134	0.0061	0.0020	0.0029	831	0.65

Notes:

[1] New Mexico currently has no groundwater or groundwater headspace standards for

[2] The carrier gas used in nitrogen analysis interferes with atmospheric nitrogen.

[3] -- Indicates not analyzed

[4] ND Indicates not detected by mass spectroscopy

[5] NS Indicates not sampled

[6] NE indicates not established

TABLE 10

MONITOR WELL INSTALLATION DATA
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Zone	MW-1			MW-2			MW-3			MW-4		
	Waterloo System	Depth (ft bgs)	Elevation (ft NAVD 88)	Waterloo System Part	Depth (ft bgs)	Elevation (ft NAVD 88)	Waterloo System Part	Depth (ft bgs)	Elevation (ft NAVD 88)	Waterloo System Part	Depth (ft bgs)	Elevation (ft NAVD 88)
"A" SAND	Top Screen A	320	6324.72	Top Screen A	339	6333.61	Top Screen A	329	6322.00	Top Screen A	344	6310.97
				Gas Port	343	6329.61	Gas Port	334	6317.00	Gas Port	349	6305.97
	Port 5	340	6304.72	Port 2	398.5	6274.11	Port 4	349.5	6301.50	Port 4	364.5	6290.47
	Bottom Screen A	360	6284.72	Bottom Screen A	399	6273.61	Bottom Screen A	349	6302.00	Bottom Screen A	364	6290.97
"B" SAND	Top Screen B	380	6264.72	NOT SCREENED								
	Port 4	390	6254.72									
	Bottom Screen B	400	6244.72									
"C" SAND	Top Screen C	420	6224.72	Top Screen C	444	6228.61	Top Screen C	419	6232.00	Top Screen C	419	6235.97
	Port 3	432	6212.72	Port 1	450	6222.61	Port 3	435	6216.00	Port 3	435	6219.97
	Bottom Screen C	440	6204.72	Bottom Screen C	464	6208.61	Bottom Screen C	439	6212.00	Bottom Screen C	439	6215.97
"D" SAND	Top Screen D	490	6154.72	NOT SCREENED			Top Screen D	499	6152.00	Top Screen D	499	6155.97
	Port 2	522	6122.72				Port 2	510.5	6140.50	Port 2	510.5	6144.47
	Bottom Screen D	540	6104.72				Bottom Screen D	539	6112.00	Bottom Screen D	539	6115.97
"E" SAND	NOT SCREENED						Top Screen E	569	6082.00	Top Screen E	569	6085.97
							Port 1	580	6071.00	Port 1	580	6074.97
							Bottom Screen E	589	6062.00	Bottom Screen E	589	6065.97
"F" SAND	NOT SCREENED											
"G" SAND	Top Screen G	680	5964.72	NOT SCREENED								
	Port 1	699	5945.72									
	Bottom Screen G	710	5934.72									
-	Sump	710-715	NA	Sump	464-469		Sump	589-594		Sump	589-594	
	TD	715	5929.72	TD	469.32	6203.29	TD	594.32	6056.68	TD	594.32	6060.65

Notes:
[1] ft bgs = feet below ground surface
[2] NAVD = North American Vertical Datum, 1988
[3] TD = Terminal Depth

TABLE 11

GROUNDWATER ELEVATION DATA SUMMARY
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Date	MW-1					MW-2		MW-3				MW-4			
	"A" SAND	"B" SAND	"C" SAND	"D" SAND	"G" SAND	"A" SAND	"C" SAND	"A" SAND	"C" SAND	"D" SAND	"E" SAND	"A" SAND	"C" SAND	"D" SAND	"E" SAND
12/11/2012	Dry	Dry	6217.76	6195.26	6196.92	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
2/28/2013	Dry	Dry	NA	NA	NA	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
3/22/2013	Dry	Dry	6236.27	6212.87	6201.69	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
6/18/2013	Dry	Dry	NA	NA	NA	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
10/7-10/2013	Dry	Dry	NA	NA	NA	6334.59	6238.53	Dry	6217.97	6141.81	6071.23	Dry	6221.16	6145.59	6076.41
10/22/2013	Dry	Dry	6217.71	6195.82	6194.70	6317.14	6237.38	Dry	6217.02	6196.23	6190.71	Dry	6229.77	6185.52	6191.60
12/3-5/2013	Dry	Dry	6217.69	6195.39	6194.33	6298.73	6237.24	Dry	6221.20	6188.63	6188.27	Dry	6229.29	6184.57	6189.20
2/17-19/2014	Dry	Dry	6217.63	6195.91	6194.10	6288.77	6237.26	Dry	6220.01	6191.26	6187.33	Dry	6229.28	6184.56	6188.34
4/14-16/2014	Dry	Dry	6217.60	6195.82	6193.70	6286.14	6237.19	Dry	6221.80	6190.14	6187.07	Dry	6229.13	6184.54	6186.92
6/23-26/2014	Dry	Dry	6217.60	6194.30	6193.40	6286.00	6237.10	Dry	6221.10	6291.60	6186.70	Dry	6229.00	6184.70	6187.60
8/18-20/2014	Dry	Dry	6217.6	6194.1	6193.2	6286.0	6237.1	Dry	6221.6	6190.6	6186.4	Dry	6229.4	6185.0	6187.3
10/20-21/2014	Dry	Dry	6217.5	6194.1	6192.9	6286.1	6237.4	Dry	6221.2	6193.1	6186.2	Dry	6229.3	6184.9	6187.2
12/1/2014	Dry	Dry	6217.5	6193.8	6193.1	6286.1	6237.7	Dry	6221.3	6191.7	6186.1	Dry	6229.3	6184.9	6187.1

Notes:

[1] Groundwater elevations in feet, North American Vertical Datum, 1988

[2] NI: Not installed

[3] NA: indicates transducer reading not available or not collected

TABLE 12

SULFATE-REDUCING BACTERIAL-BART RESULTS
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Well	*Zone*	*Collection Date*	*Result Date*	*Number of Days*	*Approximate SRB Population (CFU/mL)*
DW-2992	--	9/19/2013	10/4/2013	15	< 200
DW-3259	--	9/19/2013	9/25/2013	6	1,200
DW-3823P1 COLD	--	9/19/2013	9/30/2013	11	< 200
DW-3823P1 HOT	--	9/19/2013	10/4/2013	15	< 200
MW-1	Zone C	6/18/2013	6/20/2013	2	>700,000
MW-1	Zone C	10/2/2013	10/6/2013	4	18,000
MW-1	Zone C	12/6/2013	10/10/2013	4	18,000
MW-1	Zone C	2/18/2014	2/22/2014	4	18,000
MW-1	Zone C	4/15/2014	4/20/2014	5	5,000
MW-1	Zone C	6/24/2014	6/28/2014	5	5,000
MW-1	Zone C	8/19/2014	8/21/2014	2	700,000
MW-1	Zone C	10/21/2014	10/26/2014	5	6,000
MW-1	Zone C	12/3/2014	12/9/2014	6	1,400
MW-1	Zone D	6/18/2013	6/20/2013	2	>700,000
MW-1	Zone D	9/26/2013	10/2/2013	6	1,200
MW-1	Zone D	12/6/2013	12/14/2013	8	200
MW-1	Zone D	2/18/2014	2/22/2014	4	18,000
MW-1	Zone D	4/15/2014	4/20/2014	5	5,000
MW-1	Zone D	6/24/2014	6/29/2014	4	18,000
MW-1	Zone D	8/19/2014	8/22/2014	3	18,000 -700,000
MW-1	Zone D	10/21/2014	10/26/2014	5	6,000
MW-1	Zone D	12/2/2014	12/6/2014	4	27,000
MW-1	Zone G	6/18/2013	6/22/2013	4	18,000
MW-1	Zone G	9/26/2013	10/3/2013	7	200
MW-1	Zone G	12/5/2013	12/10/2013	5	5,000
MW-1	Zone G	2/19/2014	2/26/2014	7	200
MW-1	Zone G	4/15/2014	4/24/2014	9	< 200
MW-1	Zone G	6/24/2014	7/1/2014	7	200
MW-1	Zone G	8/20/2014	8/28/2014	8	200
MW-1	Zone G	10/21/2014	10/29/2014	8	75
MW-1	Zone G	12/2/2014	12/11/2014	9	20
MW-2	Zone A	12/3/2013	12/9/2013	6	1,200
MW-2	Zone C	12/3/2013	12/13/2013	13	< 200
MW-2	Zone C	2/19/2014	2/24/2014	5	5,000
MW-2	Zone C	4/14/2014	4/18/2014	4	18,000
MW-2	Zone C	6/23/2014	6/27/2014	4	18,000
MW-2	Zone C	8/18/2014	8/20/2014	2	700,000
MW-2	Zone C	10/22/2014	10/24/2014	2	500,000
MW-2	Zone C	12/1/2014	12/7/2014	6	1,400
MW-3	Zone D	12/5/2013	12/14/2013	9	< 200
MW-3	Zone D	2/19/2014	2/28/2014	9	< 200
MW-3	Zone D	4/14/2014	4/24/2014	10	< 200
MW-3	Zone D	6/25/2014	7/4/2014	9	< 200
MW-3	Zone D	8/19/2014	8/27/2014	8	200
MW-3	Zone D	10/21/2014	10/28/2014	7	325
MW-3	Zone D	12/2/2004	12/10/2014	8	75
MW-4	Zone D	12/4/2013	12/6/2013	2	>700,000
MW-4	Zone D	2/18/2014	2/19/2014	1	>700,000
MW-4	Zone D	4/17/2014	4/18/2014	1	> 700,000
MW-4	Zone D	6/26/2014	6/25/2014	<1	> 700,000

TABLE 12

SULFATE-REDUCING BACTERIAL-BART RESULTS
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Well	*Zone*	*Collection Date*	*Result Date*	*Number of Days*	*Approximate SRB Population (CFU/mL)*
MW-4	Zone D	8/20/2014	8/20/2014	<1	> 700,000
MW-4	Zone D	10/22/2014	10/22/2014	<1	2,200,000
MW-4	Zone D	12/3/2014	12/3/2014	<1	2,200,000
MW-4	Zone E	12/3/2013	12/4/2013	1	>700,000
MW-4	Zone E	2/18/2014	2/19/2014	1	>700,000
MW-4	Zone E	4/17/2014	4/18/2014	1	> 700,000
MW-4	Zone E	6/25/2014	6/25/2014	<1	> 700,000
MW-4	Zone E	8/20/2014	8/202014	<1	> 700,000
MW-4	Zone E	10/22/2014	10/22/2014	<1	2,200,000
MW-4	Zone E	12/3/2014	12/3/2014	<1	2,200,000

Notes:
[1] BART- Biological Activity Reaction Test
[2] CFU/mL- Colony Forming Unit per milliliter

TABLE 13

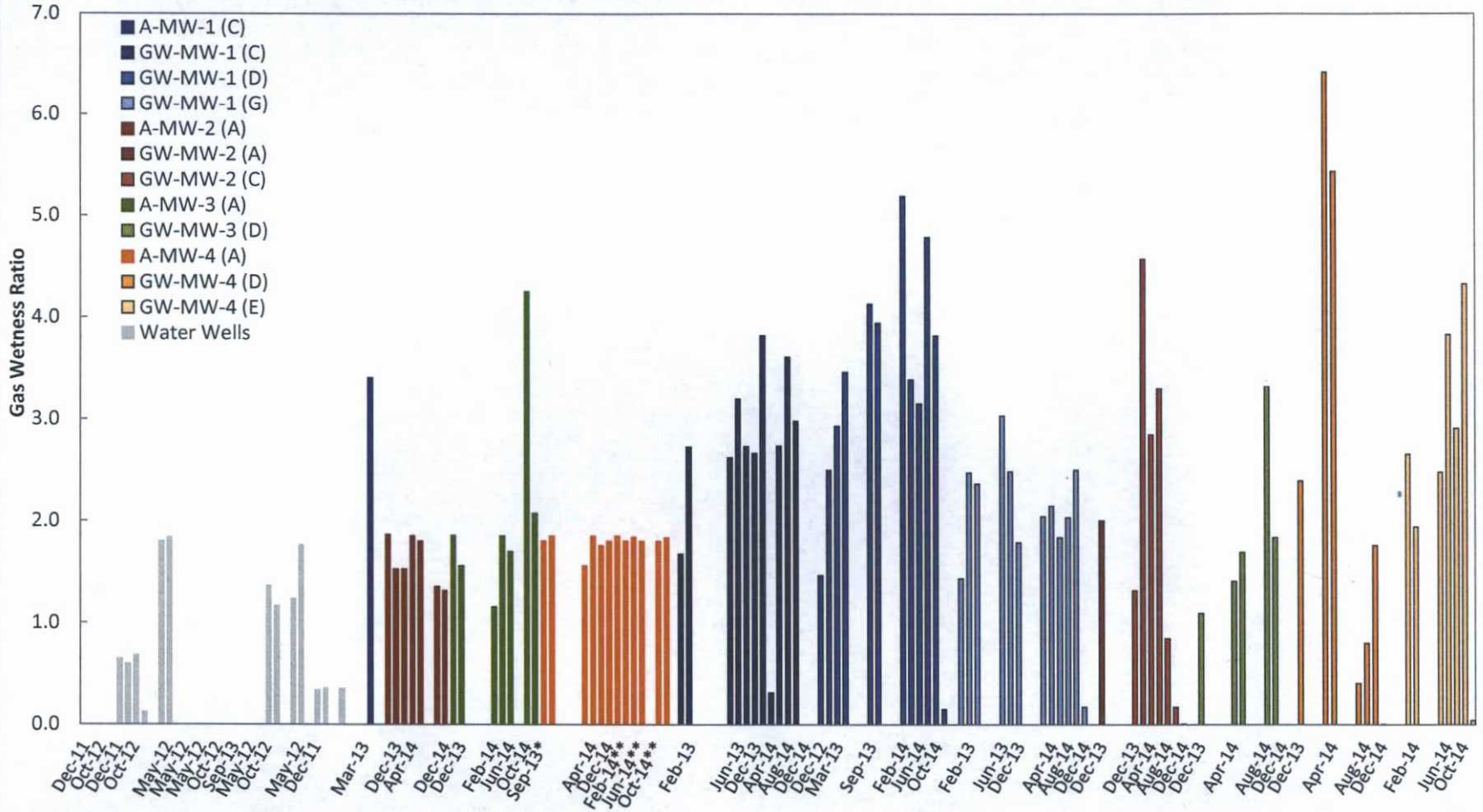
SUMMARY RESULTS FROM DRAEGER H_2S TUBES
December 2013- December 2014
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Well	*Date*	*H_2S (ppm)*
MW-2	Dec-13	2.5
MW-2	Feb-14	NS
MW-2	Apr-14	100
MW-2	Jun-14	0
MW-2	Aug-14	0
MW-2	Oct-14	2
MW-2	Dec-14	0
MW-3	Dec-13	1.26
MW-3	Feb-14	NS
MW-3	Apr-14	0
MW-3	Jun-14	0
MW-3(Zone C)	Jun-14	240
MW-3	Aug-14	0
MW-3	Oct-14	0
MW-3	Dec-14	1.5
MW-4 (1)	Dec-13	1.8
MW-4 (1)	Feb-14	NS
MW-4 (1)	Apr-14	10
MW-4 (1)	Jun-14	11
MW-4 (1)	Aug-14	14
MW-4 (1)	Oct-14	NS
MW-4 (1)	Dec-14	2
MW-4 (2)	Dec-13	NS
MW-4 (2)	Feb-14	NS
MW-4 (2)	Apr-14	0
MW-4 (2)	Jun-14	0
MW-4 (2)	Aug-14	2
MW-4 (2)	Oct-14	0
MW-4 (2)	Dec-14	2

Note:
NS = Not sampled

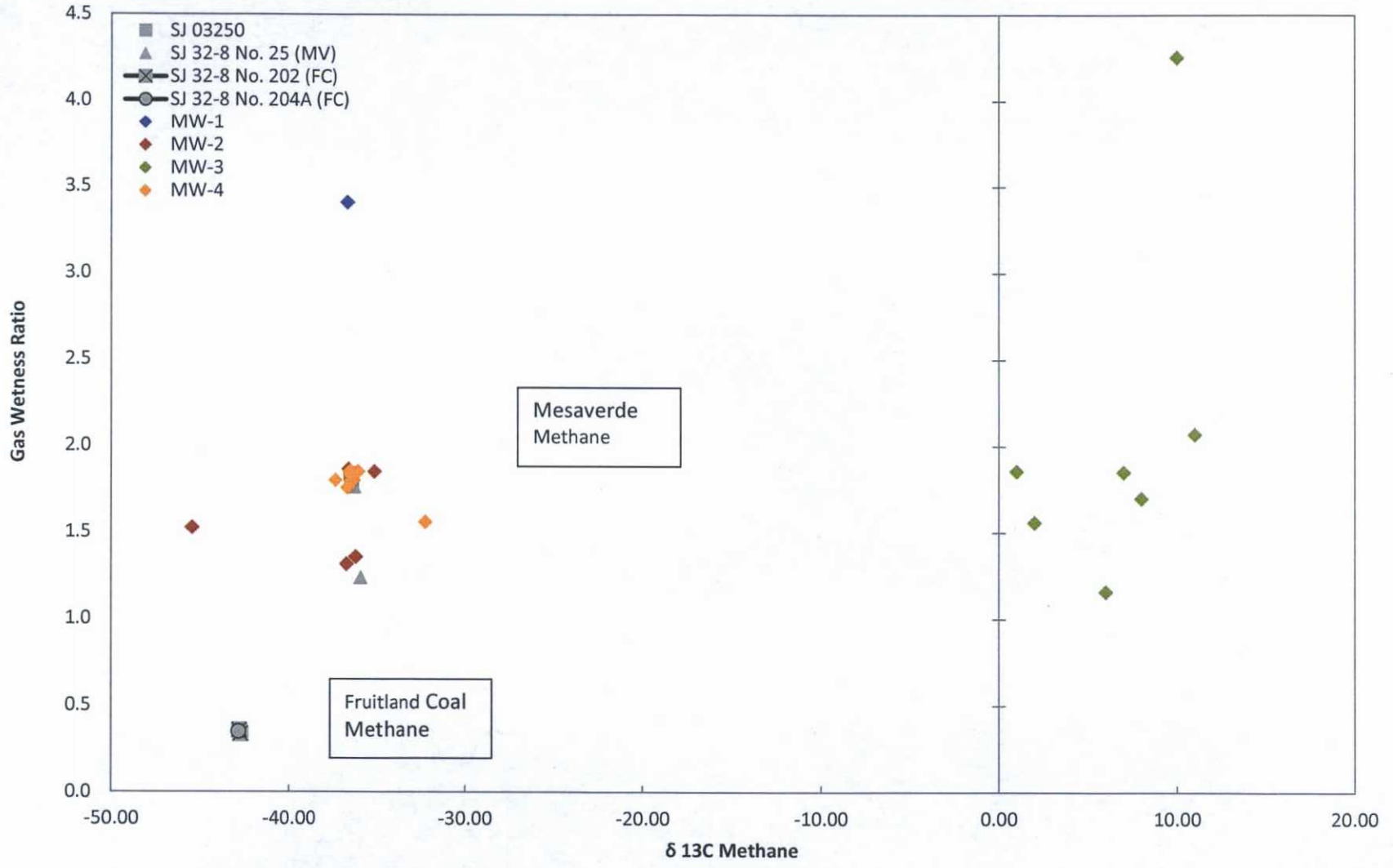
Charts

Chart 1: Gas Wetness Ratio of Gas and Headspace Samples



A-/GW-: Gas sample/Headspace sample
0 = Not Detected
Detection Limit = <0.0002 molar percent
(A) = Zone sampled
* = Sample collected from open well casing
** = Zone sampled using casing port
# = Cathodic Protection Well (CPW)
Water Well Dec-11 sample was removed as an outlier

Chart 2: δ 13C Methane vs Gas Wetness Ratio



Gas Wetness Ratio= $(\Sigma(C_2...C_5)/\Sigma(C_1...C_5)) \times 100$

Chart 3: δ13C Methane vs. δD Methane in Gas Samples

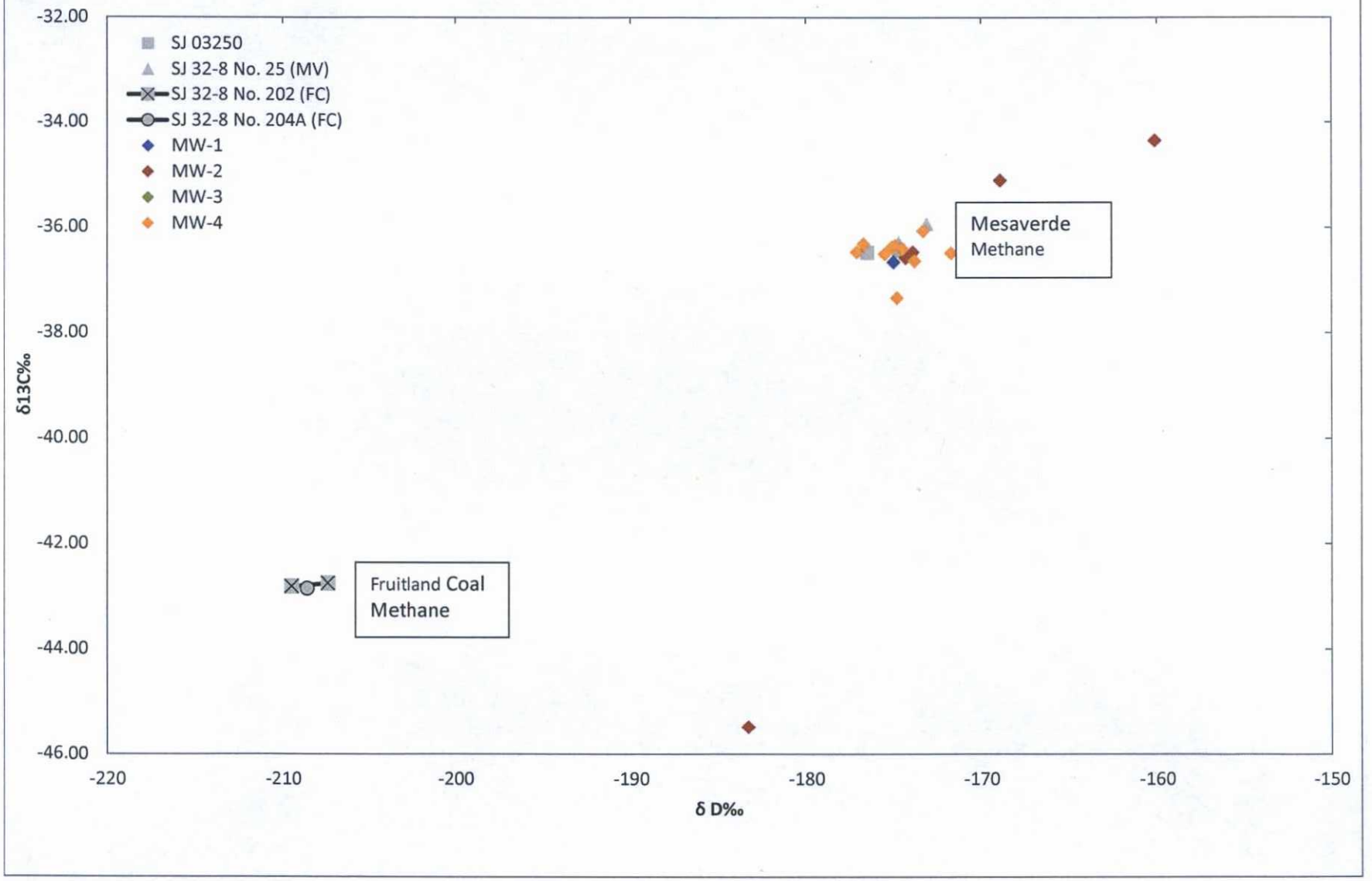


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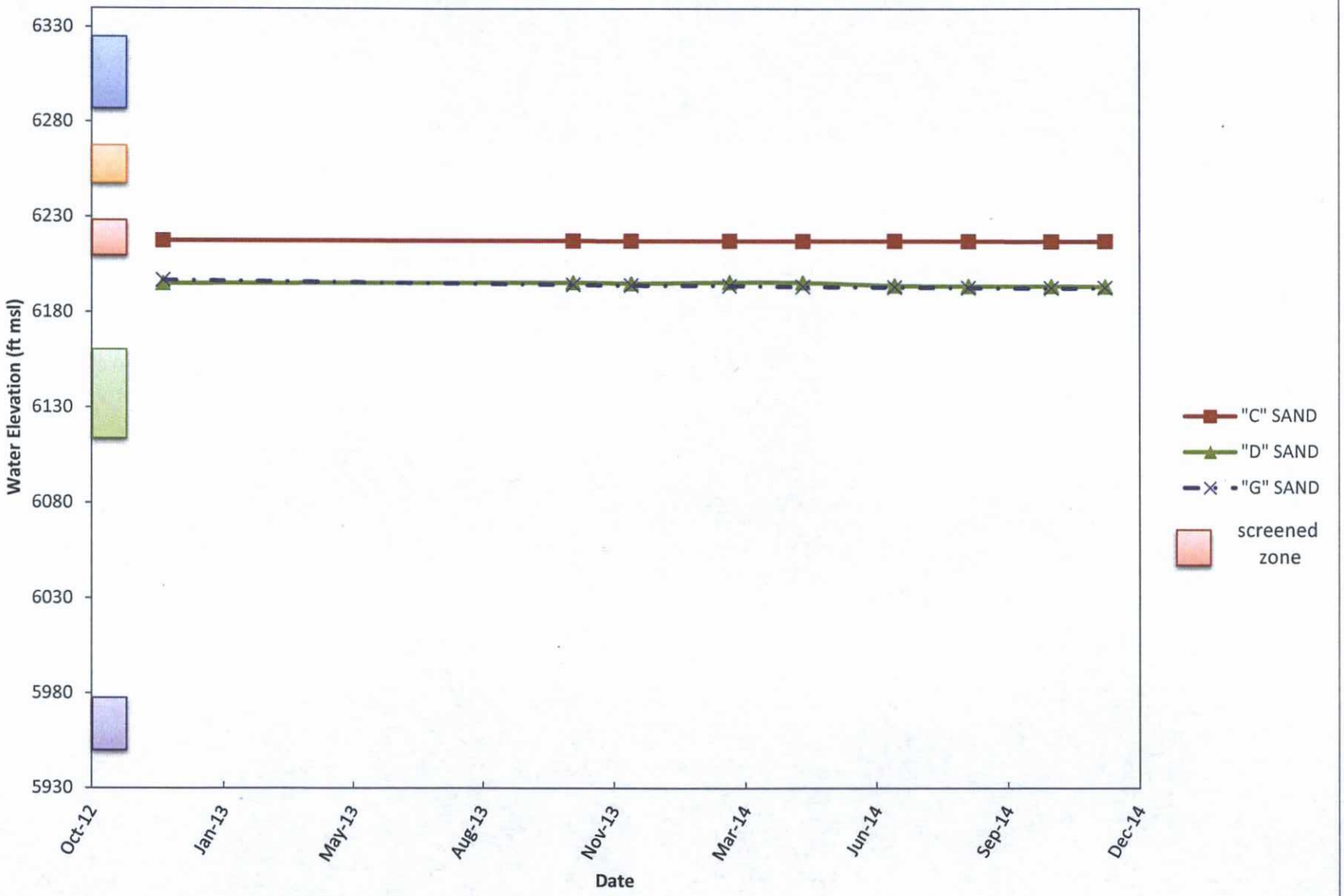
Chart 4A: MW-1 Groundwater Elevations



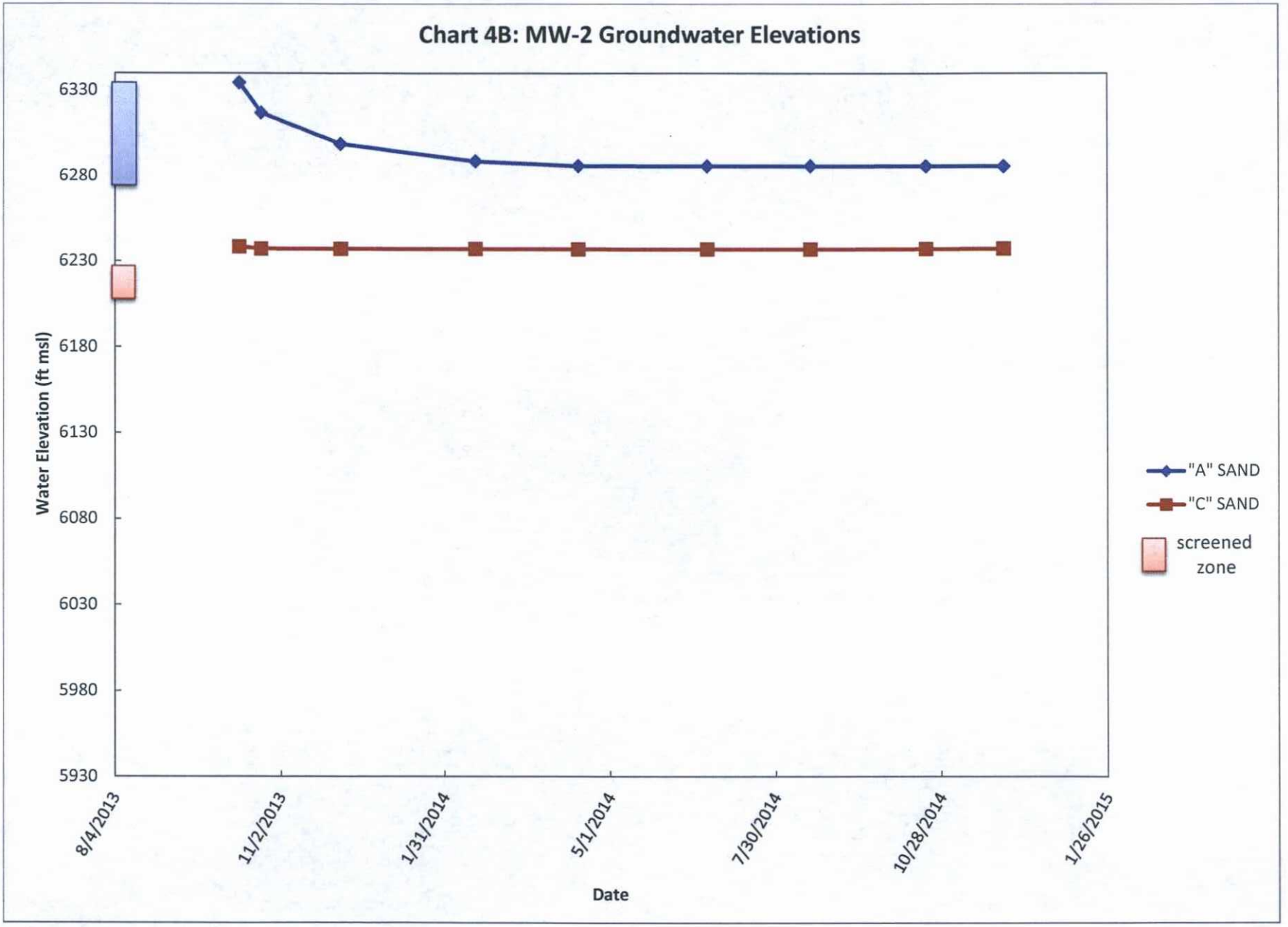
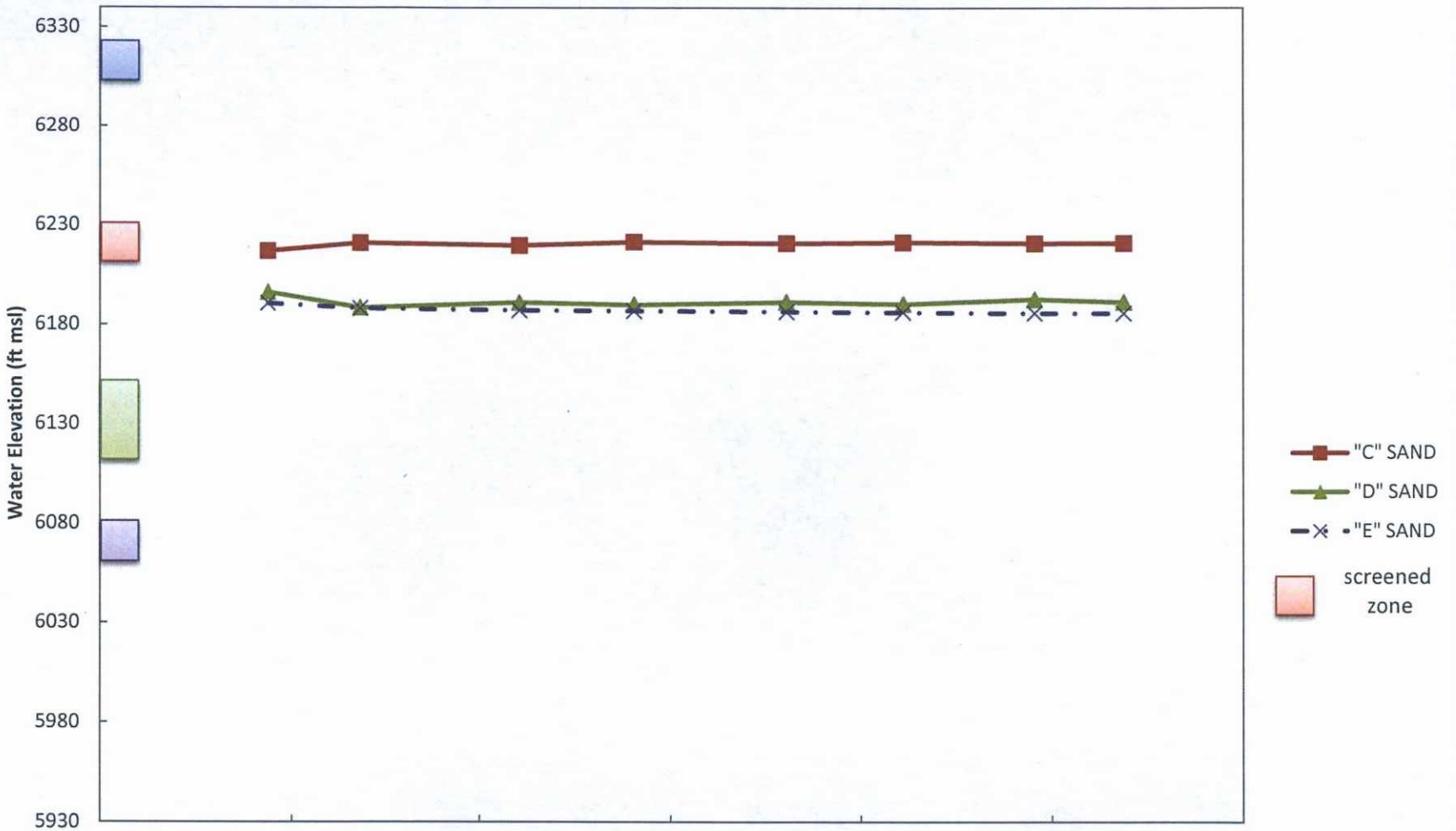


Chart 4B: MW-2 Groundwater Elevations
Water Elevation (ft msl)
6330
6280
6230
6180
6130
6080
6030
5980
5930
8/4/2013
11/2/2013
1/31/2014
5/1/2014
7/30/2014
10/28/2014
1/26/2015
Date
"A" SAND
"C" SAND
screened zone

Chart 4C: MW-3 Groundwater Elevations



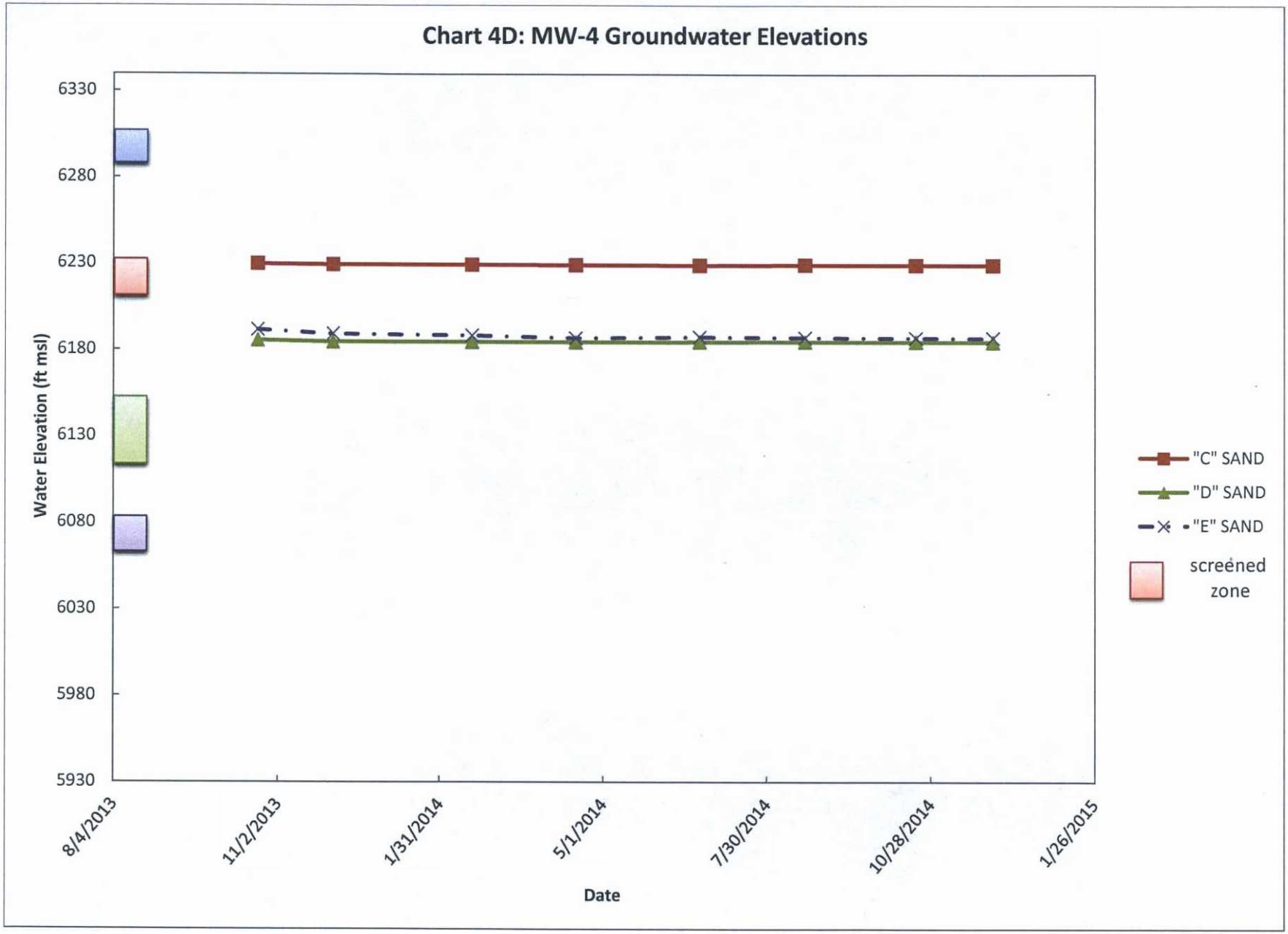
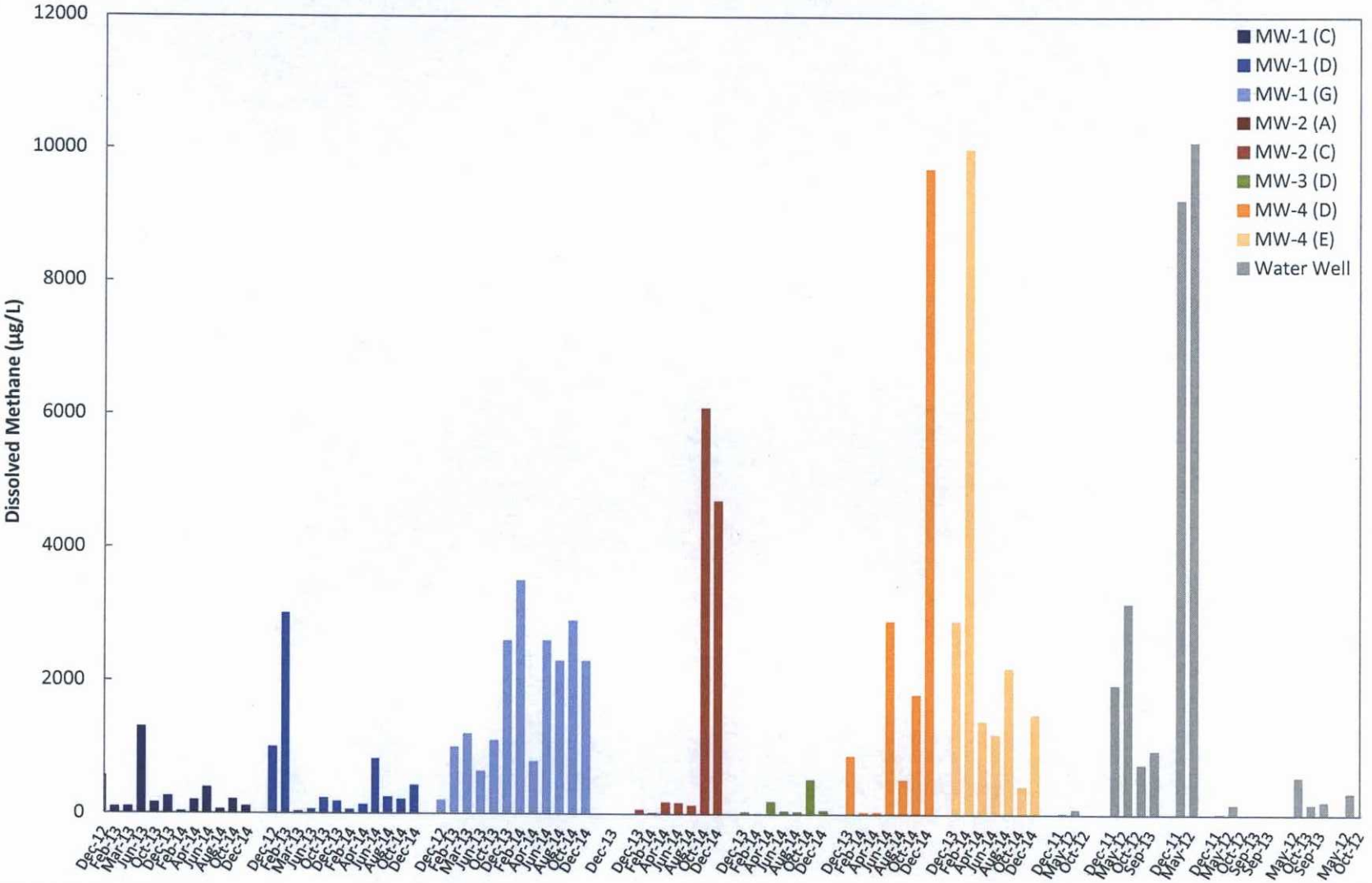


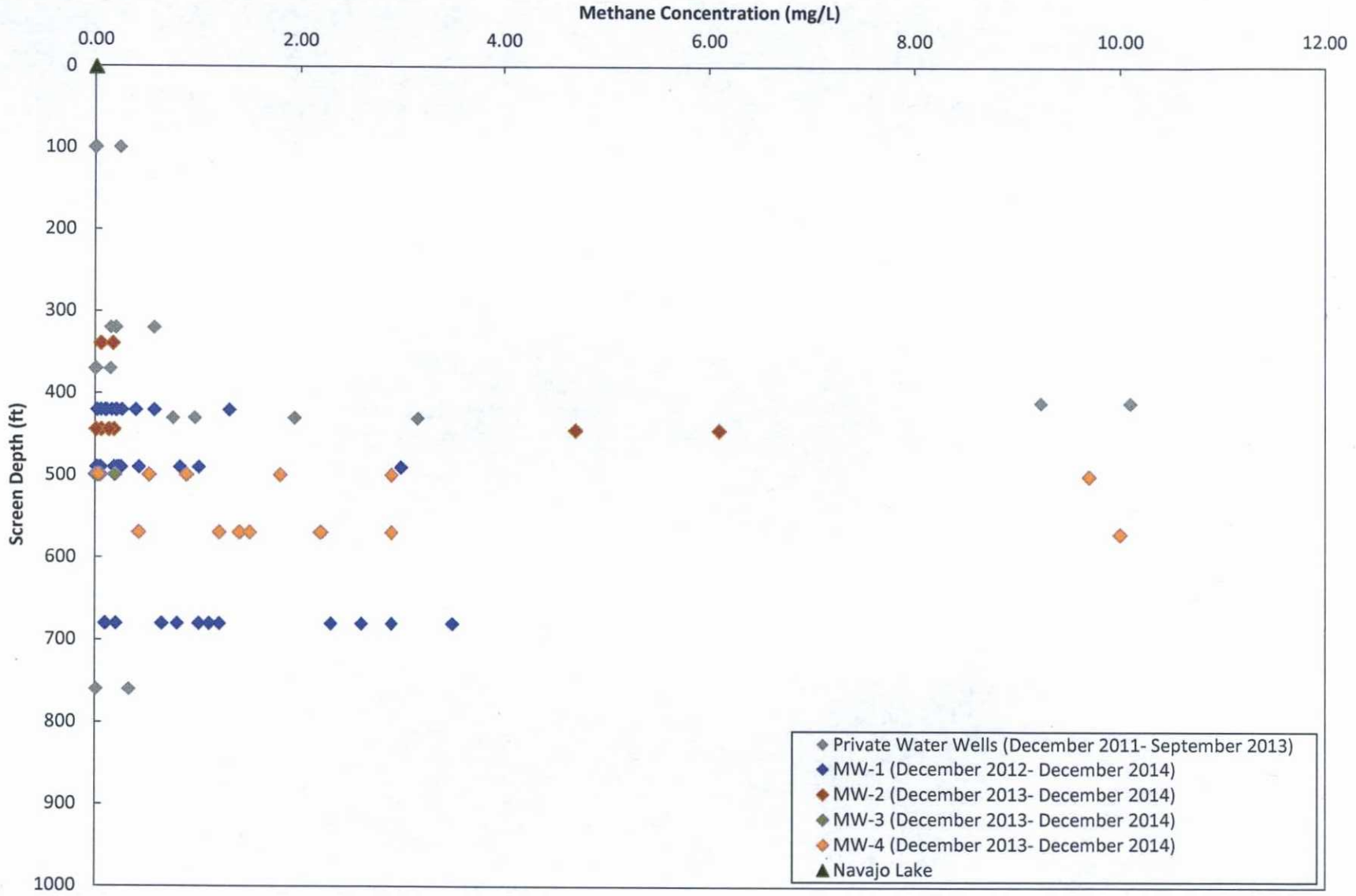
Chart 4D: MW-4 Groundwater Elevations
Water Elevation (ft msl)
6330
6280
6230
6180
6130
6080
6030
5980
5930
8/4/2013
11/2/2013
1/31/2014
5/1/2014
7/30/2014
10/28/2014
1/26/2015
Date
"C" SAND
"D" SAND
"E" SAND
screened zone

Chart 5A: Dissolved Methane Concentrations in Groundwater



0 = Not Sampled or Not Detected
Detection Limit = <0.2 ug/L
(A) = Zone sampled

Chart 5B: Methane Concentration vs. Depth



FC = Fruitland Coal
MV = Mesaverde

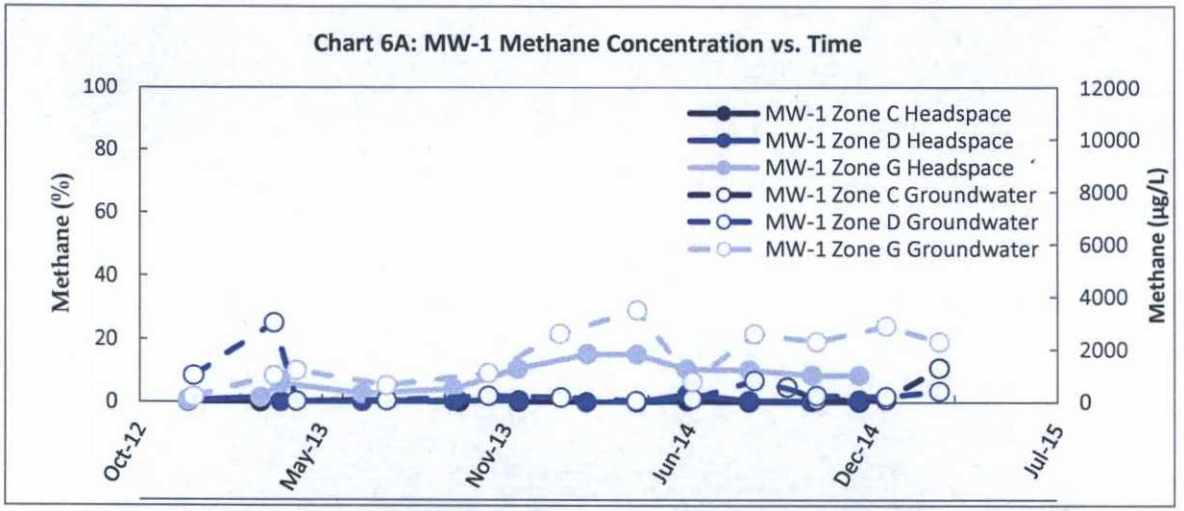


Chart 6A: MW-1 Methane Concentration vs. Time
Methane (%)
Methane (µg/L)
100
80
60
40
20
0
12000
10000
8000
6000
4000
2000
0
Oct-12
May-13
Nov-13
Jun-14
Dec-14
Jul-15
MW-1 Zone C Headspace
MW-1 Zone D Headspace
MW-1 Zone G Headspace
MW-1 Zone C Groundwater
MW-1 Zone D Groundwater
MW-1 Zone G Groundwater

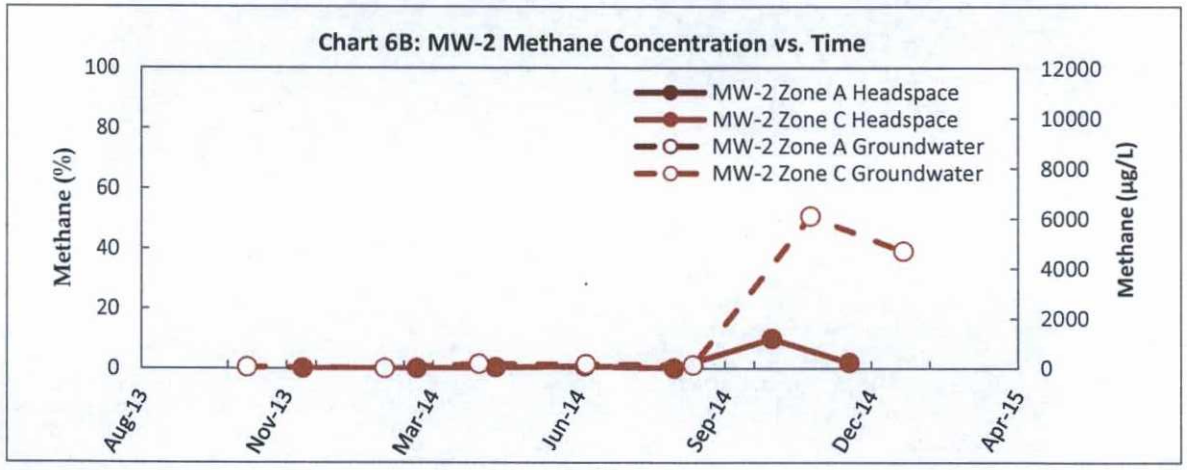


Chart 6B: MW-2 Methane Concentration vs. Time
Methane (%)
Methane (µg/L)
100
80
60
40
20
0
12000
10000
8000
6000
4000
2000
0
Aug-13
Nov-13
Mar-14
Jun-14
Sep-14
Dec-14
Apr-15
MW-2 Zone A Headspace
MW-2 Zone C Headspace
MW-2 Zone A Groundwater
MW-2 Zone C Groundwater

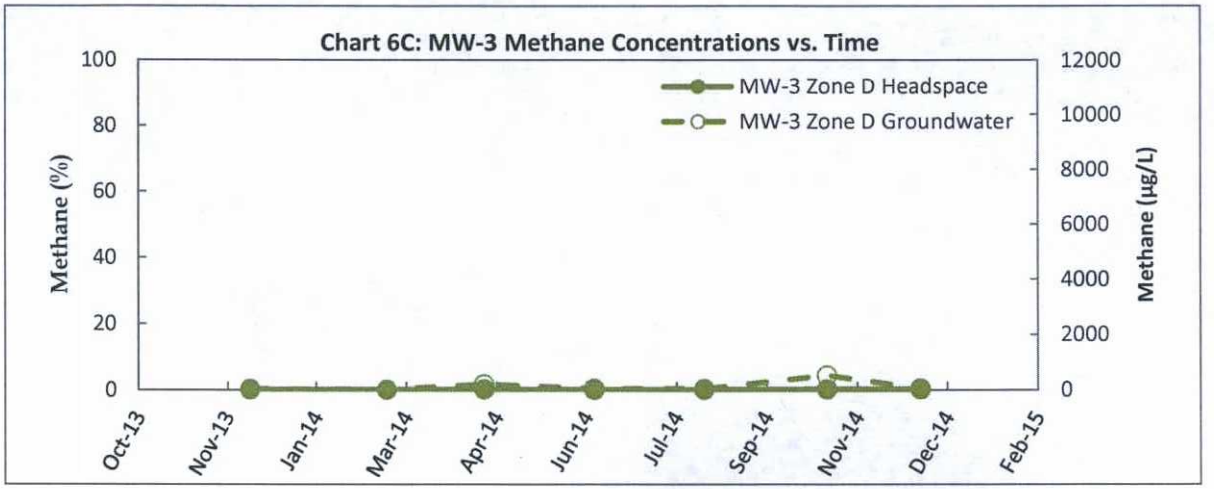


Chart 6C: MW-3 Methane Concentrations vs. Time
MW-3 Zone D Headspace
MW-3 Zone D Groundwater
Methane (%)
Methane (µg/L)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
12000
Oct-13
Nov-13
Jan-14
Mar-14
Apr-14
Jun-14
Jul-14
Sep-14
Nov-14
Dec-14
Feb-15

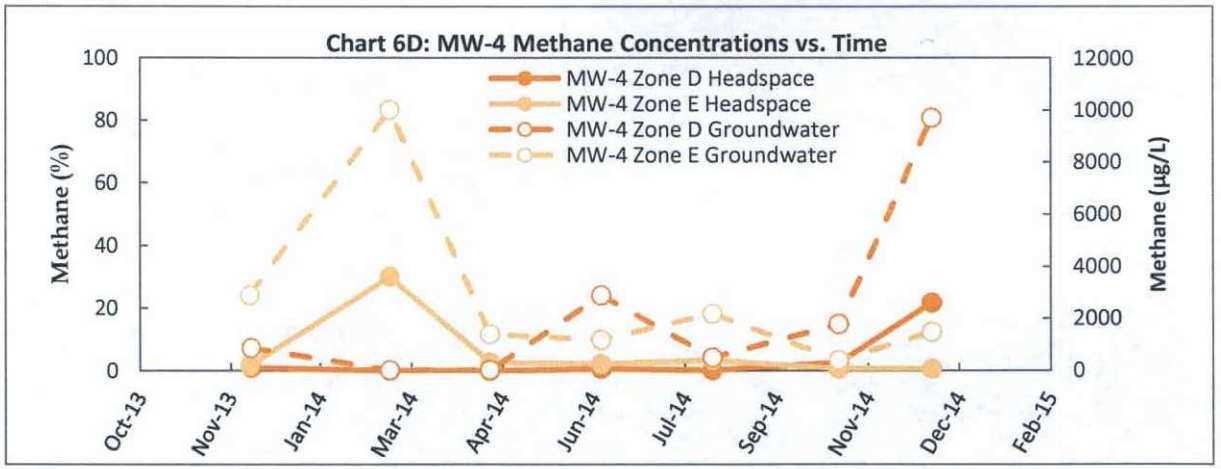


Chart 6D: MW-4 Methane Concentrations vs. Time
MW-4 Zone D Headspace
MW-4 Zone E Headspace
MW-4 Zone D Groundwater
MW-4 Zone E Groundwater
Methane (%)
Methane (µg/L)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
12000
Oct-13
Nov-13
Jan-14
Mar-14
Apr-14
Jun-14
Jul-14
Sep-14
Nov-14
Dec-14
Feb-15

Chart 7: Methane in Gas Samples

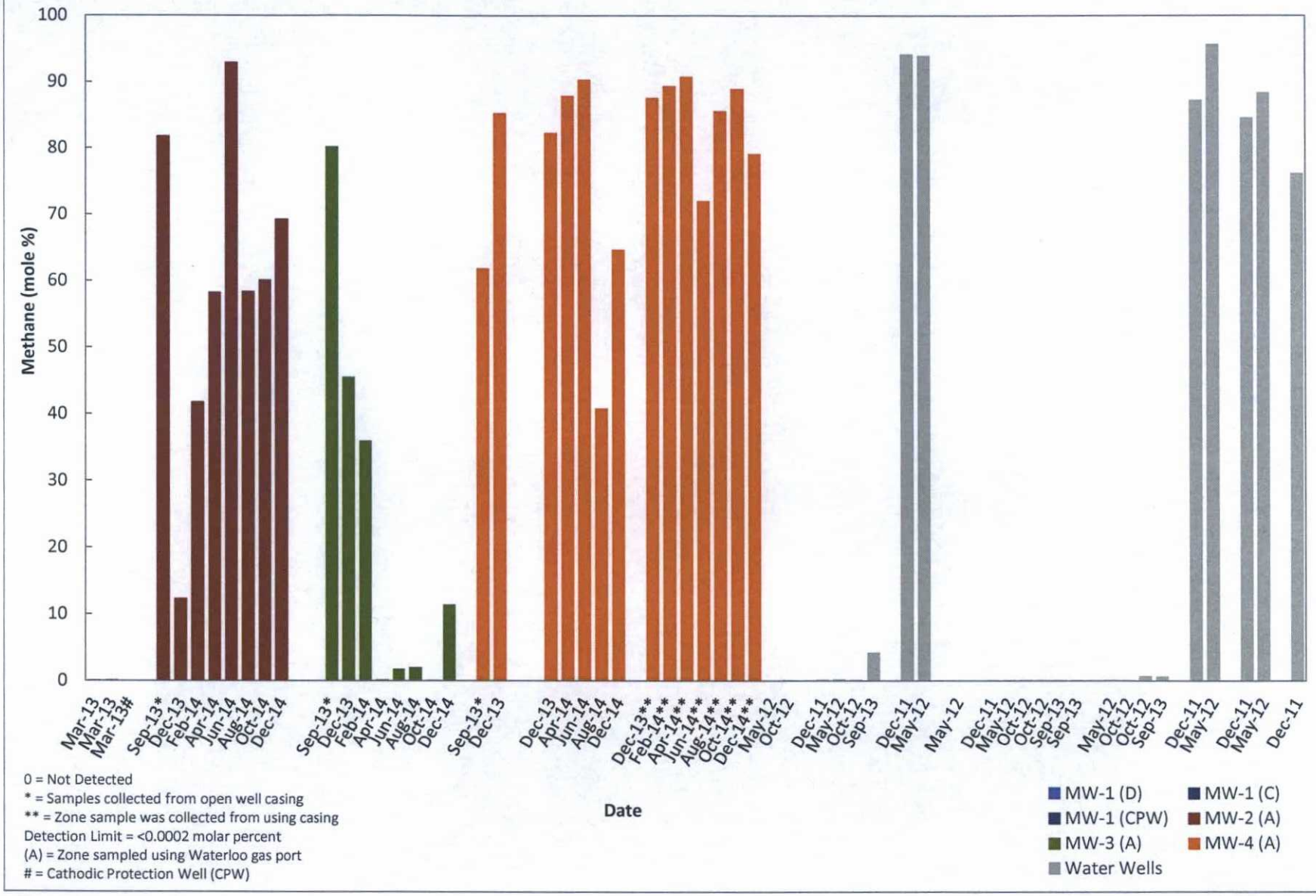
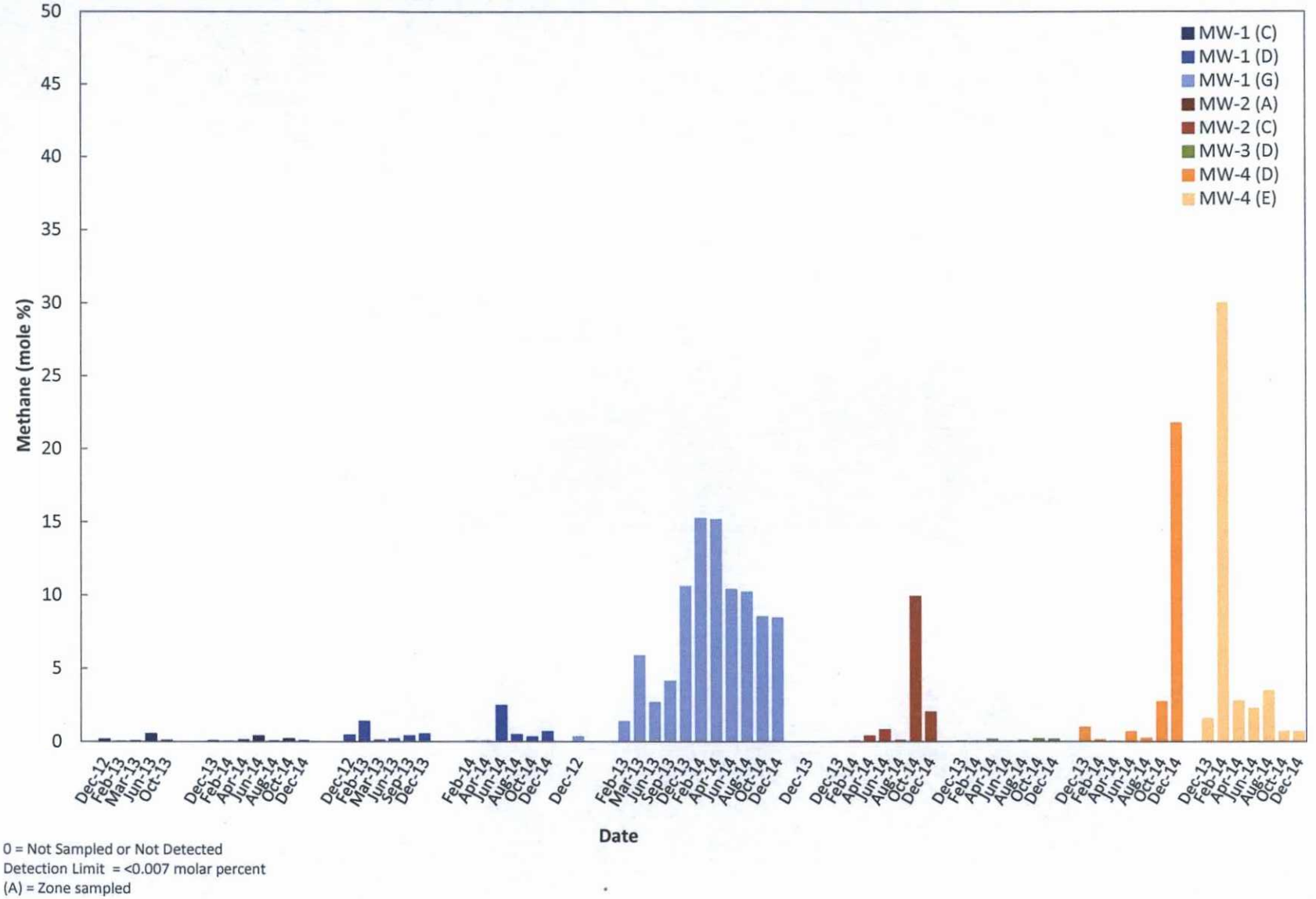


Chart 8: Methane in Headspace Samples



0 = Not Sampled or Not Detected
Detection Limit = <0.007 molar percent
(A) = Zone sampled

Chart 9A: Dissolved Total Sulfide Concentrations in Groundwater

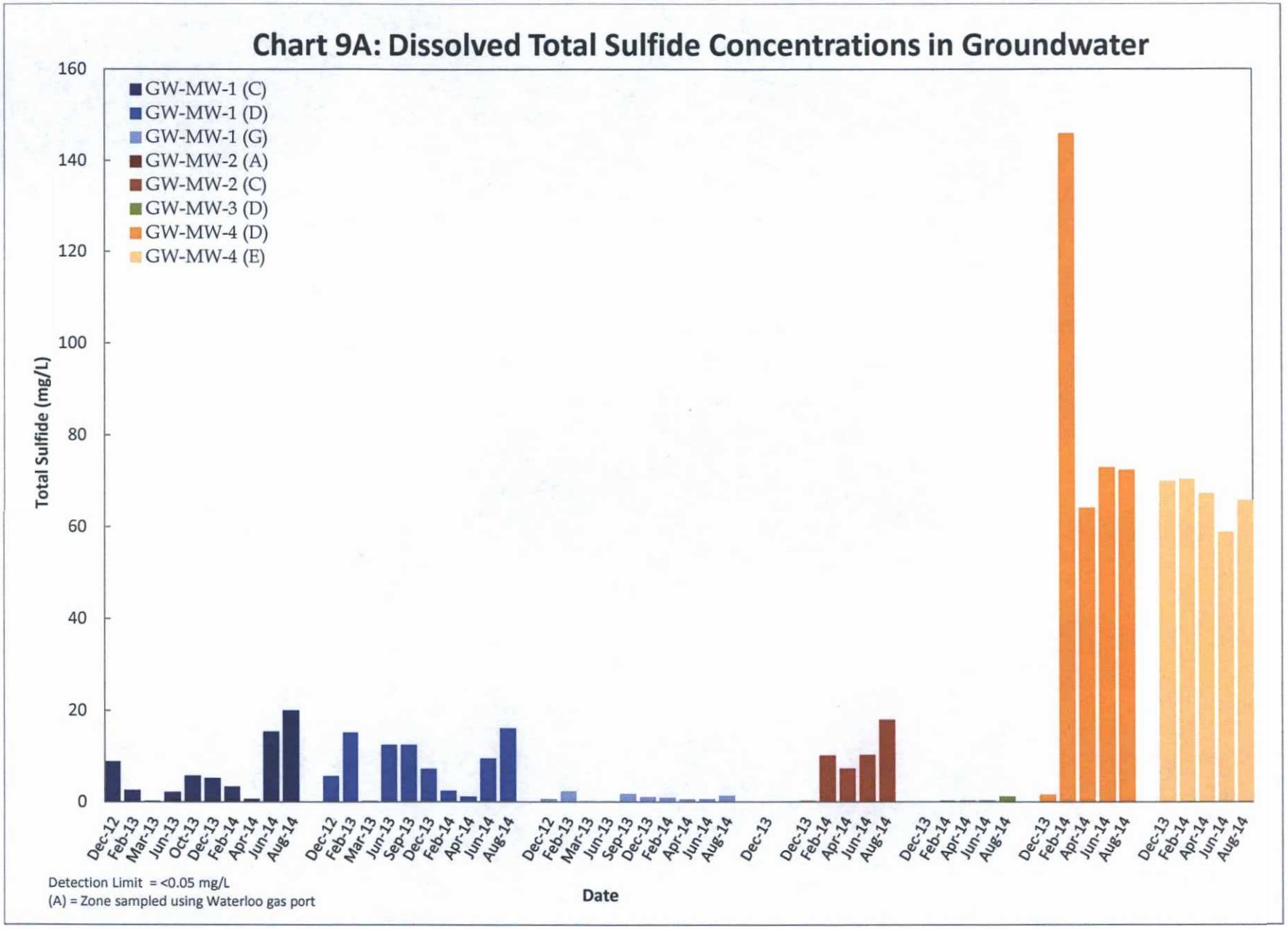
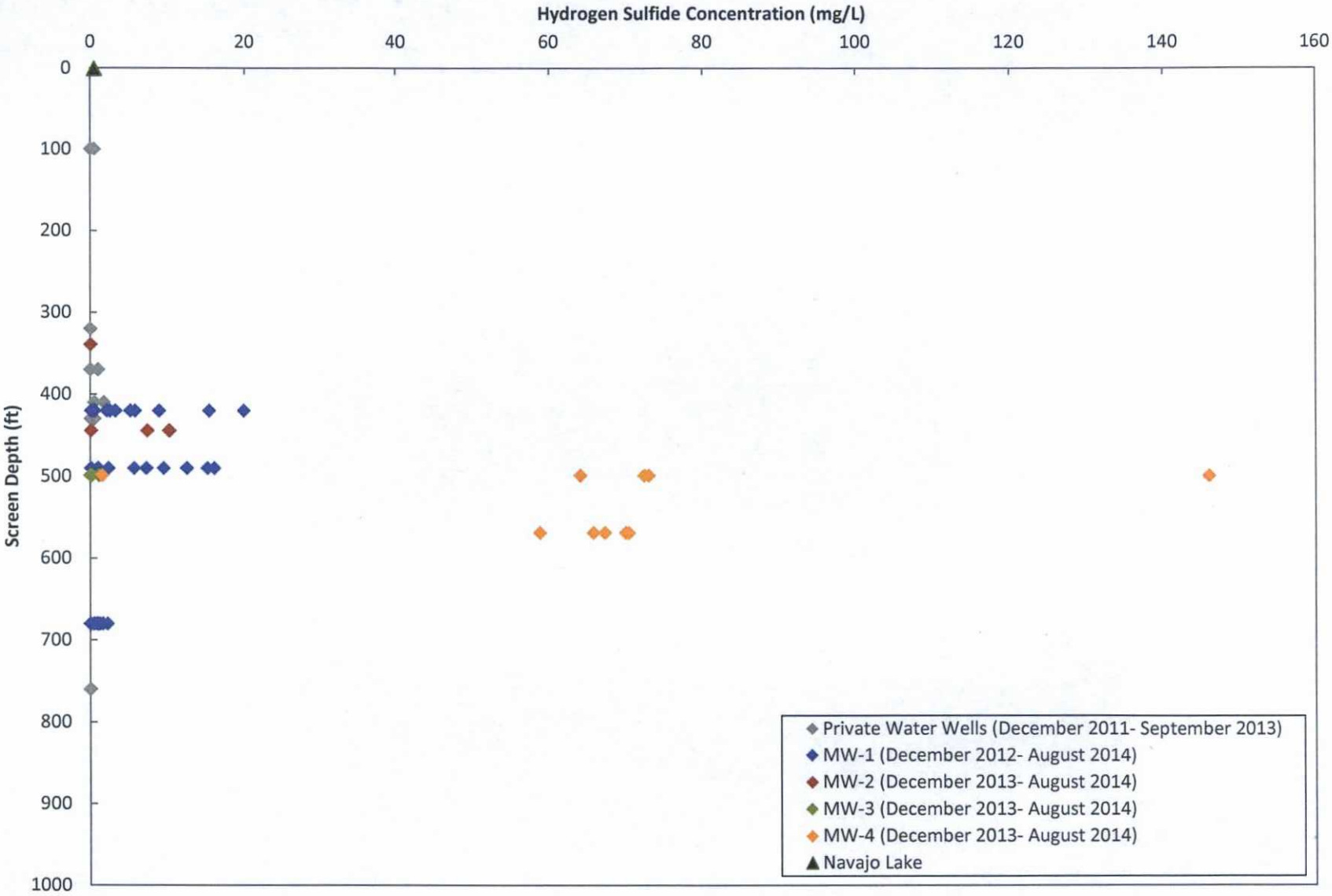
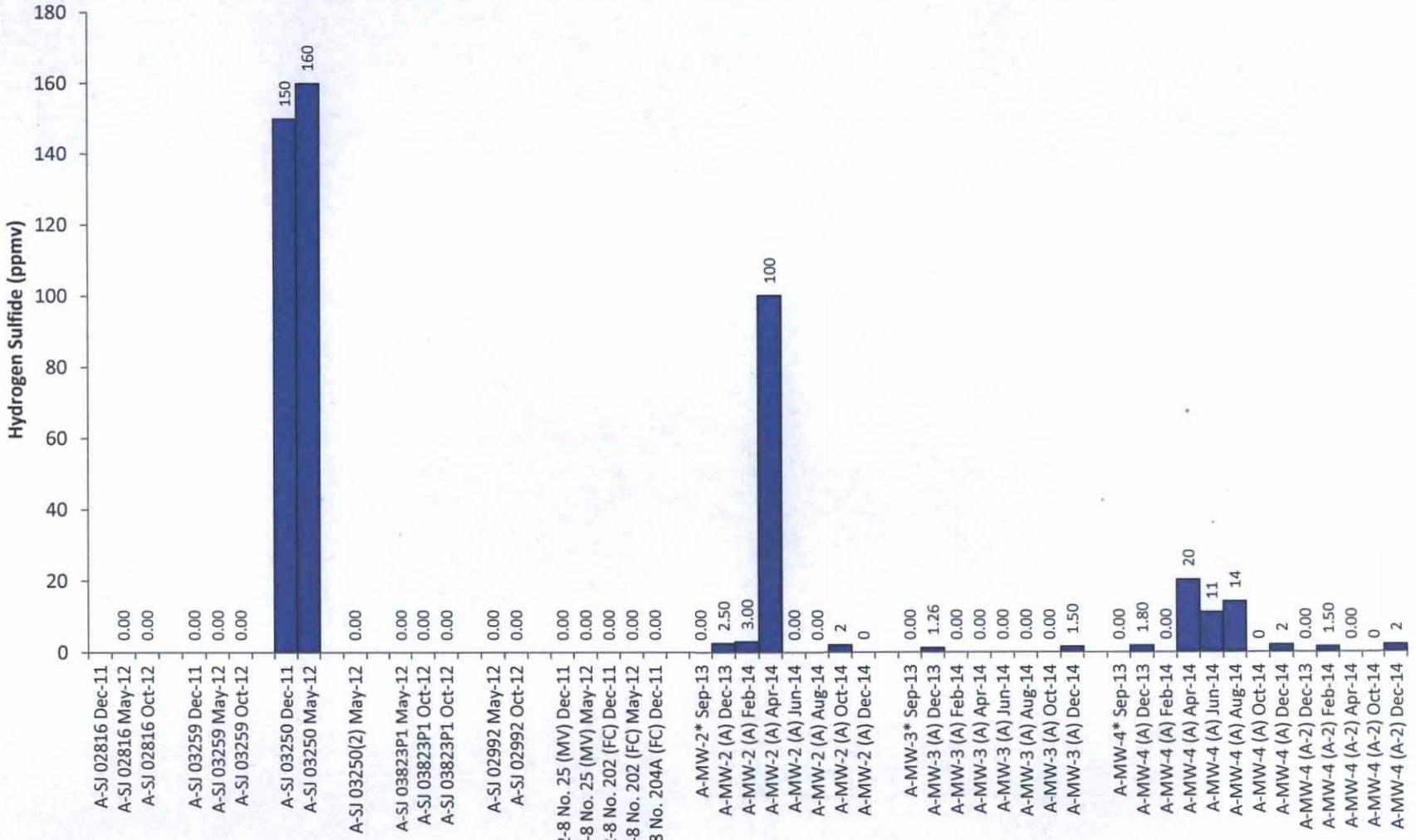


Chart 9B: Hydrogen Sulfide Concentration vs. Depth



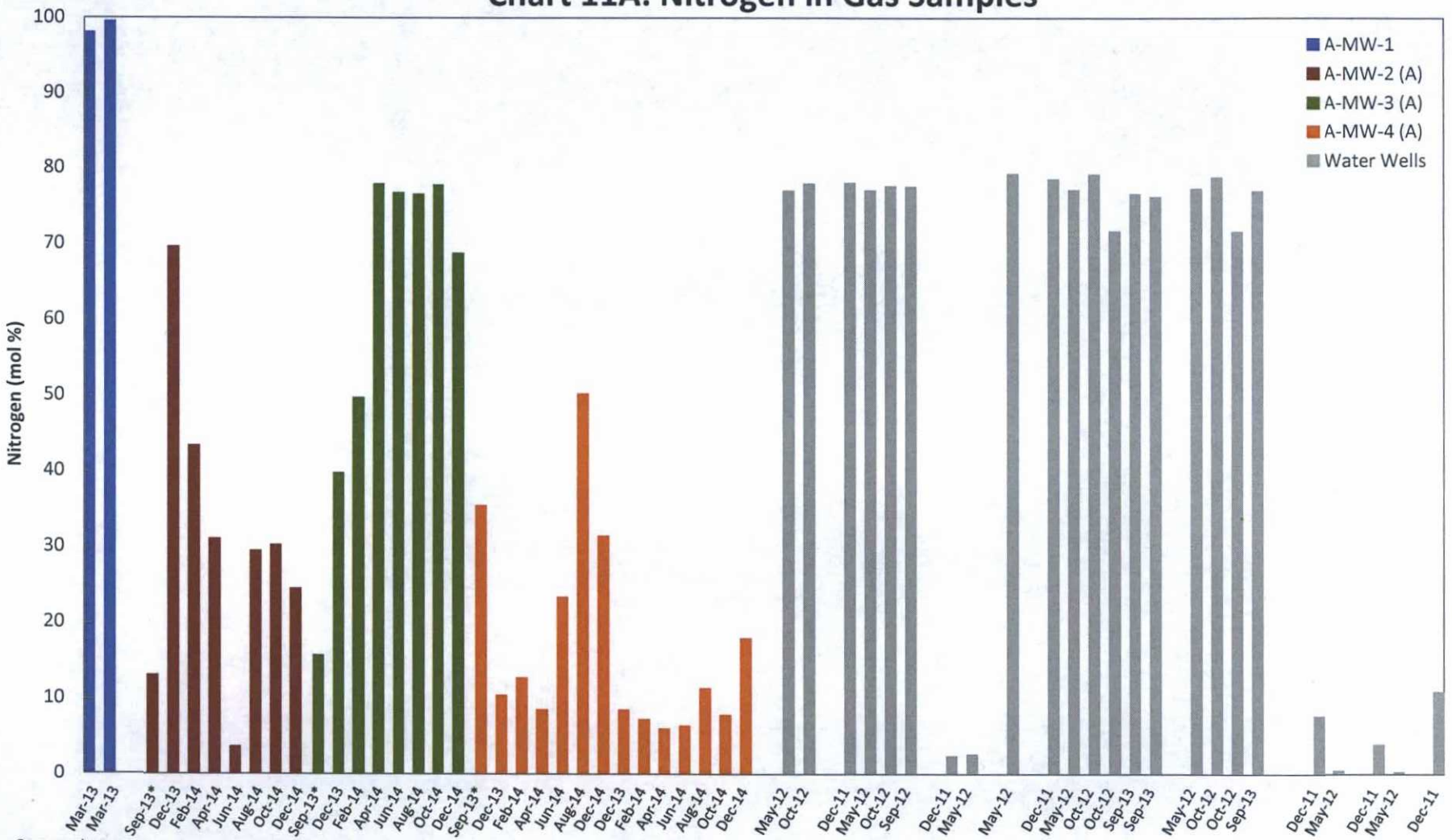
FC = Fruitland Coal
MV = Mesaverde

Chart 10: Hydrogen Sulfide Concentrations in Gas Samples



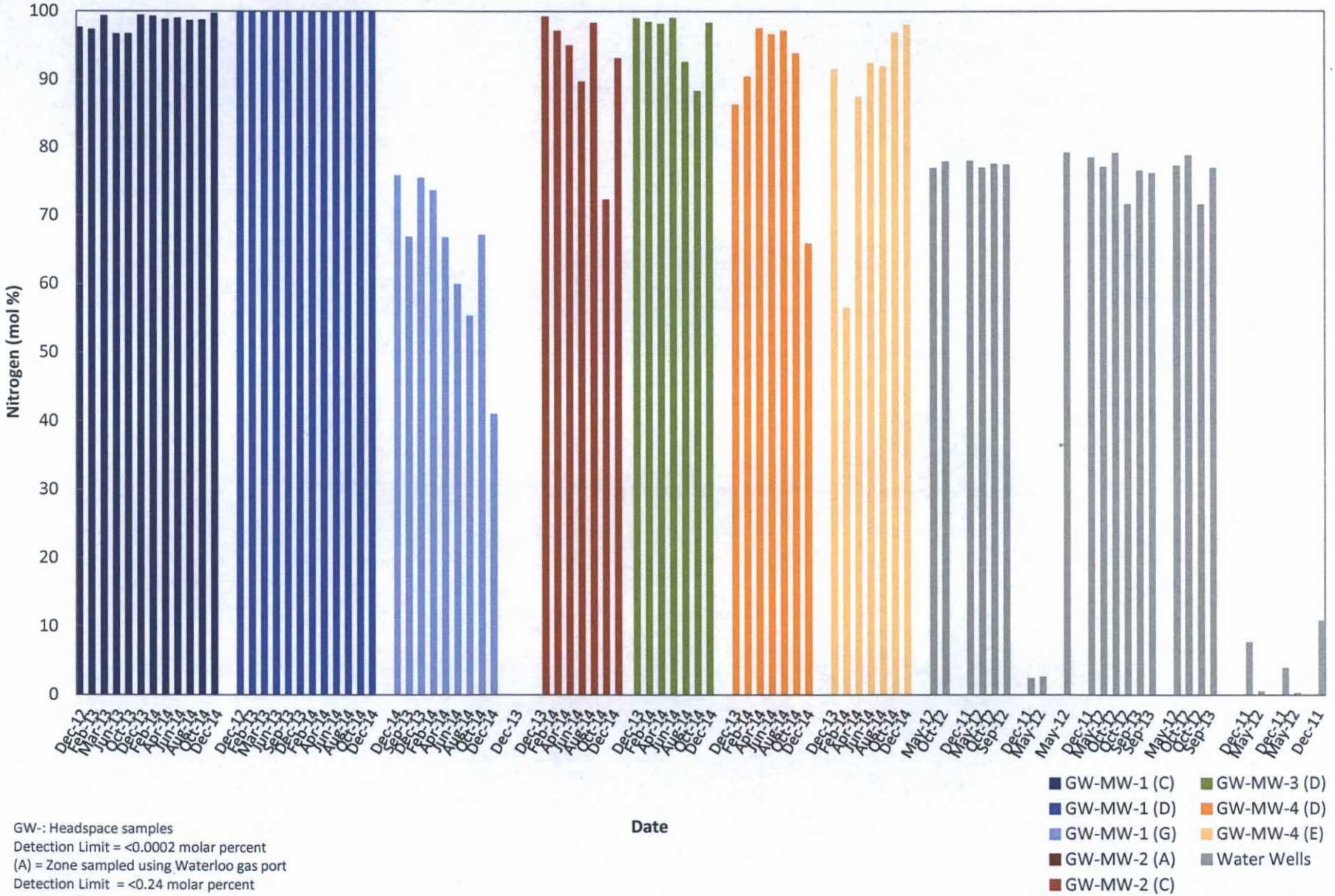
* = Samples collected from open well casing
0 = Not Detected
Detection Limit = <0.59 ppmv
(A) = Zone sampled using Waterloo gas port
(A-2) = Zone sample was collected from using casing port

Chart 11A: Nitrogen in Gas Samples



Gas samples
* = Samples collected from open well casing
** = Zone sample was collected from using casing port
Detection Limit = <0.0002 molar percent
(A) = Zone sampled using Waterloo gas port
Detection Limit = <0.24 molar percent

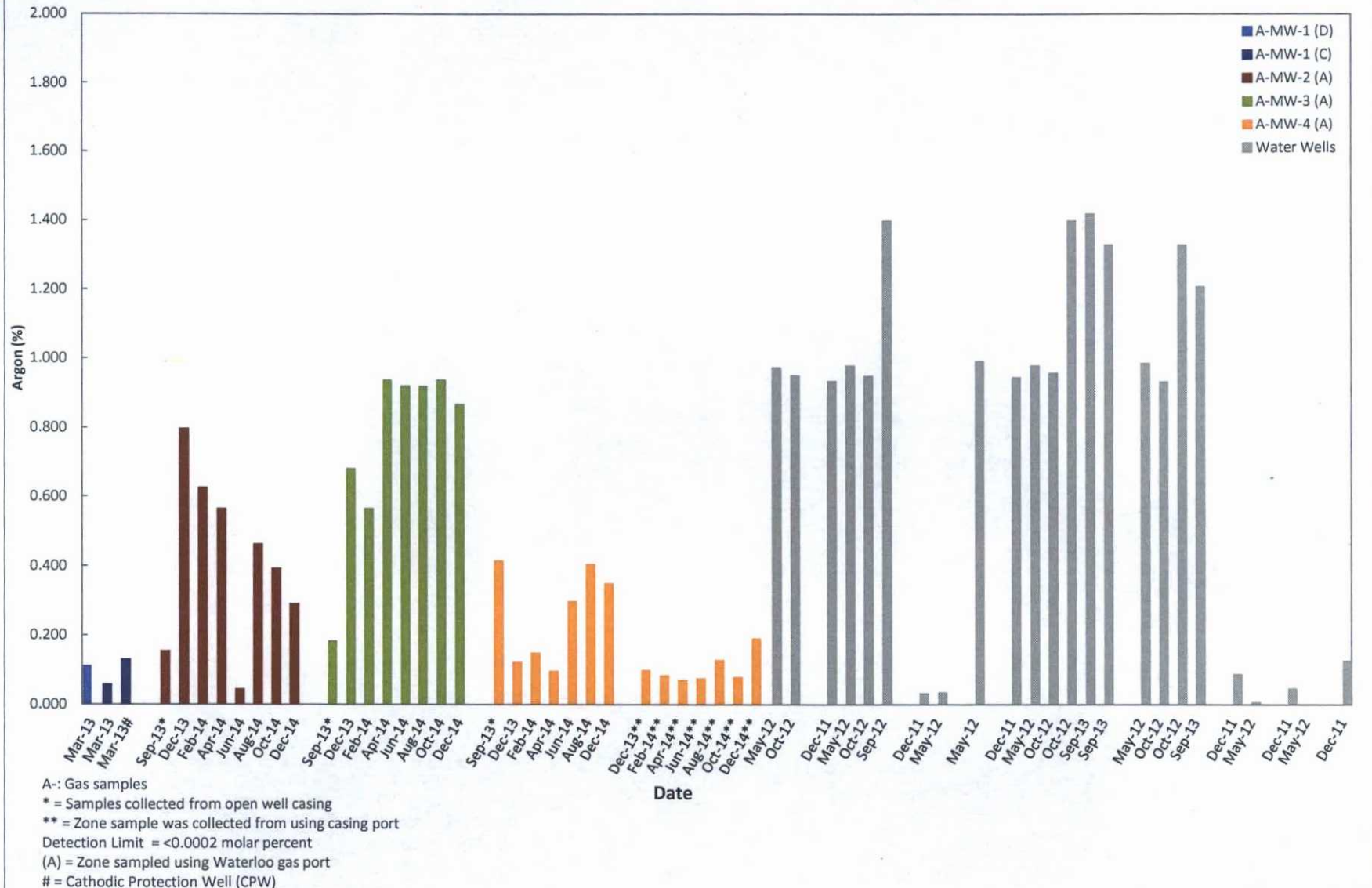
Chart 11B: Nitrogen in Headspace Samples



GW-: Headspace samples
Detection Limit = <0.0002 molar percent
(A) = Zone sampled using Waterloo gas port
Detection Limit = <0.24 molar percent

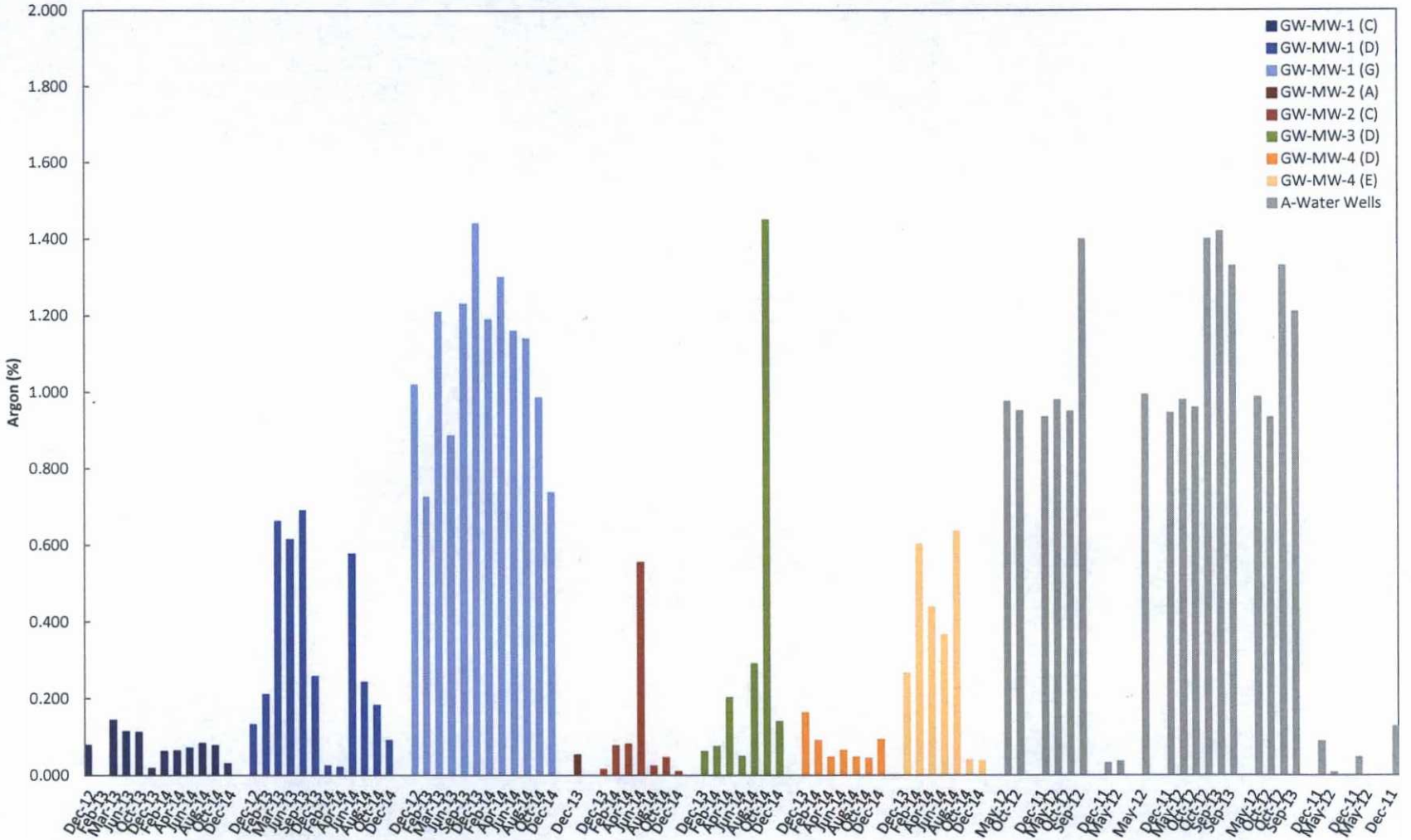
120

Chart 12A: Argon in Gas Samples



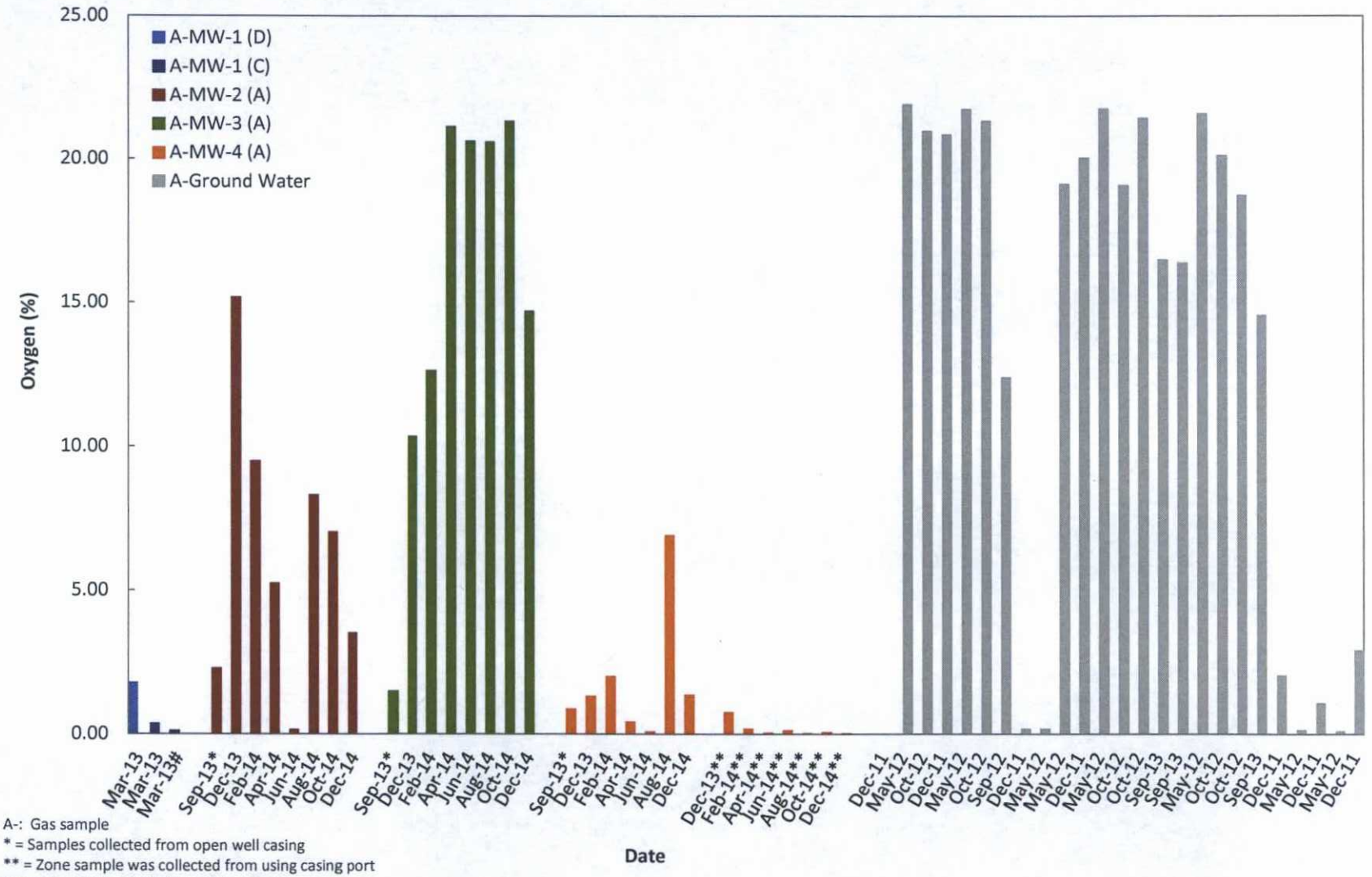
A-: Gas samples
* = Samples collected from open well casing
** = Zone sample was collected from using casing port
Detection Limit = <0.0002 molar percent
(A) = Zone sampled using Waterloo gas port
= Cathodic Protection Well (CPW)

Chart 12B: Argon in Headspace Samples



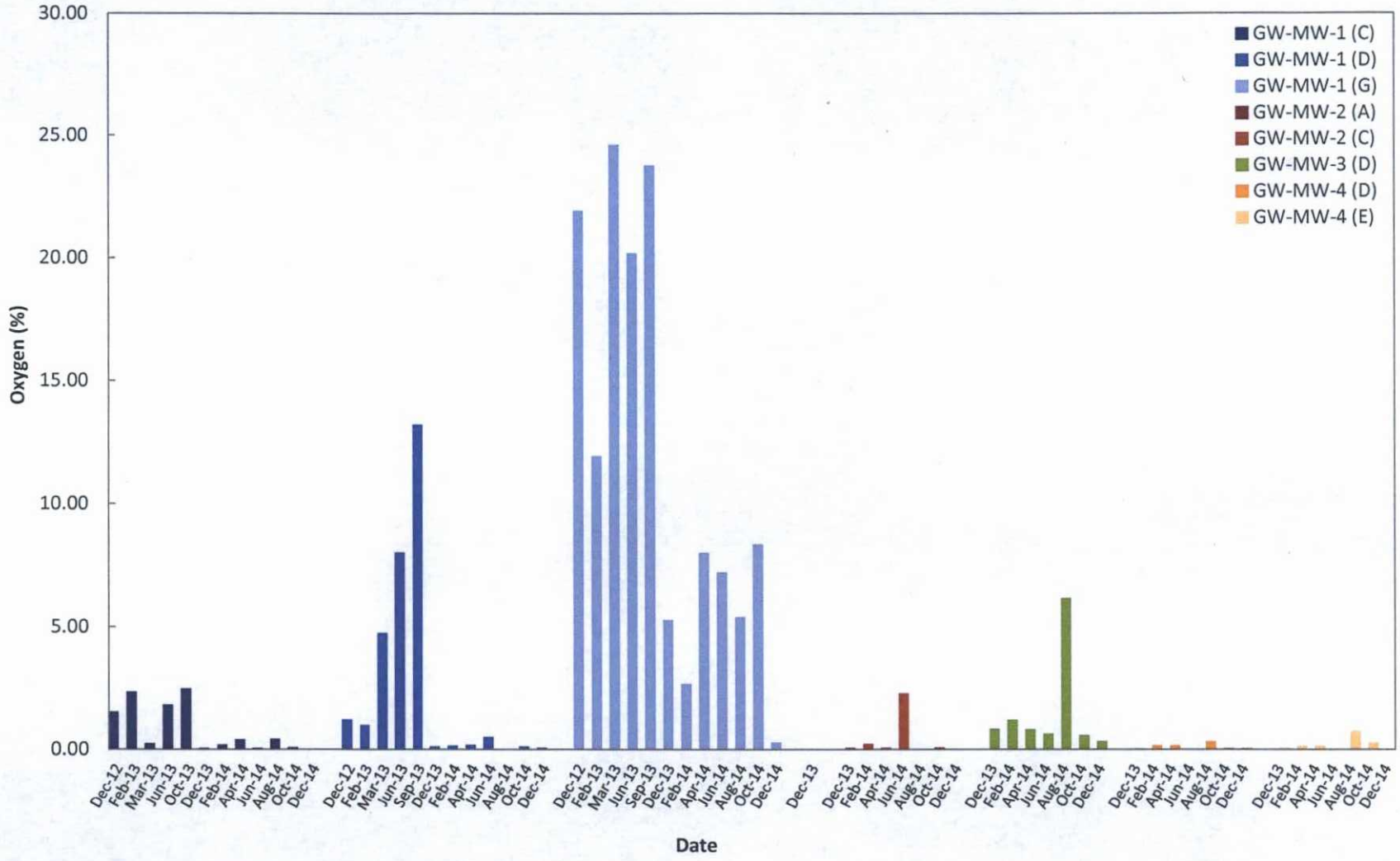
A-/GW-: Gas sample/Headspace sample
0 = Not Detected
* = Samples collected from open well casing
Detection Limit = <0.0002 molar percent
(A) = Zone sampled using Waterloo gas port

Chart 13A: Oxygen in Gas Samples



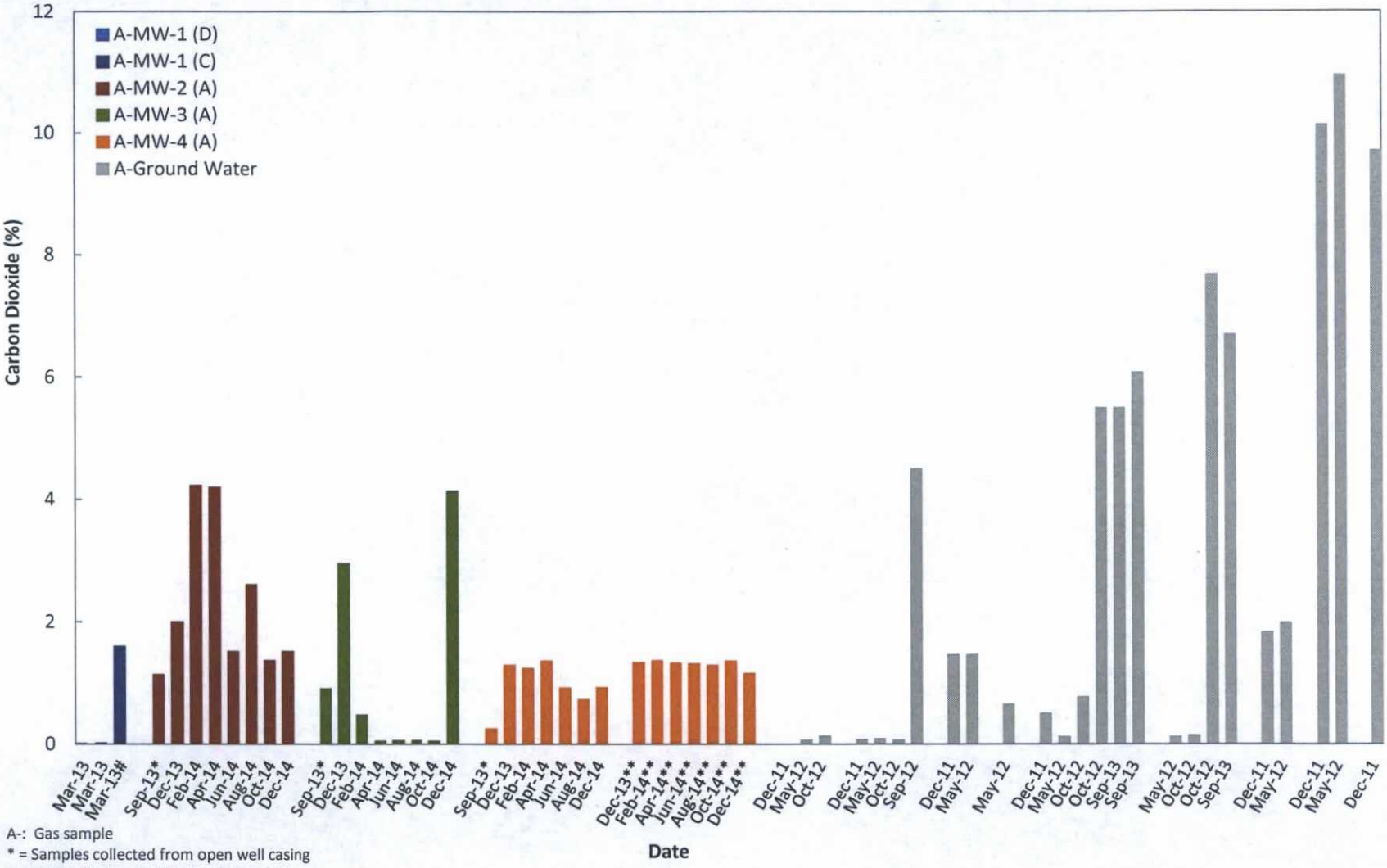
A-: Gas sample
* = Samples collected from open well casing
** = Zone sample was collected from using casing port
Detection Limit = <0.0002 molar percent
(A) = Zone sampled using Waterloo gas port
= Cathodic Protection Well (CPW)

Chart 13B: Oxygen in Headspace Samples



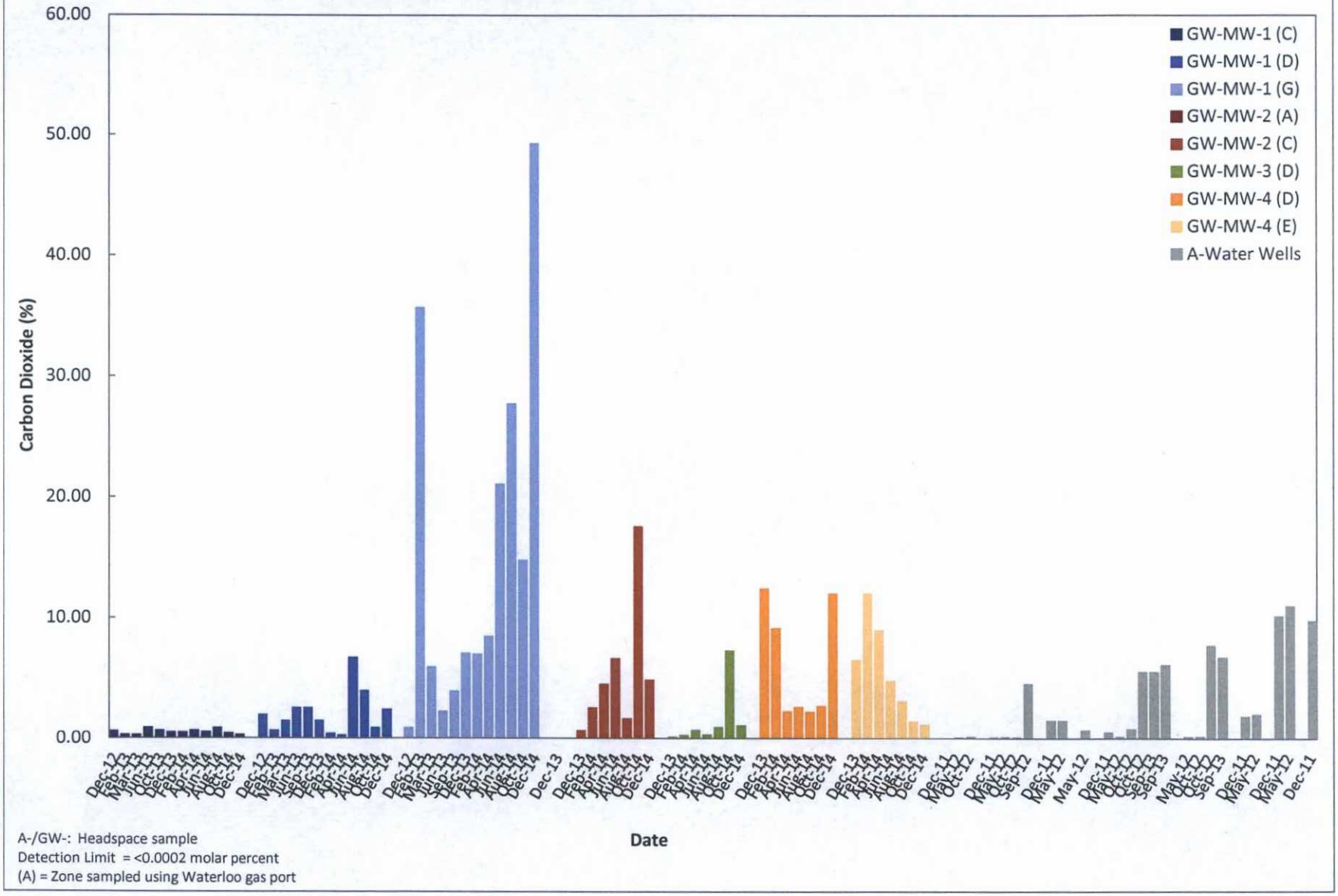
GW-: Headspace sample
Detection Limit = <0.0002 molar percent
(A) = Zone sampled using Waterloo gas port

Chart 14A: Carbon Dioxide in Gas Samples



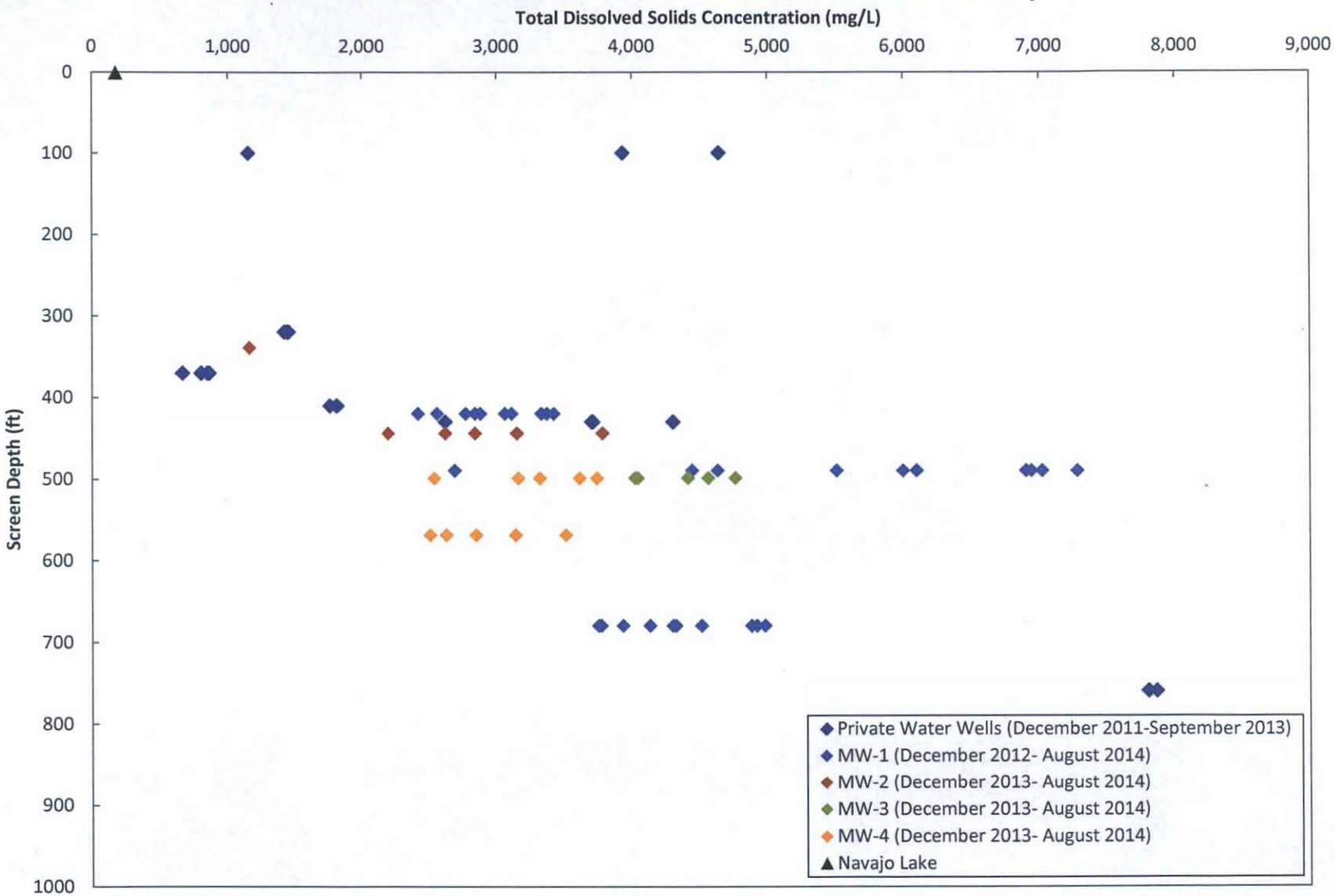
A-: Gas sample
* = Samples collected from open well casing
Detection Limit = <0.0002 molar percent
(A) = Zone sampled using Waterloo gas port
** = Zone sample was collected from using casing port
# = Cathodic Protection Well (CPW)

Chart 14B: Carbon Dioxide in Headspace Samples



A-/GW-: Headspace sample
Detection Limit = <0.0002 molar percent
(A) = Zone sampled using Waterloo gas port

Chart 15: Total Dissolved Solids Concentration vs. Depth



FC = Fruitland Coal
MV = Mesaverde

Chart 16: Piper Diagram

Symbol size increases with increasing concentration

- Zone "A" Sands
- Zone "C" Sands
- Zone "D" Sands
- Zone "E" Sands
- Zone "G" Sands
- Navajo Lake
- Private Wells
- Production Wells

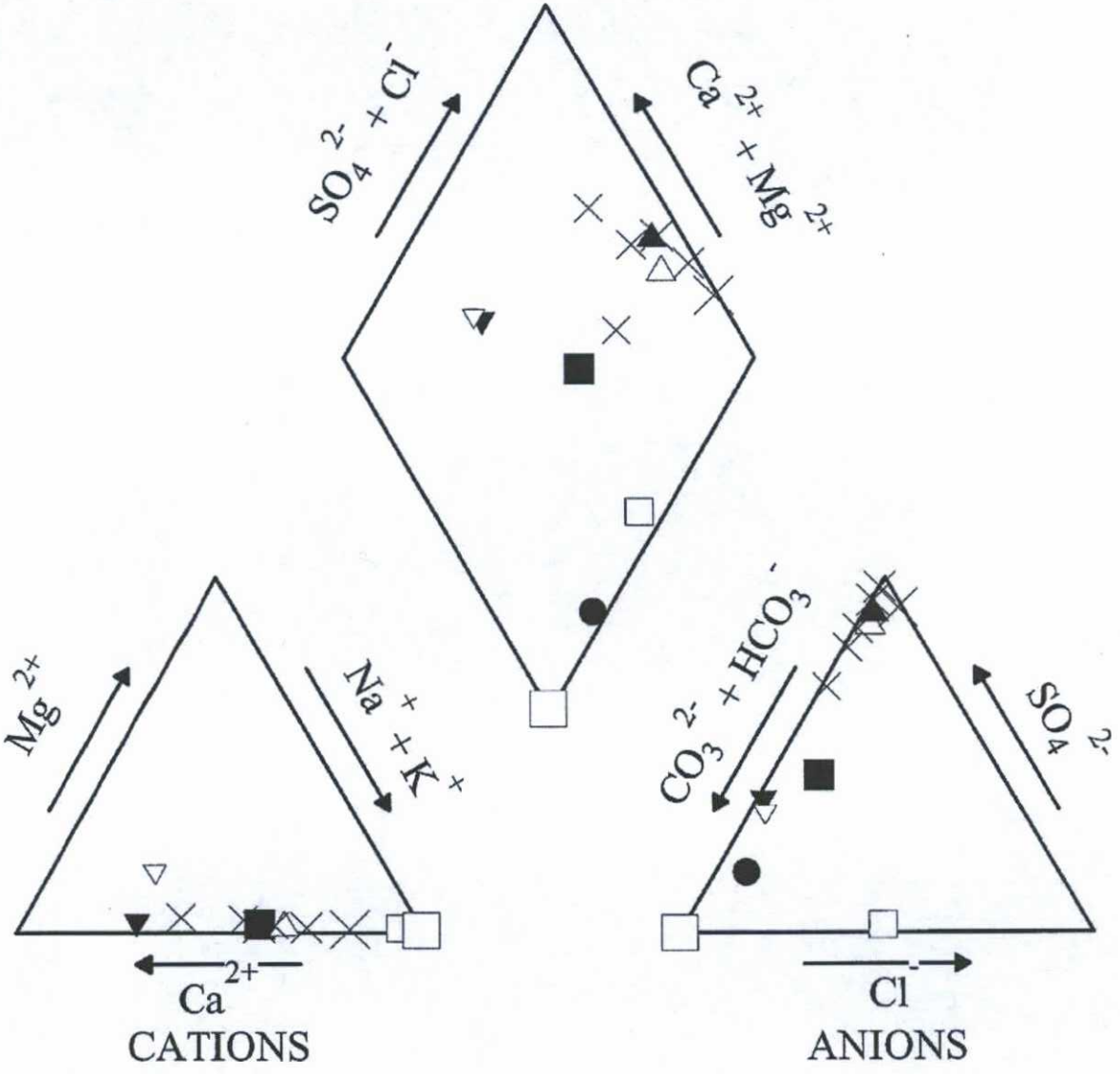
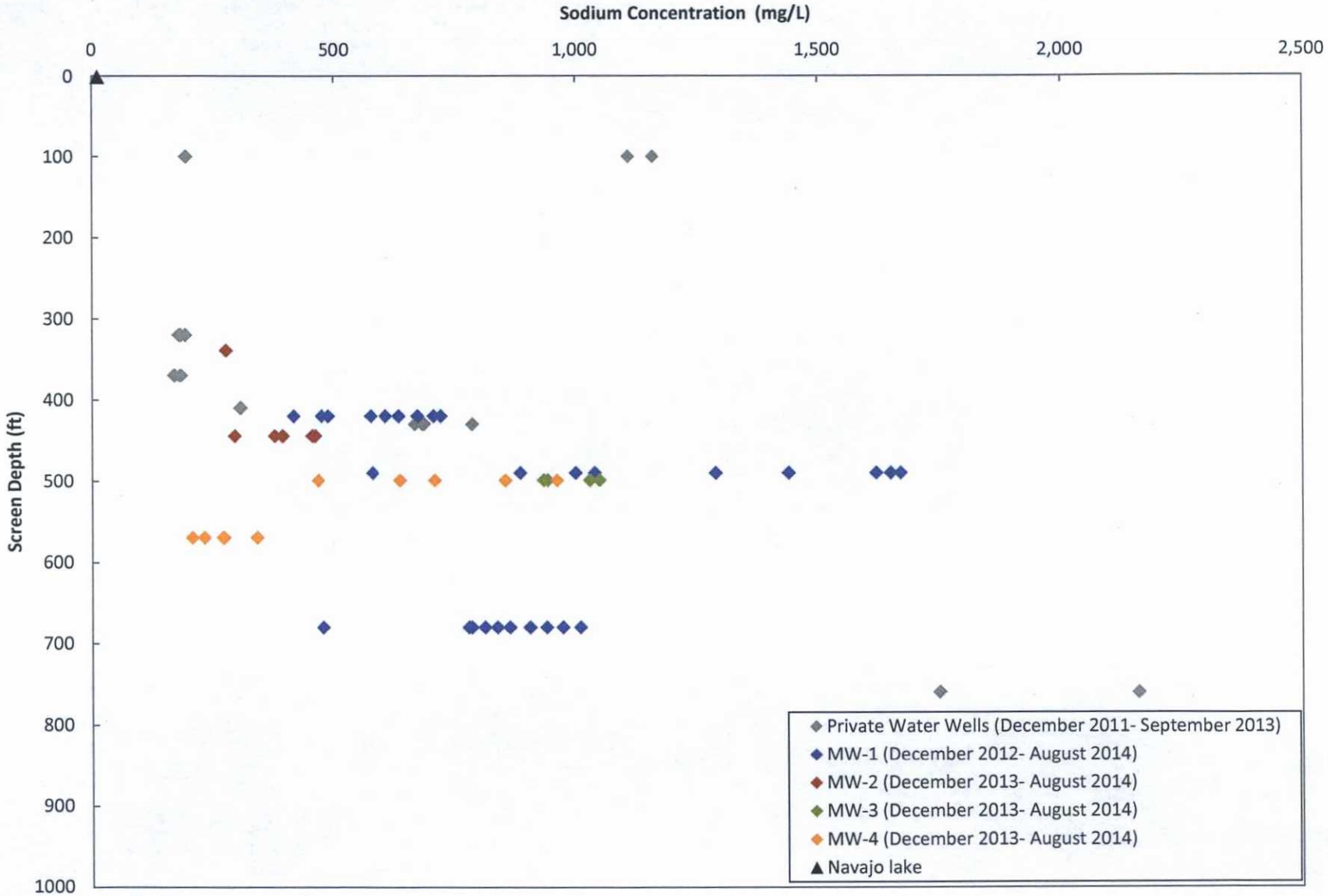


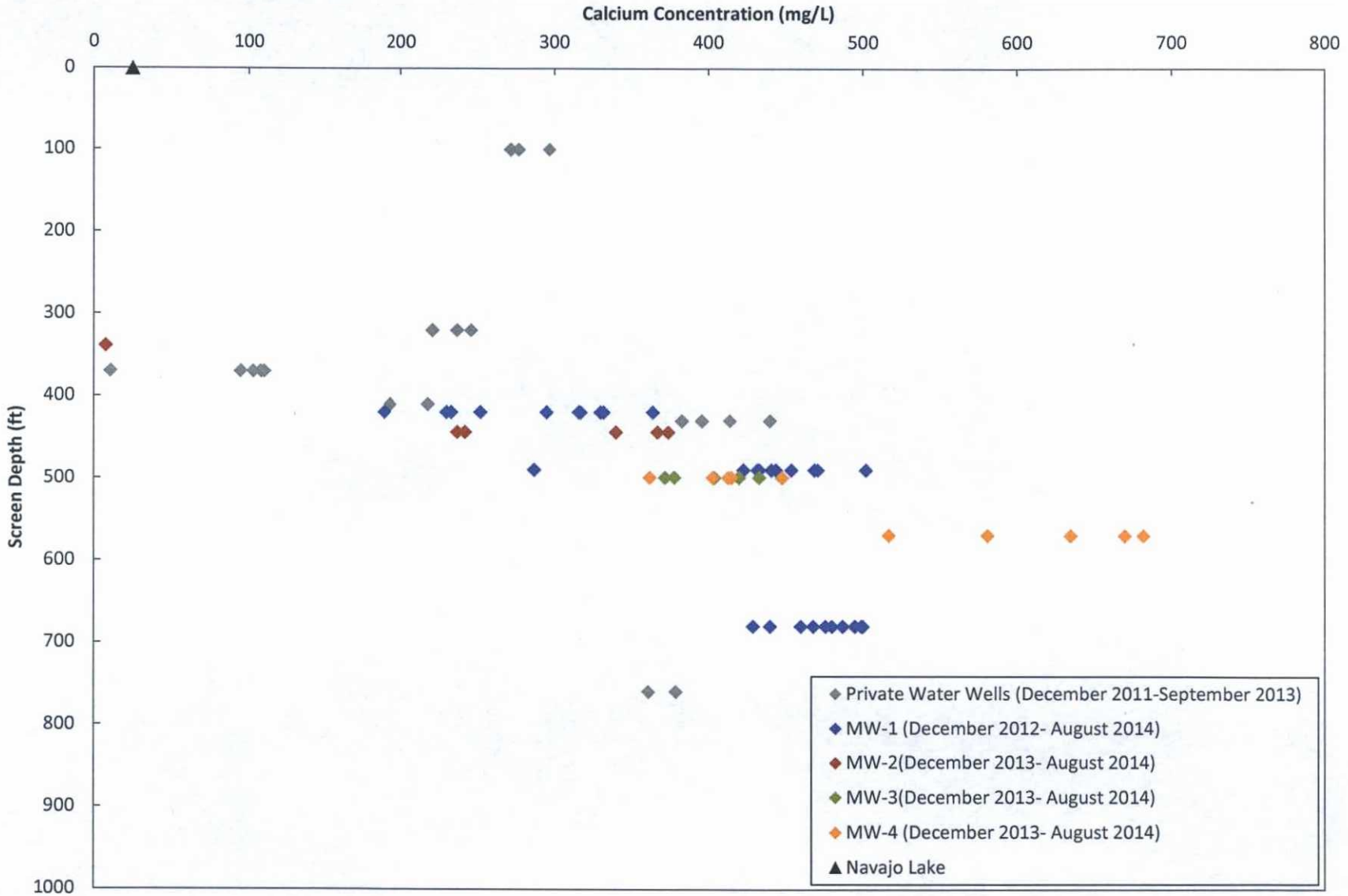
Chart 17: Groundwater Sodium Concentration vs. Depth



FC = Fruitland Coal
MV = Mesaverde

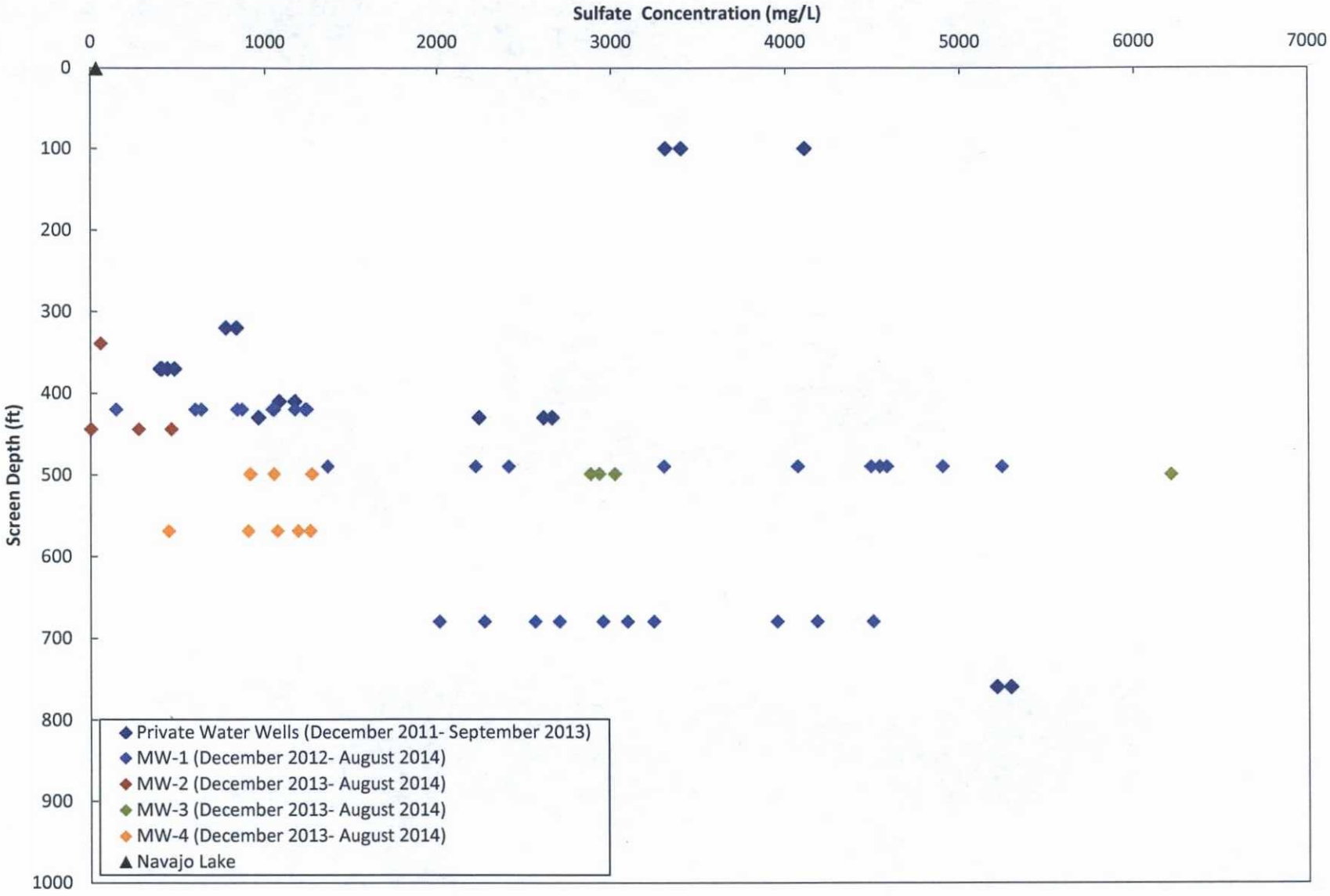
CRA 074922-00 (8)

Chart 18: Groundwater Calcium Concentration vs. Depth



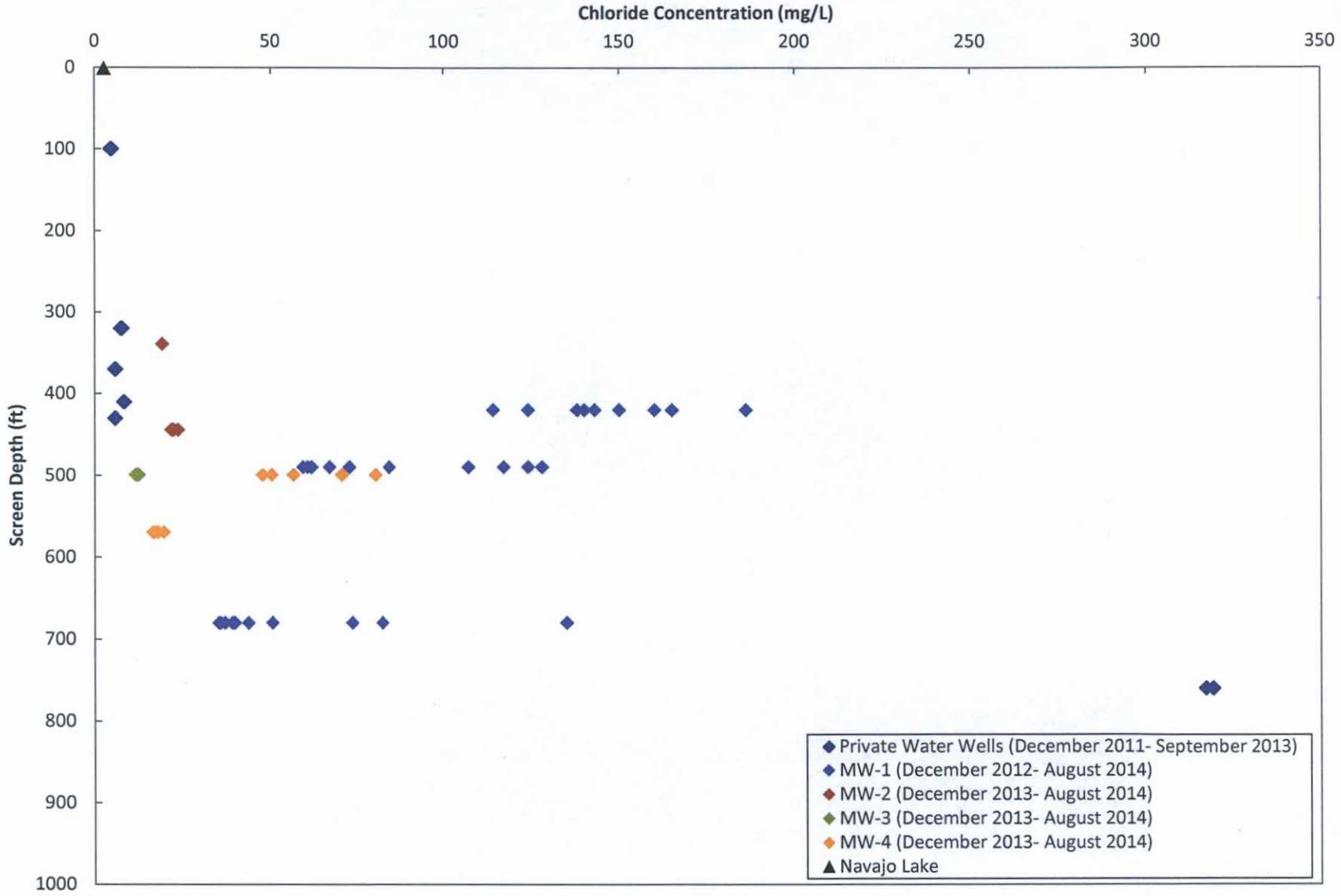
FC = Fruitland Coal
MV = Mesaverde

Chart 19: Groundwater Sulfate Concentration vs. Depth



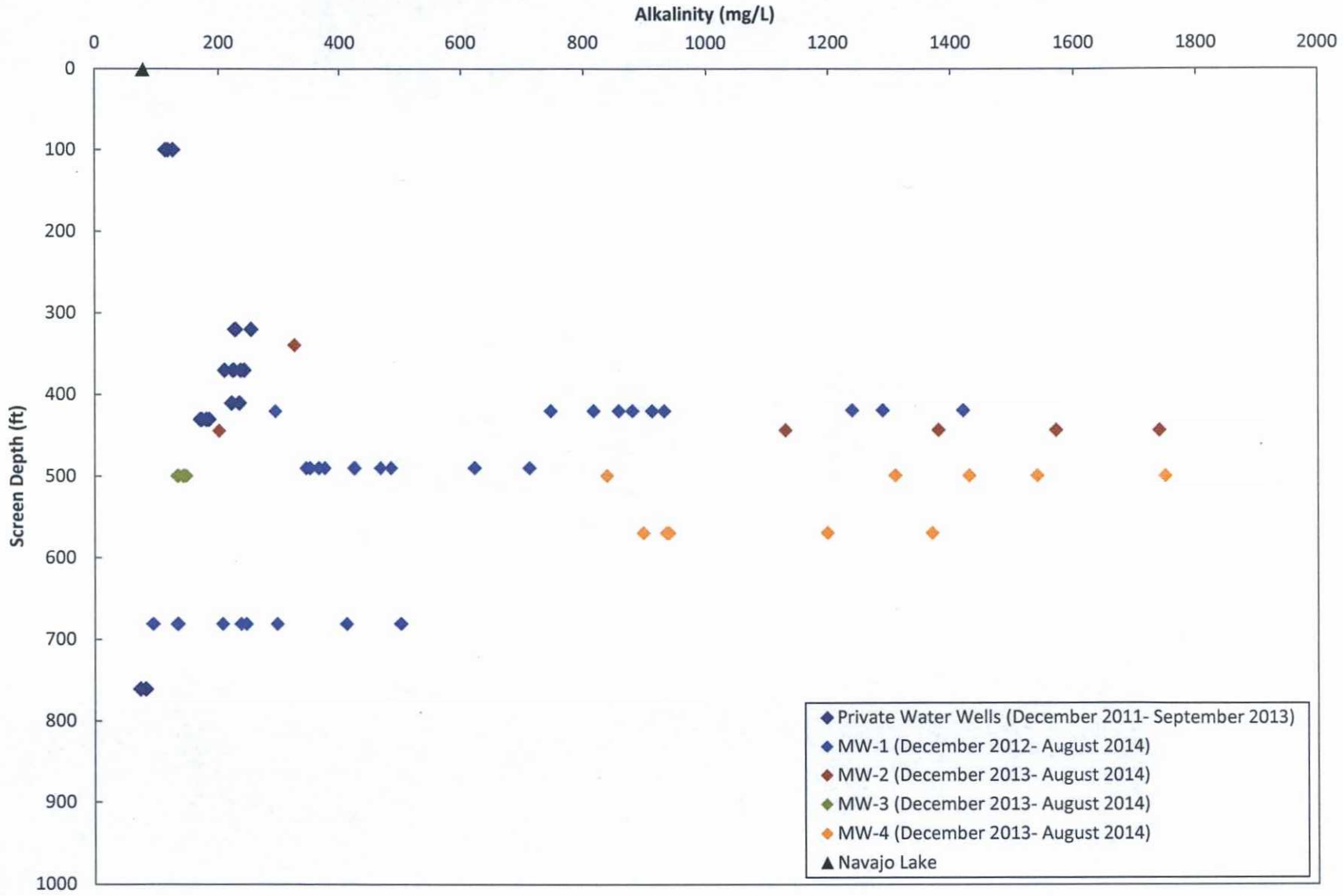
FC = Fruitland Coal
MV = Mesaverde

Chart 20: Groundwater Chloride Concentration vs. Depth



FC = Fruitland Coal
MV = Mesaverde

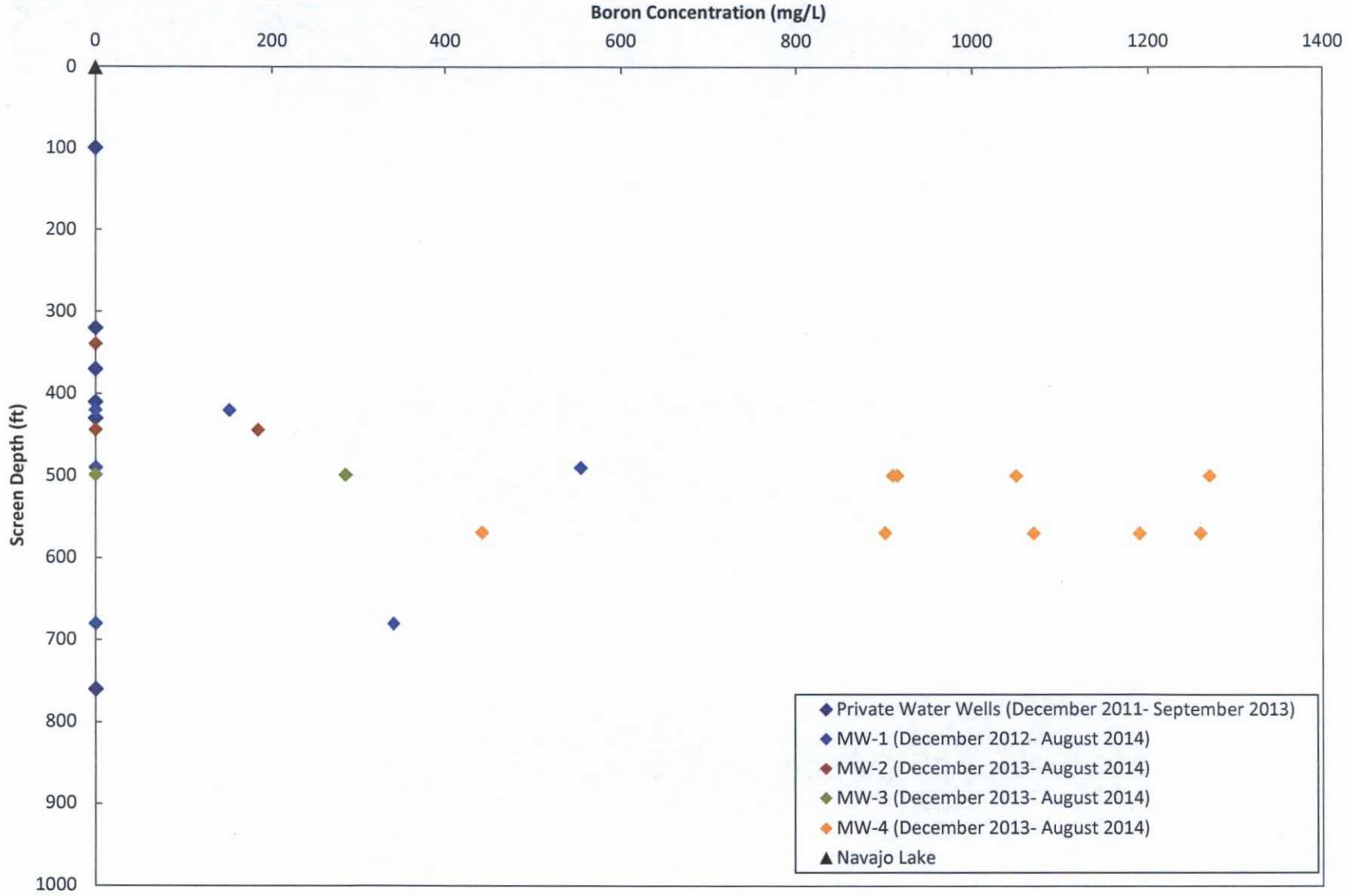
Chart 21: Groundwater Alkalinity vs. Depth



FC = Fruitland Coal
MV = Mesaverde

CRA 074922-00 (8)

Chart 22: Groundwater Boron Concentration vs. Depth



FC = Fruitland Coal
MV = Mesaverde

Chart 23: ORP vs. Depth

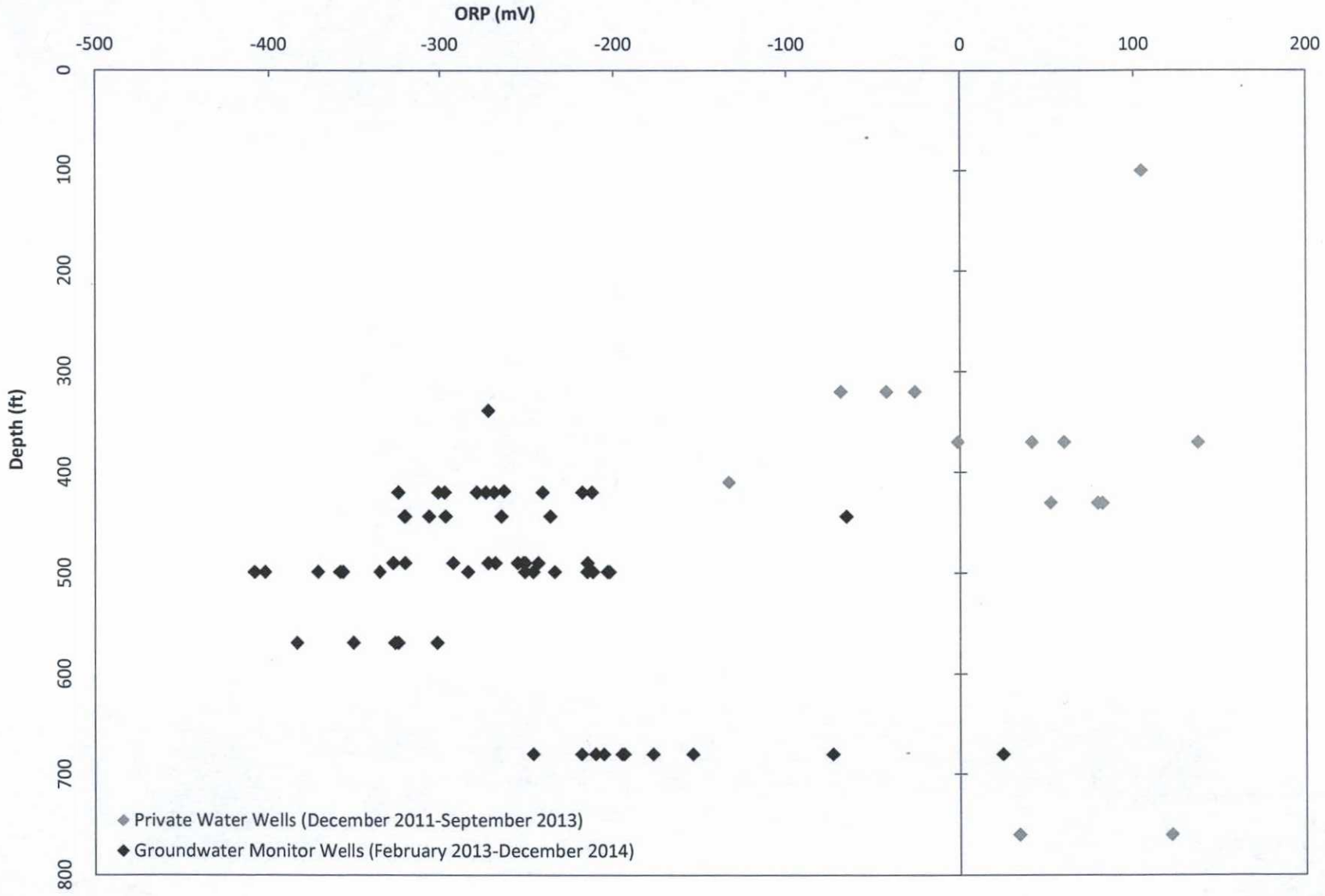


Chart 24: SRB Population

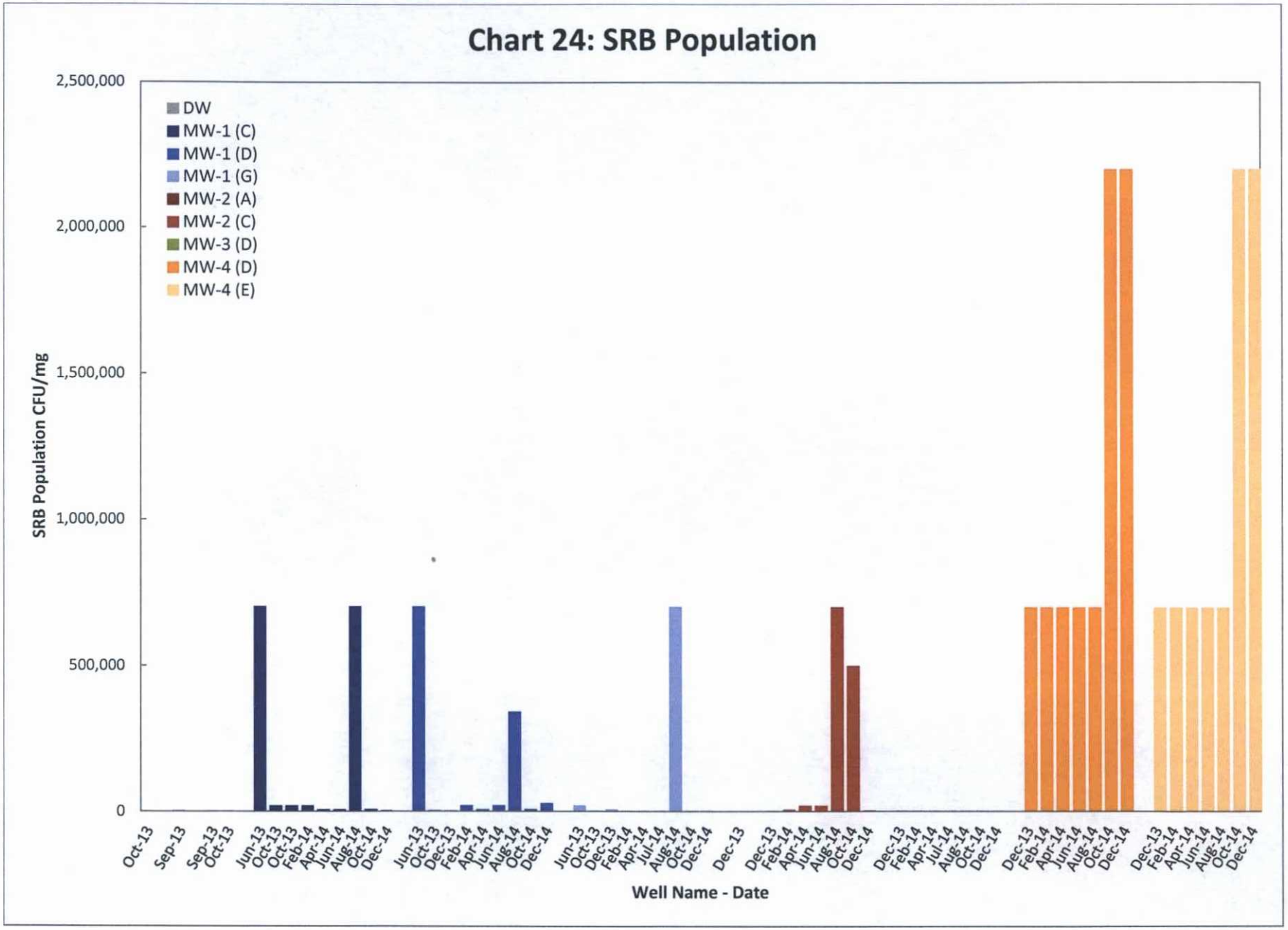
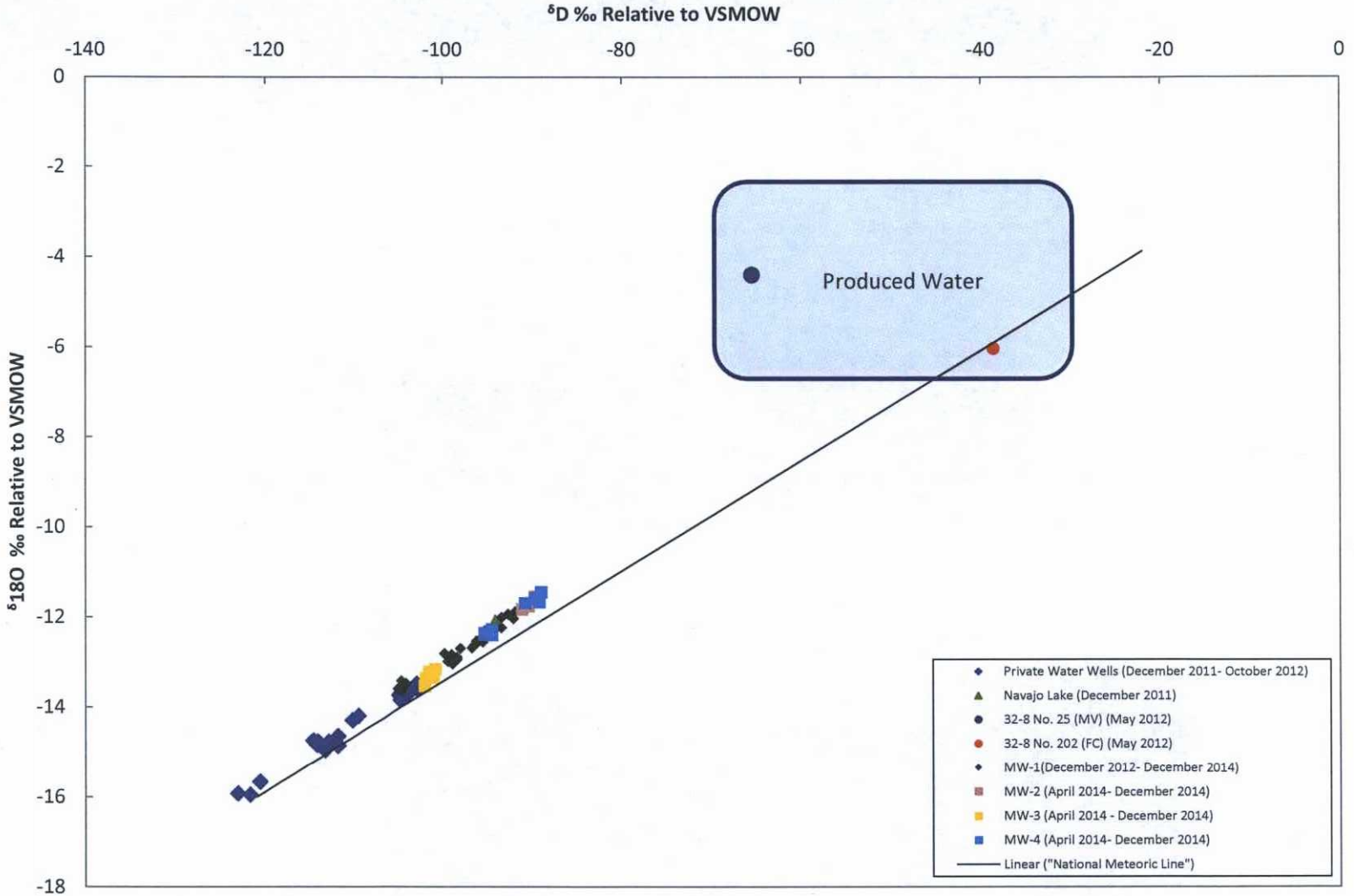


Chart 25: Surface Water and Groundwater Oxygen and Deuterium Isotopic Data



FC = Fruitland Coal
MV = Mesaverde

Attachment A

Application for Permit to Drill a Well with No Consumptive Use of Water

File No. SJ-4023 POD3 & POD4

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 JUL 11 PM 2:39

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☒ Temporary Request - Requested Start Date: 8/2/13 Requested End Date: Unknown

Plugging Plan of Operations Submitted? ☒ Yes ☐ No

1. APPLICANT(S)

Name: **ConocoPhillips Company**	Name:
Contact or Agent: check here if Agent ☐ **Terry Lauck**	Contact or Agent: check here if Agent ☐
Mailing Address: **1380-G Plaza Office Bldg,** **315 Johnston Ave.**	Mailing Address:
City: **Bartlesville**	City:
State: **OK** Zip Code: **74004**	State: Zip Code:
Phone: **918-553-0889** ☐ Home ☒ Cell Phone (Work): **918-661-0935**	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): **terry.s.lauck@conocophillips.com**	E-mail (optional):

FOR OSE INTERNAL USE

Application for Permit, Form wr-07, Rev 4/12/12

File Number: SJ-4023 POD3 &POD4	Trn Number:
Trans Description (optional):	
Sub-Basin:	
PCW/LOG Due Date: 7/30/2014	

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☒ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Terry Lauck of ConocoPhillips**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature

Applicant Signature

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 JUL 11 PM 2:39

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 30th day of July 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Blaine A. Watson
Signature

Blaine A. Watson, P.G.
Print

Title: District V Manager, Water Rights Division
Print

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: SJ-4023 POD3 & POD4	Trn Number:

1.50

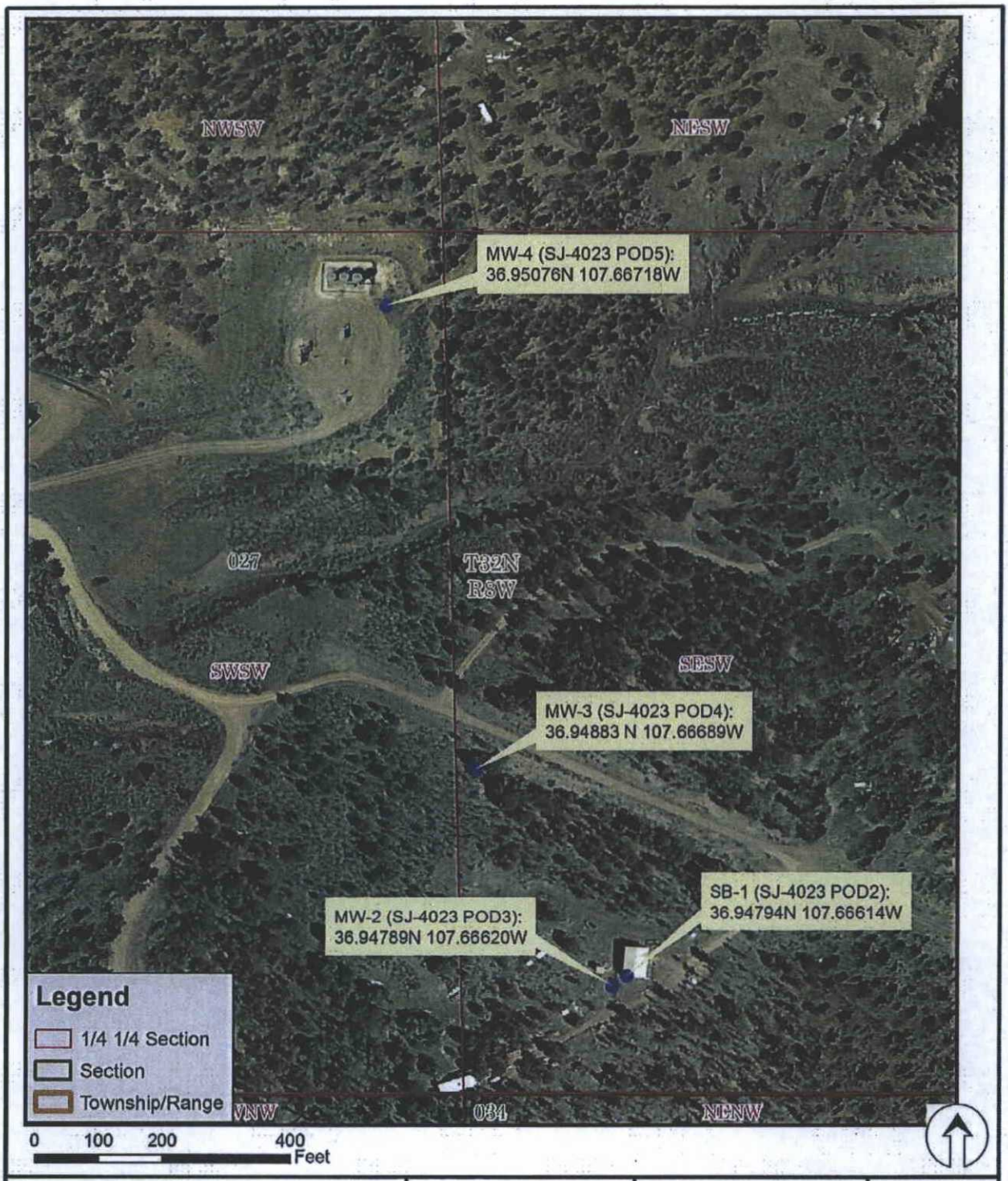
1. This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the following conditions of approval:

Permittee:	ConocoPhillips Company c/o Terry Lauck 1380-G Plaza Office Building 315 Johnston Avenue Bartlesville, OK 74004
Permit Number:	SJ-4023
Application File Date:	July 11, 2013
Priority:	N/A
Source:	Groundwater
Point of Diversion:	SJ-4023 POD3 & POD4; located within the SW/4 SE/4 SW/4 of Section 27, Township 32 North, Range 8 West, NMPM; at point locations described as follows: SJ-4023 POD3: 36° 56' 52.42" N Latitude; 107° 39' 58.32"W Longitude [MW-2]; SJ-4023 POD4: 36° 56' 55.73" N Latitude; 107° 40' 0.43" W Longitude [MW-3]; On land owned by ConocoPhillips Company and located near the San Juan 32-8 #202 well location, in San Juan County, New Mexico.
Purpose of Use:	Monitoring
Place of Use:	N/A
Amount of Water:	N/A

2. No water shall be appropriated and beneficially used under this permit.

3. No water shall be diverted from the well(s) except for sampling purposes, and upon completion of monitoring activities the well(s) shall be plugged in accordance with Subsection C of 19.27.4.31K NMAC, unless a permit to use water is acquired from the Office of the State Engineer.

4. Water well drilling and well drilling activities, including well plugging, are regulated under NMOSE Regulations 19.27.4 NMAC. These regulations apply, and provide both general and



Map Description: SJ-4023 (POD2 - POD5) Data sources: File number: SJ-4023 Aerial Photography: 2009/2011 combined	Coordinate System Lat/Long (decimal deg) WGS84	STATE OF NEW MEXICO Office of the State Engineer Scott A. Verhines, P.E. State Engineer Aztec District Office Well Location Map	Office of the State Engineer Interstate Stream Commission

File No. SJ-4023 POD5

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 JUL 11 PM 2:36

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☒ Temporary Request - Requested Start Date: 8/2/13 Requested End Date: Unknown

Plugging Plan of Operations Submitted? ☒ Yes ☐ No

1. APPLICANT(S)

Name: **ConocoPhillips Company**	Name: **Bureau of Land Management**
Contact or Agent: **Terry Lauck** check here if Agent ☐	Contact or Agent: ~~**Jim Lovato**~~ David Mankiewicz check here if Agent ☐
Mailing Address: **1380-G Plaza Office Bldg, 315 Johnston Ave.**	Mailing Address: **6251 College Blvd. Suite A**
City: **Bartlesville**	City: **Farmington**
State: **OK** Zip Code: **74004**	State: **NM** Zip Code: **87402**
Phone: **918-553-0889** ☐ Home ☒ Cell Phone (Work): **918-661-0935**	Phone: **505-320-7378** ☐ Home ☒ Cell Phone (Work): **505-564-7735**
E-mail (optional): **terry.s.lauck@conocophillips.com**	E-mail (optional): ~~**jlovato@blm.gov**~~ dmankiew

FOR OSE INTERNAL USE — Application for Permit, Form wr-07, Rev 4/12/12

File Number: SJ-4023 POD5	Trn Number:
Trans Description (optional):	
Sub-Basin:	
PCW/LOG Due Date: 7/30/2014	

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge. ☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☒ The duration of the planned monitoring.		**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Dave Mankiewicz **Terry Lauck of ConocoPhillips and ~~XXXXXX~~ of BLM**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 30th day of July 20 13, for the State Engineer,

Scott A. Veryhines, P.E., State Engineer

By: Blaine A. Watson
Signature

Blaine A. Watson, P.G.
Print

Title: District V Manager, Water Rights Division
Print

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 JUL 11 PM 2:36

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: SJ-4023 POD5	Trn Number:

1. This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the following conditions of approval:

Permittee:	ConocoPhillips Company c/o Terry Lauck 1380-G Plaza Office Building 315 Johnston Avenue	and	U.S. Bureau of Land Management c/o Dave Mankiewicz 6251 College Blvd., Suite A Farmington, NM 87402

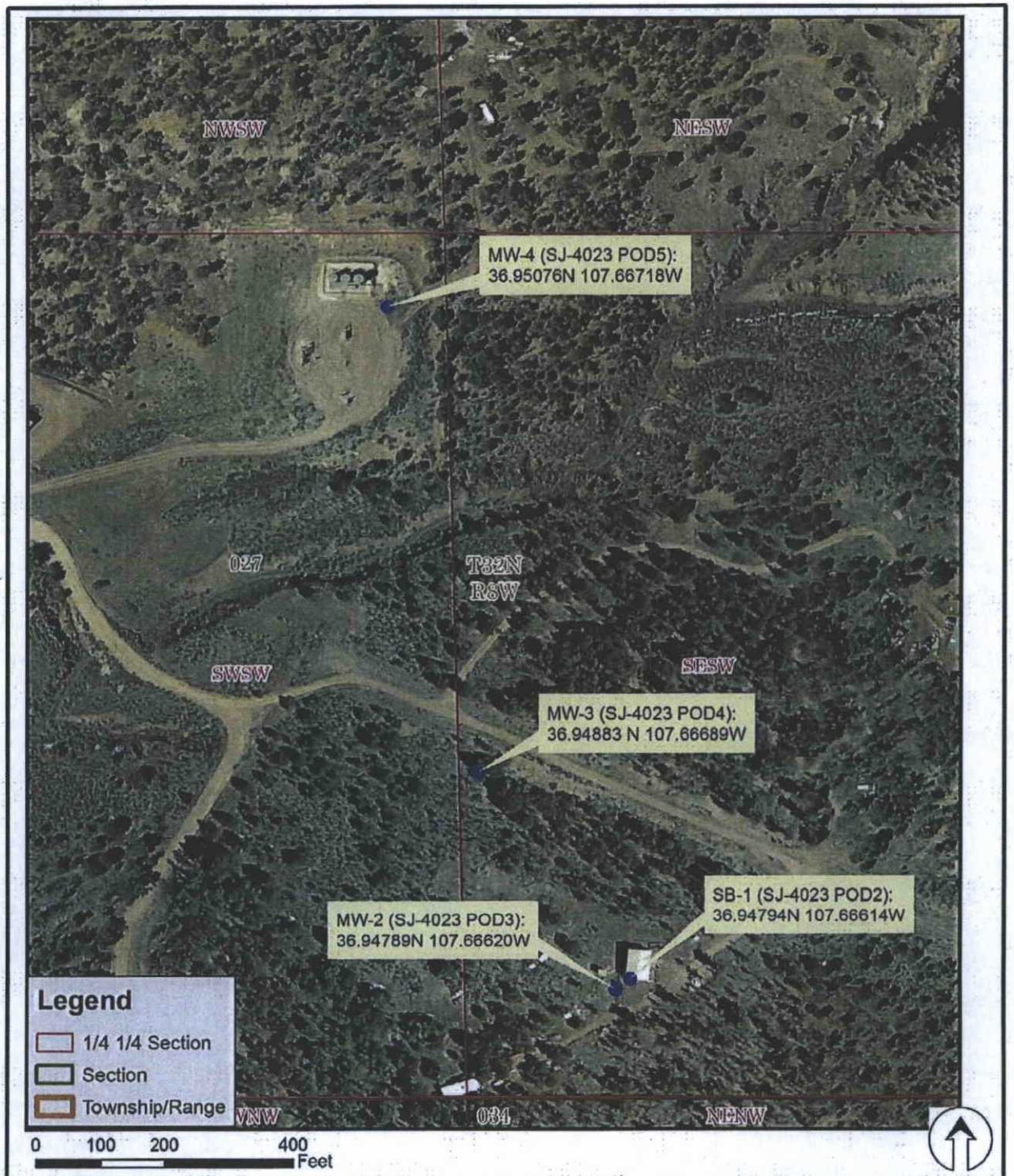
Permit Number:	SJ-4023
Application File Date:	July 11, 2013
Priority:	N/A
Source:	Groundwater
Point of Diversion:	SJ-4023 POD5; located within the NE/4 SW/4 SW/4 of Section 27, Township 32 North, Range 8 West, NMPM; at a point described as 36° 57' 2.75" N Latitude; 107° 40' 1.83" W Longitude; On land owned by BLM and located near the San Juan 32-8 #202 well location, in San Juan County, New Mexico.
Purpose of Use:	Monitoring
Place of Use:	N/A
Amount of Water:	N/A

2. No water shall be appropriated and beneficially used under this permit.

3. No water shall be diverted from the well(s) except for sampling purposes, and upon completion of monitoring activities the well(s) shall be plugged in accordance with Subsection C of 19.27.4.31K NMAC, unless a permit to use water is acquired from the Office of the State Engineer.

4. Water well drilling and well drilling activities, including well plugging, are regulated under NMOSE Regulations 19.27.4 NMAC. These regulations apply, and provide both general and specific direction regarding the drilling of wells in New Mexico. Note that construction of wells that allow groundwater to flow uncontrolled to land surface or move appreciably between geologic units is prohibited. The following conditions provide further specific well construction guidance related to the subject well(s).

5. NMOSE Regulation 19.27.4 NMAC requires any person engaged in the business of well drilling within New Mexico to obtain a Well Driller License issued by the New Mexico Office of the



Map Description: SJ-4023 (POD2 - POD5) Data sources: File number: SJ-4023 Aerial Photography: 2009/2011 combined	Coordinate System Lat/Long (decimal deg) WGS84	STATE OF NEW MEXICO Office of the State Engineer Scott A. Verhines, P.E. State Engineer Aztec District Office Well Location Map	Office of the State Engineer Interstate Stream Commission

File No. SJ-4023 POD2

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 JUL 30 AM 9:15

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☒ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☐ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☒ Temporary Request - Requested Start Date: 8/2/13 Requested End Date: 12/31/13

Plugging Plan of Operations Submitted? ☒ Yes ☐ No

1. APPLICANT(S)

Name: **ConocoPhillips Company**	Name:
Contact or Agent: **Terry Lauck** check here if Agent ☐	Contact or Agent: check here if Agent ☐
Mailing Address: **1380-G Plaza Office Bldg, 315 Johnston Ave.**	Mailing Address:
City: **Bartlesville**	City:
State: **OK** Zip Code: **74004**	State: Zip Code:
Phone: **918-553-0889** ☐ Home ☒ Cell Phone (Work): **918-661-0935**	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): **terry.s.lauck@conocophillips.com**	E-mail (optional):

FOR OSE INTERNAL USE — Application for Permit, Form wr-07, Rev 4/12/12

File Number: SJ-4023 POD2	Trn Number:
Trans Description (optional):	
Sub-Basin:	
PCW/LOG Due Date: 7/30/2014	

2. **WELL(S)** Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).
District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range*) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
SOIL BORING (SB-1)	107°39'58.10"w	36°56'52.58"n	SW/4 S27 T32N R8W

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 JUL 30 AM 9:15

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: **Conocophillips Company**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): **700.00**	Outside diameter of well casing (inches): **0.00**
Driller Name: **Bryan Nydoske**	Driller License Number: **WD-1210**

3. **ADDITIONAL STATEMENTS OR EXPLANATIONS**

The purpose of the soil boring is to obtain a cross section of the area of interest and to correlate lithology with the lithology found at nearby MW-1, drilled in late 2012.

The soil boring will be located near proposed Monitor Well 2 (MW-2).

The soil boring will be plugged and abandoned with Type I Type II Portland with 3 to 5 percent bentonite.

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: SJ-4023 POD2	Trn Number:

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☒ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☐ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **Terry Lauck of ConocoPhillips**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature

Applicant Signature

2013 JUL 30 AM 9:16
STATE ENGINEER OFFICE
AZTEC, NEW MEXICO

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 30th day of July 20 13, for the State Engineer,

Scott A. Verhines, P.E., State Engineer

By: Blaine A. Watson
Signature

Blaine A. Watson, P.G.
Print

Title: District V Manager, Water Rights Division
Print

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: SJ-4023 POD2	Trn Number:

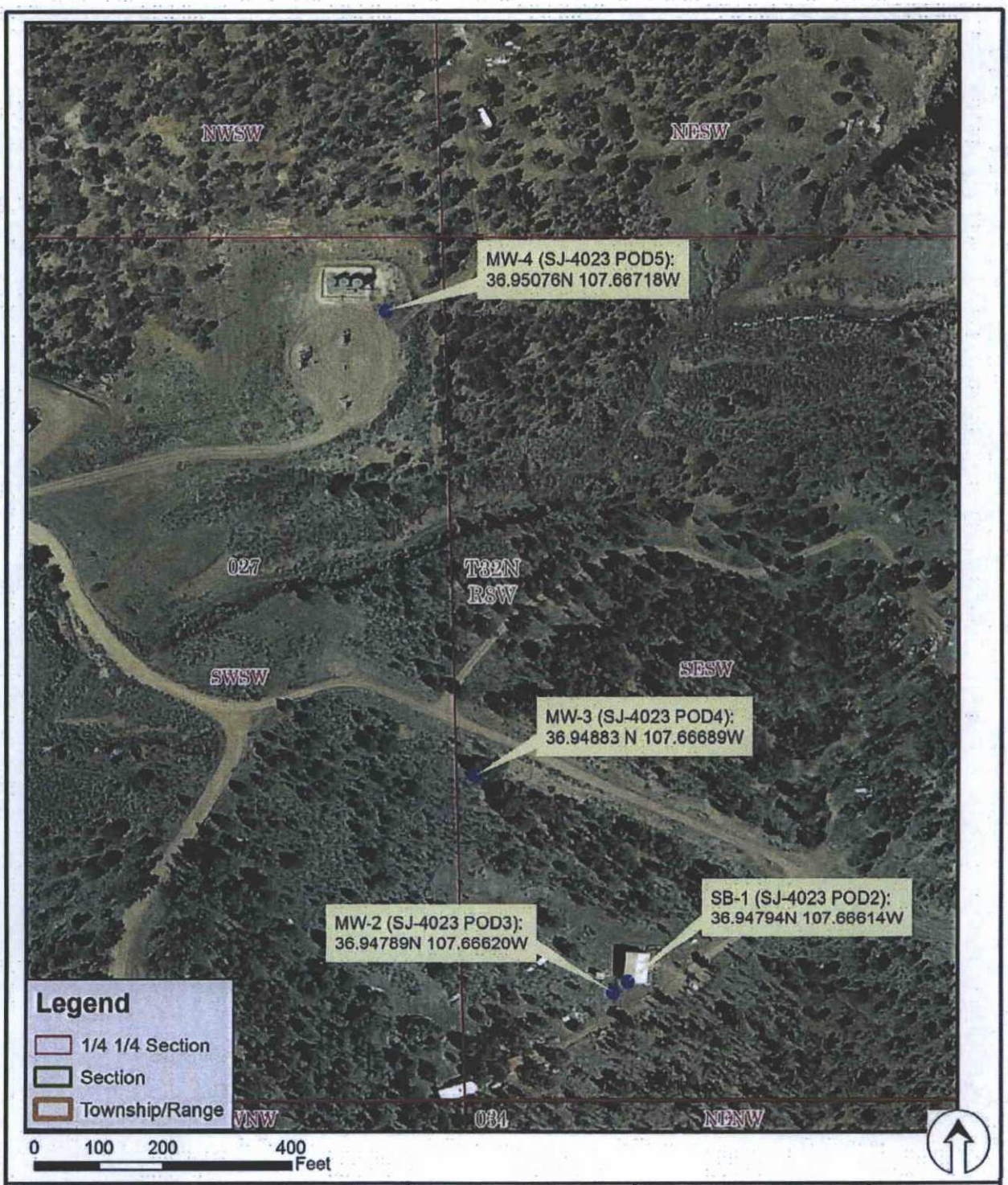
1. This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the following conditions of approval:

Permittee:	ConocoPhillips Company c/o Terry Lauck 1380-G Plaza Office Building 315 Johnston Avenue Bartlesville, OK 74004
Permit Number:	SJ-4023
Application File Date:	July 30, 2013
Priority:	N/A
Source:	Groundwater
Point of Diversion:	SJ-4023 POD2; located within the SW/4 SE/4 SW/4 of Section 27, Township 32 North, Range 8 West, NMPM; at a point described as 36° 56' 52.58" N Latitude; 107° 39' 58.10" W Longitude; On land owned by ConocoPhillips Company and located near the San Juan 32-8 #202 well location, in San Juan County, New Mexico.
Purpose of Use:	Monitoring
Place of Use:	N/A
Amount of Water:	N/A

2. No water shall be appropriated and beneficially used under this permit.

3. No water shall be diverted from the well(s) except for sampling purposes, and upon completion of monitoring activities the well(s) shall be plugged in accordance with Subsection C of 19.27.4.31K NMAC, unless a permit to use water is acquired from the Office of the State Engineer.

4. Water well drilling and well drilling activities, including well plugging, are regulated under NMOSE Regulations 19.27.4 NMAC. These regulations apply, and provide both general and specific direction regarding the drilling of wells in New Mexico. Note that construction of wells that allow groundwater to flow uncontrolled to land surface or move appreciably between geologic units is prohibited. The following conditions provide further specific well construction guidance related to the subject well(s).



Map Description: SJ-4023 (POD2 - POD5) Data sources: File number: SJ-4023 Aerial Photography: 2009/2011 combined	Coordinate System Lat/Long (decimal deg) WGS84	STATE OF NEW MEXICO Office of the State Engineer Scott A. Verhines, P.E. State Engineer Aztec District Office Well Location Map	Office of the State Engineer Interstate Stream Commission

Attachment B

Well Plugging Plan of Operations

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
AZTEC

Scott A. Verhines, P.E.
State Engineer

100 Gossett Drive, Suite A
Aztec, New Mexico 87410

July 31, 2013

ConocoPhillips Company
ATTN: Terry Lauck
1380-G Plaza Office Building
315 Johnston Avenue
Bartlesville, OK 74004

RE: Well Plugging Plan of Operations for ConocoPhillips San Juan 32-8 exploratory boring SB-1 (OSE File #SJ-4023 POD2); San Juan County, New Mexico

Greetings:

After reviewing the Well Plugging Plan of Operations submitted to obtain OSE approval for the abandonment of one soil boring located at the referenced facility, which was received on July 30, 2013, the OSE is returning a favorable approval with Specific Plugging Conditions (attached). Please pay special attention to Specific Plugging Condition number 3, which requires the hydration of bentonite (if used), with the correct amount of water, before mixing into the cement slurry.

Please submit a completed Well Plugging Report, along with a copy of the approved plugging conditions, describing the actual abandonment process and itemized materials used to the address referenced above within 20 days after completion of well plugging.

Should you have any further questions or concerns regarding this correspondence, feel free to contact me at 505-334-4571.

Sincerely,

Blaine A. Watson

Blaine A. Watson, P.G.
District V Manager

Enclosures

cc: Aztec Reading (cover only)
Aztec File SJ-4023
WATERS

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging.

I. FILING FEE: There is no filing fee for this form.

II.GENERAL/WELL OWNERSHIP:

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: to be determined

Name of well owner: ConocoPhillips Company

Mailing address: 1380-G Plaza Office Bldg, 315 Johnston Ave.

City: Bartlesville State: OK Zip code: 74004

Phone number: 918-553-0889 E-mail: terry.s.lauck@conocophillips.com

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: ~~to be determined~~ National EWP

New Mexico Well Driller License No.: WD-1210 Expiration Date: 12/31/13

2013 JUL 30 PM 12:25

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO

IV.WELL INFORMATION:

Note: A copy of the existing Well Record for the well to be plugged should be attached to this plan.

1) GPS Well Location: ~~MW-2~~ SB-1 Latitude: 36 deg, 56 min, 52.58 sec

Longitude: 107 deg, 39 min, 58.10 sec, WGS84

2) Reason(s) for plugging well: the well will be utilized for exploratory purposes to compare lithology with a previously drilled well in 2012. Once the well is cored to 700 ft, the well will be plugged and abandoned.

3) Was well used for any type of monitoring program? no If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? Unknown If yes, provide additional detail, including analytical results and/or laboratory report(s): borehole has yet to be cored therefore no analytical data is available at this time

5) Static water level: unknown feet below land surface / feet above land surface (circle one)

6) Depth of the well: 700 feet

7) Inside diameter of innermost casing: _____ inches.

8) Casing material: NA

9) The well was constructed with:

_____ an open-hole production interval, state the open interval: _____

_____ a well screen or perforated pipe, state the screened interval(s): _____

10) What annular interval surrounding the artesian casing of this well is cement-grouted? Not an artesian well

11) Was the well built with surface casing? no If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe: _____

12) Has all pumping equipment and associated piping been removed from the well? NA If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well: mix and pump cement/bentonite grout to surface

2) Will well head be cut-off below land surface after plugging? NA

2013 JUL 30 PM 2:25
STATE ENGINEER OFFICE
AZTEC, NEW MEXICO

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 456.96 gal.

4) Type of Cement proposed: Type I Type II Portland with 3 to 5 percent bentonite

5) Proposed cement grout mix: 6 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

7) Grout additives requested, and percent by dry weight relative to cement: bentonite 3 to 5%

8) Additional notes and calculations: _____

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

VIII. SIGNATURE:

I, Kelly Williams, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Kelly Williams — Signature of Applicant

7.30.13 — Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

X Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 31st day of July, 2013

Scott A. Verhines, State Engineer

By: Blaine A. Watson
Blaine A. Watson, P.G.
District V Manager
Water Rights Division

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 JUL 30 PM 12: 25

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			Ground surface
Bottom of proposed interval of grout placement (ft bgl)			700 ft
Theoretical volume of grout required per interval (gallons)			456.96 gal. for a 4" borehole
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			6 gallons
Mixed on-site or batch-mixed and delivered?			On site
Grout additive 1 requested			bentonite to be hydrated separately from cement.
Additive 1 percent by dry weight relative to cement			3-5 %
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 JUL 30 PM 12: 25

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 JUL 30 PM 12: 25

Pure bentonite powder ("90 barrel yield") is allowed as a cement additive under NMOSE / AWWA guidelines, and neither granular bentonite nor extended-yield bentonite shall be mixed with cement for the purpose of this plugging. When supplementing a cement slurry with bentonite powder as requested, water demand for the mix increases at a rate of approximately 0.65 gallons of water for each 1% increment of bentonite by dry weight cement (above a water demand of not to exceed 6.0 gallons water per 94-lb. sack of cement). Therefore, a 3% bentonite/cement mix may contain up to 7.95 gallons of water (total) per 94-lb. sack of cement. This mixture would consist of 1.95 gallons of water used to make the bentonite slurry and 6.0 gallons of water for mixing one 94-lb. sack of cement. If a 5% bentonite additive rate is used, the volume of water for the bentonite slurry would be 3.25 gallons.

If used, any bentonite must be hydrated separately with its required increment of water before being mixed into the wet cement. If water is otherwise added to the combination of dry ingredients or the dry bentonite is blended into wet cement, the alkalinity of the cement will restrict the yield of the bentonite powder, resulting in excess free water in the slurry and excessive cement shrinkage upon curing.

4. Placement of the sealant within the wells shall be by pumping through a tremie pipe extended to near well bottom, and kept below top of the slurry column as the well is plugged from bottom-upwards in a manner that displaces the standing water column.

5. Prior to, or upon completion of plugging, any well casings may be cut-off below grade as necessary to allow approved construction onsite, provided a minimum 6-inch thickness of reinforced abandonment grout or concrete completely covers the top of the cut-off casing. More stringent local building codes may apply.

6. Should the NMOCD, or another regulatory agency sharing jurisdiction of the project authorize, or by regulation require a more stringent well plugging procedure than herein acknowledged, the more-stringent procedure should be followed. This, in part, includes provisions regarding pre-authorization to proceed, contaminant remediation, inspection, pulling/perforating of casing, or prohibition of free discharge of any fluid from the borehole during or related to the plugging process.

7. NMOSE witnessing of the plugging will not be required, but shall be facilitated if a NMOSE observer is onsite. NMOSE witnessing may be requested during normal work hours by calling the District 5 NMOSE Office at 505-334-4571, at least 48-hours in advance. NMOSE inspection will occur dependent on personnel availability.

8. Well Plugging Record(s) (available at: http://www.ose.state.nm.us/PDF/WellDrillers/WD-11.pdf) itemizing the actual abandonment process and materials used shall be filed with the State Engineer (NMOSE, 100 Gossett Drive, Suite A, Aztec, NM 87410), within 20 days after completion of well plugging. Please attach one copy of these plugging conditions.

The NMOSE Well Plugging Plan of Operations notice dated July 30, 2013, with any OSE annotations, is hereby approved with the aforesaid conditions applied, when signed by an authorized designee of the State Engineer:

Blaine A. Watson

Date: July 31, 2013

Blaine A. Watson, P.G.
NMOSE District 5, Water Rights Division

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
AZTEC

Scott A. Verhines, P.E.
State Engineer

100 Gossett Drive, Suite A
Aztec, New Mexico 87410

August 9, 2013

ConocoPhillips Company
ATTN: Terry Lauck
1380-G Plaza Office Building
315 Johnston Avenue
Bartlesville, OK 74004

RE: Well Plugging Plan of Operations for ConocoPhillips San Juan 32-8 found domestic well (No OSE File #, but associated with SJ-4023); San Juan County, New Mexico

Greetings:

After reviewing the Well Plugging Plan of Operations submitted to obtain OSE approval for the abandonment of one domestic well found at the referenced facility, which was received on August 9, 2013, the OSE is returning a favorable approval with Specific Plugging Conditions (attached). Please pay special attention to Specific Plugging Condition number 3, which requires the hydration of bentonite (if used), with the correct amount of water, before mixing into the cement slurry.

Please submit a completed Well Plugging Report, along with a copy of the approved plugging conditions, describing the actual abandonment process and itemized materials used to the address referenced above within 20 days after completion of well plugging.

Should you have any further questions or concerns regarding this correspondence, feel free to contact me at 505-334-4571.

Sincerely,

Blaine A. Watson

Blaine A. Watson, P.G.
District V Manager

Enclosures

cc: Aztec Reading (cover only)
Aztec File SJ-4023
WATERS

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WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging.

I. FILING FEE: There is no filing fee for this form.

II.GENERAL/WELL OWNERSHIP:

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: to be determined

Name of well owner: ConocoPhillips Company

Mailing address: 1380-G Plaza Office Bldg, 315 Johnston Ave.

City: Bartlesville State: OK Zip code: 74004

Phone number: 918-553-0889 E-mail: terry.s.lauck@conocophillips.com

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: National EWP

New Mexico Well Driller License No.: WD-1210 Expiration Date: Oct. 31, 2013

IV.WELL INFORMATION:

Note: A copy of the existing Well Record for the well to be plugged should be attached to this plan.

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 AUG -9 PM 3:

1) GPS Well Location: Latitude: 36 deg, 56 min, 56.4 sec

Longitude: 107 deg, 40 min, 1.9 sec,

2) Reason(s) for plugging well: the well was installed by the previous resident and is no longer in use

3) Was well used for any type of monitoring program? no If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? Unknown If yes, provide additional detail, including analytical results and/or laboratory report(s):

5) Static water level: unknown feet below land surface / feet above land surface (circle one)

6) Depth of the well: 120 feet

7) Inside diameter of innermost casing: 4 inches.

8) Casing material: thin walled PVC

9) The well was constructed with:

_____ an open-hole production interval, state the open interval: _____

x a well screen or perforated pipe, state the screened interval(s): unknown

10) What annular interval surrounding the artesian casing of this well is cement-grouted? _____

11) Was the well built with surface casing? no If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe: _____

12) Has all pumping equipment and associated piping been removed from the well? Yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well: _____

2) Will well head be cut-off below land surface after plugging? _____

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: .78.34 gal

4) Type of Cement proposed: Type I Type II Portland with 3 to 5 percent bentonite

5) Proposed cement grout mix: 6 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

7) Grout additives requested, and percent by dry weight relative to cement: bentonite 3 to 5%

2013 AUG -9 PM 3:28
STATE ENGINEER OFFICE
AZTEC, NEW MEXICO

8) Additional notes and calculations: _____

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

VIII. SIGNATURE:

I, Kelly Williams, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Kelly Williams — Signature of Applicant

8.9.13 — Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

X Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 9th day of August, 2013

Scott A. Verhines, State Engineer

By: S Lindsay
Savannah Lindsay
Water Rights Division

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 AUG -9 PM 3:28

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			Ground surface
Bottom of proposed interval of grout placement (ft bgl)			Bottom of well 120 ft
Theoretical volume of grout required per interval (gallons)			78.34
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			6 gallons
Mixed on-site or batch-mixed and delivered?			On site
Grout additive 1 requested			bentonite
Additive 1 percent by dry weight relative to cement			3-5 %
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 AUG -9 PM 3:28

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

STATE ENGINEER OFFICE
AZTEC, NEW MEXICO
2013 AUG -9 PM 3:28

Interstate Stream Commission
A Century of Service to New Mexico

DISTRICT 5

Scott A. Verhines, P.E.

NEW MEXICO STATE ENGINEER

Kelly Williams of Conestoga-Rovers & Associates (as consultant for ConocoPhillips Company) has identified 1 found domestic well (No OSE File number, but associated with SJ-4023), as tabulated below, to be plugged during other ongoing drilling operations at a facility. The well will be abandoned in accordance with NMOCD requirements to prevent a pathway for hydrogen-sulfide gas migration and exposure via the well. National Exploration Wells and Pumps (formerly WDC) will perform the plugging under well driller license #WD-1210. Any well components will be removed and the casing will be backfilled with a cement/bentonite grout to ground. The applicant has stated that the well is believed to be dry.

Location: Near ConocoPhillips San Juan 32-8 well site, rural San Juan County, New Mexico.
Approximate well coordinates: See tabulated data below.

Well Name	Inside Diameter (inches)	Depth to Water (feet)	Total Depth (feet)	Latitude North	Longitude East
Domestic Well	4	Dry	120	36.9490	107.6672

NMOCD project manager: N/A; well is being closed to meet OCD investigation needs.

Specific Plugging Conditions of Approval for one found, non-permitted domestic well, near ConocoPhillips San Juan 32-8 well site, rural San Juan County, NM:

1. Water well drilling and other well drilling activities, including well plugging, are regulated under 19.27.4 NMAC, which requires any person engaged in the business of well drilling within New Mexico to obtain a Well Driller License issued by the New Mexico Office of the State Engineer (NMOSE). Therefore, the firm of a New Mexico licensed Well Driller shall perform the well plugging.

2. The plugging plan stated a casing diameter of 4", for which a theoretical grout volume of 78.34 gallons was given. Based on the casing diameter and a total well depth of 120 feet, the proposed grout volume is reasonable. However, the total minimum volume of sealant required shall be calculated upon sounding the actual pluggable depth of the wells and multiplying by the correct volume factor for the casing or borehole diameter.

3. The Well Plugging Plan of Operations submitted requests the use of neat Portland cement (Type I/II should be used) with a 3-5 percent bentonite additive. Portland cement has a fundamental water demand of 5.2 gallons water per 94-lb. sack of cement, and this plan (as submitted) proposes 6.0 gallons of water per 94-lb. sack of cement. Use of mix water increment in excess of the fundamental water demand results in a thinned mix of cement prone to shrinkage that may disrupt effective sealing and hydraulic separation. AWWA Well Standards so allow use of a maximum of 6.0 gallons water per 94-lb. sack of cement if necessary for pumpability of neat cement grout. This volume excludes the additional water needed to separately hydrate the bentonite additive, as discussed below.

   Pure bentonite powder ("90 barrel yield") is allowed as a cement additive under NMOSE / AWWA guidelines, and neither granular bentonite nor extended-yield bentonite shall be mixed with cement for

Attachment C

NMOSE Permit Number SJ-4023

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
AZTEC

Scott A. Verhines, P.E.
State Engineer

100 Gossett Drive, Suite A
Aztec, New Mexico 87410

July 30, 2013

File Nbr: SJ-4023 (POD2)

ConocoPhillips Company
ATTN: Terry Lauck
1380-G Plaza Office Building
315 Johnston Avenue
Bartlesville, OK 74004

Greetings:

Enclosed is your copy of the above numbered permit that has been approved subject to the conditions set forth on the approval page.

A Well Record & Log (OSE Form wr-20) shall be filed in this office within twenty (20) days after completion of drilling, but no later than 7/30/2014.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us or will be mailed upon request.

Sincerely,

Blaine A. Watson

Blaine A. Watson, P.G.
District V Manager
Water Rights Division

Enclosures

cc: Aztec Reading
SJ-4023 File
WATERS

OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – AZTEC OFFICE

BW

OFFICIAL RECEIPT NUMBER: 5-4881 DATE: July 30, 2013 FILE NO.: SJ-4023POD52

TOTAL: 5.00 RECEIVED: Five, 00/100 DOLLARS CHECK NO.: _____ CASH: _____

PAYOR: Kelly Williams for Conestoga-Rovers+Assoc. ADDRESS: 210 W. Main, SACA CITY: Bloomfield STATE: NM

ZIP: 87413 RECEIVED BY: JH/Sundsar

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; **yellow** copy remains in district office, and **goldenrod** copy to accompany application being filed. If you make an error, void original and all copies and submit to Program Support/ASD along with other valid receipts.

A. Ground Water Rights Filing Fees

___ 1.	Declaration of Water Right	$ 1.00
___ 2.	Application to Appropriate or Supplement Domestic 72-12-1 Well	$125.00
___ 3.	Application for Stock Well	$ 5.00
___ 4.	Application to Repair or Deepen 72-12-1 Well	$ 75.00
___ 5.	Application for Replacement 72-12-1 Well	$ 75.00
___ 6.	Application to Change Purpose of Use 72-12-1 Well	$ 75.00
___ 7.	Application to Appropriate Irrig., Mun., or Comm. Use	$ 25.00
___ 8.	Application for Supplemental Non 72-12-1 Well	$ 25.00
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___10.	Application to Change Place or Purpose of Use Non 72-12-1 Well	$ 25.00
___11.	Application to Change Point of Diversion and Place and/or Purpose of Use	$ 50.00
___12.	Application for Extension of Time	$ 25.00
___13.	Proof of Application to Beneficial Use	$ 25.00
___14.	Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Ground Water	$ 50.00
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X 16.	Application for Test, Expl. Observ. Well	$ 5.00
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___18.	Application to Repair or Deepen Non 72-12-1 Well	$ 5.00
___19.	Application for Replacement Well Non 72-12-1 Well	$ 5.00

B. Surface Water Rights Filing Fees

___ 1.	Declaration of Water Right	$ 10.00
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___ 3.	Declaration of Livestock Water Impoundment	$ 10.00
___ 4.	Application for Livestock Water Impoundment	$ 10.00
___ 5.	Application to Appropriate	$ 25.00
___ 6.	Notice of Intent to Appropriate	$ 25.00
___ 7.	Application to Change Point of Diversion	$100.00
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___13.	Return Flow Credit	$100.00
___14.	Proof of Completion of Works	$ 25.00
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C. Miscellaneous Fees

___ 1.	Application for Well Driller's License	$50.00
___ 2.	Application for Renewal of Well Driller's License	$50.00
___ 3.	Application to Amend Well Driller's License	$50.00

D. Reproduction of Documents

_____ @ 0.20¢/copy $_____

_____ Map(s) $_____

E. Certification $_____

F. Other $_____

G. Comments:

_____

_____

_____

_____

_____

_____

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
AZTEC

Scott A. Verhines, P.E.
State Engineer

100 Gossett Drive, Suite A
Aztec, New Mexico 87410

July 30, 2013

File Nbr: SJ-4023 (POD3 & POD4)

ConocoPhillips Company
ATTN: Terry Lauck
1380-G Plaza Office Building
315 Johnston Avenue
Bartlesville, OK 74004

Greetings:

Enclosed is your copy of the above numbered permit that has been approved subject to the conditions set forth on the approval page.

A Well Record & Log (OSE Form wr-20) shall be filed in this office within twenty (20) days after completion of drilling, but no later than 7/30/2014.

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Sincerely,

Blaine A. Watson

Blaine A. Watson, P.G.
District V Manager
Water Rights Division

Enclosures

cc: Aztec Reading
SJ-4023 File
WATERS

OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – AZTEC OFFICE

BW

OFFICIAL RECEIPT NUMBER: 5-4872 DATE: 7/12/13 FILE NO.: SJ-4023 POD3-5

TOTAL: 15.00 RECEIVED: Fifteen + no/cc DOLLARS CHECK NO.: 1070 CASH: —

PAYOR: Christine Mathews for CRA/COP ADDRESS: 8810 Cottonwood Rd. NE CITY: Albuquerque STATE: NM

ZIP: 87111-4608 RECEIVED BY: BAW

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; **yellow** copy remains in district office, and **goldenrod** copy to accompany application being filed. If you make an error, void original and all copies and submit to Program Support/ASD along with other valid receipts.

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___	12.	Application for Extension of Time	$ 25.00
___	13.	Proof of Application to Beneficial Use	$ 25.00
___	14.	Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Ground Water	$ 50.00
___	15.	Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Ground Water	$ 50.00
3	16.	Application for Test, Expl. Observ. Well	$ 5.00
___	17.	Change of Ownership of Water Right	$ 2.00
___	18.	Application to Repair or Deepen Non 72-12-1 Well	$ 5.00
___	19.	Application for Replacement Well Non 72-12-1 Well	$ 5.00

B. Surface Water Rights Filing Fees

___	1.	Declaration of Water Right	$ 10.00
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D. Reproduction of Documents

_____ @ 0.20¢/copy $_____

_____ Map(s) $_____

E. Certification $_____

F. Other $_____

G. Comments:

_____

_____

_____

_____

_____

_____

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
AZTEC

Scott A. Verhines, P.E.
State Engineer

100 Gossett Drive, Suite A
Aztec, New Mexico 87410

July 30, 2013

File Nbr: SJ-4023 (POD5)

ConocoPhillips Company
ATTN: Terry Lauck
1380-G Plaza Office Building
315 Johnston Avenue
Bartlesville, OK 74004

Greetings:

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Sincerely,

Blaine A. Watson

Blaine A. Watson, P.G.
District V Manager
Water Rights Division

Enclosures

cc: Aztec Reading
SJ-4023 File
WATERS
U.S. Bureau of Land Management, Dave Mankiewicz, 6251 College Blvd., Suite A, Farmington, NM 87402

OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – AZTEC OFFICE

BW

OFFICIAL RECEIPT NUMBER: 5-4872 DATE: 7/12/13 FILE NO.: SJ-4023 POD3-5

TOTAL: 15.00 RECEIVED: Fifteen + no/100 DOLLARS CHECK NO.: 1070 CASH: —

PAYOR: Christine Mathews for CRA/COP ADDRESS: 8810 Cottonwood Rd. NE CITY: Albuquerque STATE: NM

ZIP: 87111-4608 RECEIVED BY: BAW

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; **yellow** copy remains in district office, and **goldenrod** copy to accompany application being filed. If you make an error, void original and all copies and submit to Program Support/ASD along with other valid receipts.

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D. Reproduction of Documents

_____ @ 0.20¢/copy $_____

_____ Map(s) $_____

E. Certification $_____

F. Other $_____

G. Comments:

_____

_____

_____

_____

_____

_____

Attachment D

BLM Sundry Notice

RECEIVED

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

JUL 22 2013

Farmington Field Office
Bureau of Land Management

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

5. Lease Serial No. SF-079717

6. If Indian, Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2.

7. If Unit of CA/Agreement, Name and/or No.
San Juan 32-8 Unit

1. Type of Well
[ ] Oil Well [X] Gas Well [ ] Other

8. Well Name and No.
San Juan 32-8 Unit 202

2. Name of Operator
ConocoPhillips Company

9. API Well No.
30-045-27562 + 30-045-11217

3a. Address
PO Box 4289, Farmington, NM 87499

3b. Phone No. (include area code)
(505) 326-9700

10. Field and Pool or Exploratory Area
Basin FC

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
Surface Unit M (SWNE), 1115' FSL & 1135' FWL, Sec. 27, T32N, R8W

11. Country or Parish, State
San Juan , New Mexico

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

TYPE OF SUBMISSION	TYPE OF ACTION			
[X] Notice of Intent	[ ] Acidize	[ ] Deepen	[ ] Production (Start/Resume)	[ ] Water Shut-Off
	[ ] Alter Casing	[ ] Fracture Treat	[ ] Reclamation	[ ] Well Integrity
[ ] Subsequent Report BP	[ ] Casing Repair	[ ] New Construction	[ ] Recomplete	[X] Other Drill Monitor Well
	[ ] Change Plans	[ ] Plug and Abandon	[ ] Temporarily Abandon	
[ ] Final Abandonment Notice	[ ] Convert to Injection	[ ] Plug Back	[ ] Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once Testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

ConocoPhillips Company requests permission to drill a monitoring well (MW-4) for the subject location in order to sample and monitor ground water quality. The archaeology report and EA were submitted to the BLM previously when the first monitoring well (MW-1) NOI was submitted on 8/29/12. Please see the attached history & proposed plan for the monitoring well. Also attached is the aerial photograph of the proposed MW-4 Site. Please note that the proposed site in the aerial photograph (MW-2 & MW-3) are marked for future plans only and are not intended to be drilled at this time. This NOI is for the MW-4 only.

RCVD AUG 19 '13
OIL CONS. DIV.
DIST. 3

3RP-1009

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
Kenny Davis

Title Staff Regulatory Technician

Signature

Date 7/17/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title Petr. Eng Date 8/14/13

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instruction on page 2)

NMOCD

30-045-27562

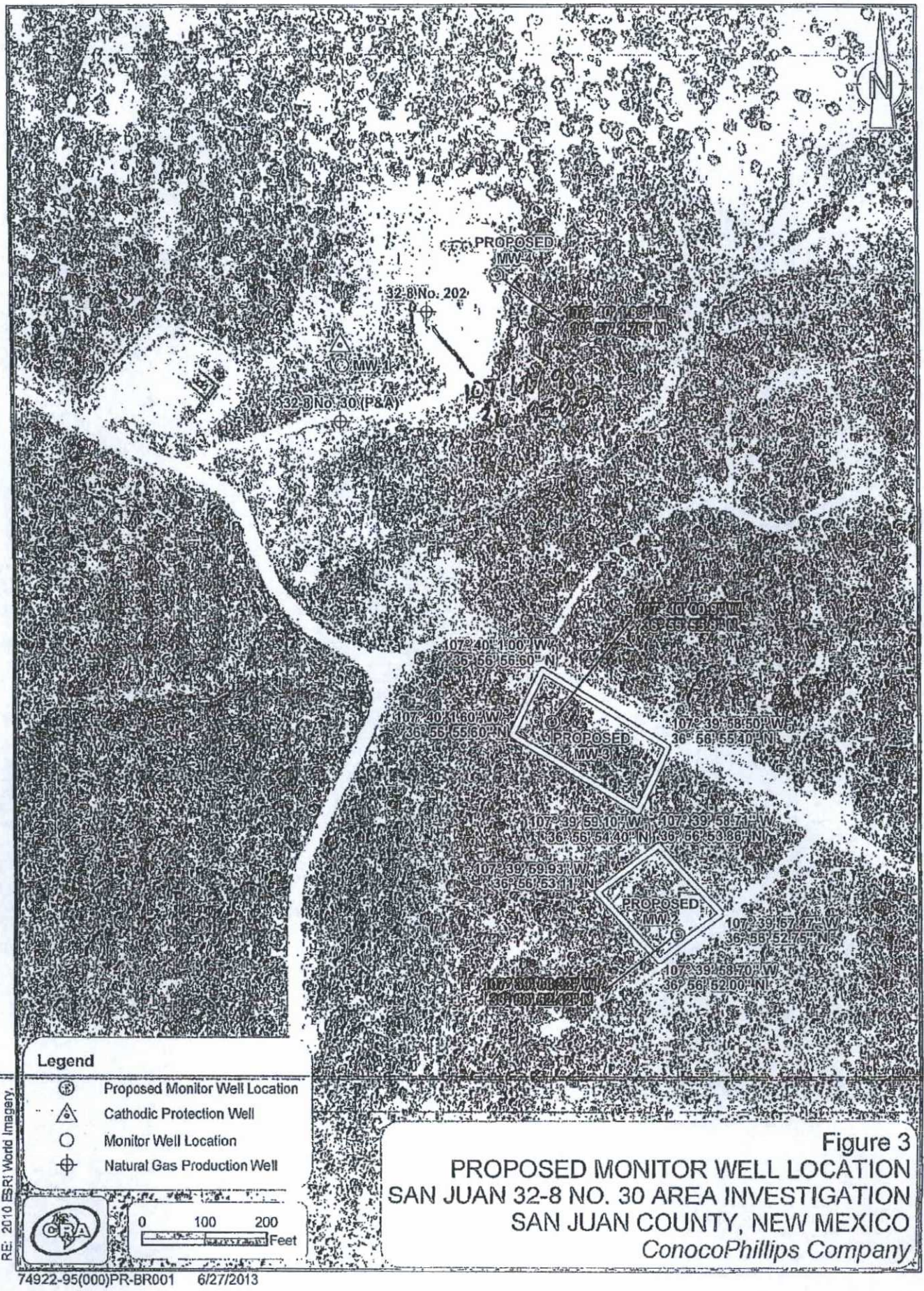


Figure 3
PROPOSED MONITOR WELL LOCATION
SAN JUAN 32-8 NO. 30 AREA INVESTIGATION
SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

74922-95(000)PR-BR001 6/27/2013

San Juan 32-8 Unit 202 MW-4 Monitoring Well Sundry Attachment

As part of an ongoing investigation to determine the extent of methane and hydrogen sulfide discovered in a nearby private water well in October of 2011, ConocoPhillips desires to install a 4-inch diameter groundwater monitoring well up to 600 feet deep on the San Juan 32-8 No. 202 well pad. The proposed location for Monitor Well MW-4 is in Township 32N, Range 8W, and Section 27, of San Juan County at 36°25'2.75"N and 107°40'1.83"W. Monitor Well MW-4 will be installed by means of dual tube reverse or flooded reverse.

The monitor well will be utilized to monitor groundwater quality for the following parameters; volatile organic compounds, magnesium, calcium, boron, potassium, total dissolved solids, chloride, bromide, sulfate, bicarbonate, sulfide, alkalinity, total petroleum hydrocarbons gasoline and diesel range organics, dissolved methane, and oxygen and hydrogen isotopes. This list of analytes may be modified depending upon monitoring results. Groundwater monitoring activities and results will be documented and reported to the New Mexico Oil Conservation Division (NMOCD). Groundwater monitoring will be conducted for a minimum of one calendar year with further guidance on duration negotiated with the NMOCD.

Once the NMOCD has deemed the investigation complete, monitor well plugging and abandonment procedures will be performed in accordance with all federal, state, and local regulations. Monitor well abandonment will be supervised by a qualified scientist or technician, the details recorded and reported to both the NMOCD and the New Mexico Office of the State Engineer. Since Monitor Well MW-4 will be located on the San Juan 32-8 No. 202 well pad, surface disturbance related to the monitor well will be addressed with future reclamation activities associated with decommissioning of the natural gas well site.

Attachment E

Boring Logs

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-2 (SB-1)
DATE COMPLETED: August 13, 2013
DRILLING METHOD: AIR ROTARY / ROTARY CORE
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	Light brown, fine arkosic SANDSTONE	2.00	4" stainless steel well casing				
	-- laminated						
	Gray, very fine SANDSTONE and SILTSTONE, cross-laminated	17.00	9-5/8" diameter mud rotary (0' - 469')				
	-- with shale laminations	22.00					
	Brown, fine to medium arkosic SANDSTONE	27.00					
	-- with lithic gravel and shale clasts, coarse sand	35.00					
	Dark gray SHALE with maroon mottling throughout	39.00	CEMENT-BENTONITE GROUT				
	-- weathered	48.00					
	Gray, very fine SANDSTONE and SILTSTONE	51.00					
	Dark gray SHALE, occasional high angle fractures	53.00					
	-- 1 foot laminated very fine sandstone	58.00	BENTONITE SEAL				
	-- maroon and reddish brown mottling	62.00					
	-- with gray siltstone	68.00					
	Light to dark gray, very fine arkosic SANDSTONE	70.00					
	-- laminated, fine to medium to 77'	74.00					
	-- laminations, coarser	80.00					
	Light brown, fine to medium arkosic SANDSTONE	84.00					
	-- gray mottling to 90'	88.00					
	-- with gravel	98.00					

NOTES:

SB-1 drilled as a 2.5" OD (HQ) borehole to 700 feet below ground surface.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-2 (SB-1)
DATE COMPLETED: August 13, 2013
DRILLING METHOD: AIR ROTARY / ROTARY CORE
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
105	Light gray, very fine arkosic SANDSTONE, laminated	100.00					
110	-- 1' with mudstone clasts	109.00					
115	-- 4' with shale laminations and mudstone clasts	114.00					
120			BENTONITE SEAL				
125							
130	-- 3' with shale laminations and mudstone clasts	127.00 129.00 130.00					
135	-- shale laminations Dark gray SILTSTONE Dark gray and maroon SHALE	131.00					
140	Light to dark gray, interbedded very fine SANDSTONE, SILTSTONE, and SHALE	139.00					
145							
150	Light gray, fine to medium arkosic SANDSTONE	149.00					
155							
160	-- with mudclasts and shale laminations	159.00					
165	Light to dark gray SHALE	164.00					
170	-- maroon to 176'	168.00					
175	-- weathered at 175'	175.00					
180	-- maroon	178.00					
185	-- silty	183.00 184.00					
190	Gray, fine arkosic SANDSTONE, laminated -- few 1/8" thick gypsum fracture fill	188.00					
195							
	Light to dark gray mottled, interbedded very fine SANDSTONE, SILTSTONE, and SHALE	196.00					

NOTES:

SB-1 drilled as a 2.5" OD (HQ) borehole to 700 feet below ground surface.

OVERBURDEN LOG 074922-95-MW-2,3_4.GPJ CRA_CORP.GDT 1/20/14

190

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-2 (SB-1)
DATE COMPLETED: August 13, 2013
DRILLING METHOD: AIR ROTARY / ROTARY CORE
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
205	Light to dark gray, mottled, interbedded SANDSTONE and SILTSTONE, bioturbated at top	200.00					
	-- 1' maroon shale	204.00					
	-- laminated	208.00					
210	Light gray, very fine arkosic SANDSTONE	211.00					
215	-- laminated	214.00					
	-- with mud clasts and laminations	217.00					
220	-- with gravel	220.00	BENTONITE SEAL				
225	-- with mud clasts and laminations	223.00					
230	Dark gray SHALE	231.00					
	-- maroon	234.00					
235	-- maroon	238.00					
240							
245	Light gray very fine arkosic SANDSTONE	245.00					
	-- dark reddish gray to gray, laminated	248.00					
250	-- gray	254.00					
255							
260	Dark gray SHALE	262.00					
265	-- some maroon mottling	267.00					
270							
275	Gray, very fine SANDSTONE, laminated	274.00					
	Light gray, fine to medium arkosic SANDSTONE	276.00					
280		283.00					
285	Light gray, very fine arkosic SANDSTONE	285.00					
	Light gray, fine to medium arkosic SANDSTONE with mud clasts and shale laminations						
290	-- large mud clasts	291.00 292.00					
295	Dark gray SHALE with occastional high angle fractures						

NOTES:

SB-1 drilled as a 2.5" OD (HQ) borehole to 700 feet below ground surface.

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-2 (SB-1)
DATE COMPLETED: August 13, 2013
DRILLING METHOD: AIR ROTARY / ROTARY CORE
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
305	Dark gray SHALE with yellowish brown mottles	300.00					
	-- maroon and brown mottles	304.00					
310							
	-- maroon	312.00					
315							
320			BENTONITE SEAL				
	-- maroon, few high angle fractures	321.00					
325							
	Light gray SILTSTONE with burrows and laminations	326.00					
330		329.00					
	Dark gray SHALE						
	-- high angle fractures	333.00					
335			SAND PACK				
340	-- silty to 342'	340.00					
	-- maroon	343.00	PORT 3 (339 ft)				
345							
	Gray, fine arkosic SANDSTONE	347.00					
350							
	Light gray, fine to medium arkosic SANDSTONE ("A" Sand)	352.00					
355							
	-- laminated, with gravel	358.00					
360			WELL SCREEN				
	-- cross-laminated	364.00					
365							
370		371.00					
	-- coarse sand with gravel	372.00					
	-- hydrogen sulfide odor	374.00					
375	-- mud clasts						
380							
	-- mud clasts	381.00					
		383.00					
385	Dark gray SHALE						
	-- few high angle fractures	386.00					
	-- 0.25" pyrite layer	388.00					
390							
	-- 8" fine sandstone layer	392.00					
395							
	-- maroon	397.00	PORT 2 (399 ft)				

NOTES:

SB-1 drilled as a 2.5" OD (HQ) borehole to 700 feet below ground surface.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-2 (SB-1)
DATE COMPLETED: August 13, 2013
DRILLING METHOD: AIR ROTARY / ROTARY CORE
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	Dark gray SHALE, high angle fracture	400.00					
405	Gray, fine arkosic SANDSTONE ("B" Sand)						
410							
415	Light gray, fine to medium arkosic SANDSTONE ("B" Sand)	414.00					
		417.00					
	Gray, fine arkosic SANDSTONE ("B" Sand)						
420	-- cross-laminated	420.00					
425	-- with gravel	424.00	BENTONITE SEAL				
	-- mud clasts	428.00					
430	Dark gray SHALE	430.00					
	-- few high angle fractures	433.00					
435	-- maroon with yellowish brown mottles	434.00					
440	Gray, very fine SANDSTONE and SILTSTONE with burrows and laminations	440.00					
445	Light gray, very fine arkosic SANDSTONE	445.00	SAND PACK				
		447.00					
450	Light gray, fine to medium arkosic SANDSTONE ("C" Sand)						
455			PORT 1 (454 ft)				
460	-- mud clasts	460.00	WELL SCREEN				
	-- fine sandstone	462.00					
465							
470	-- laminated	470.00					
	-- coarse, with gravel	472.00					
475	Dark gray SHALE	474.00					
480	-- maroon	480.00					
	-- yellowish brown mottles	482.00					
485	Dark gray sandy MUDSTONE with nodules, bioturbated, high angle fracture	486.00					
490	Light gray, very fine arkosic SANDSTONE	491.00					
495							
	Gray, fine SANDSTONE	498.00					

NOTES:

SB-1 drilled as a 2.5" OD (HQ) borehole to 700 feet below ground surface.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-2 (SB-1)
DATE COMPLETED: August 13, 2013
DRILLING METHOD: AIR ROTARY / ROTARY CORE
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	Gray fine SANDSTONE ("D" Sand to 570')	500.00					
505	-- coarser, with laminations	504.00					
	-- 2' mud clasts and shale laminations	506.00					
510							
	-- laminated	512.00					
515							
	Light gray, fine to medium arkosic SANDSTONE with gravel	516.00					
520		519.00					
	Dark gray, fine SANDSTONE						
	-- laminated	522.00					
525							
	-- organic black laminations	527.00					
530	Light gray, fine to medium arkosic SANDSTONE, cross-bedded, with gravel and shale clasts	529.00					
535							
	Gray, fine to medium arkosic SANDSTONE with gravel zones	536.00					
540							
545							
	Reddish gray, fine arkosic SANDSTONE	546.00					
550							
	-- laminated, with gravel	553.00					
555		554.00					
	Light gray, fine to medium arkosic SANDSTONE	558.00					
560	-- shale laminations						
	-- with gravel	561.00					
565							
	-- 1' mud clasts	566.00					
	-- 1' very fine sand, cross-laminated	567.00					
570		570.00					
	Dark gray SHALE with SILTSTONE at top, few high angle fractures						
575							
	-- maroon	578.00					
580							
585							
	Gray, very fine SANDSTONE and SILTSTONE, burrows at top	586.00					
590	-- laminated	590.00					
		594.00					
595	Light gray, fine to medium arkosic SANDSTONE						

NOTES:

SB-1 drilled as a 2.5" OD (HQ) borehole to 700 feet below ground surface.

OVERBURDEN LOG 074922-95-MW-2,3_4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-2 (SB-1)
DATE COMPLETED: August 13, 2013
DRILLING METHOD: AIR ROTARY / ROTARY CORE
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
605	Light gray, medium to coarse arkosic SANDSTONE, with lithic gravel	600.00					
	-- hydrogen sulfide odor	602.00					
610	Light gray, fine arkosic SANDSTONE with numerous layers (0.25") of fine white fibrous crystalline (gypsum) fracture-fill, gravel at base	607.00					
615	Dark gray SHALE	614.00					
	-- maroon	618.00					
620	-- silty, burrows	621.00					
	-- white nodules	623.00					
625	-- maroon	624.00					
630	Gray, very fine SANDSTONE and SILTSTONE	628.00					
	Gray, sandy MUDSTONE, bioturbated	632.00					
635	Reddish gray, fine arkosic SANDSTONE	637.00					
640	Light gray, fine to medium arkosic SANDSTONE	645.00					
645	-- with gravel	656.00					
650	Light gray, very fine arkosic SANDSTONE	661.00					
655	Dark gray SHALE	664.00					
	Light gray, very fine arkosic SANDSTONE	666.00					
660	Dark gray SHALE, silty at top	667.00					
665	Light gray, very fine arkosic SANDSTONE	675.00					
	Dark gray SHALE, with few high angle fractures	678.00					
670	-- maroon	680.00					
675	-- maroon	686.00					
680	-- maroon	690.00					
685	Gray SILTSTONE to reddish gray fine arkosic SANDSTONE, cross-laminated	695.00					
690							
695							

NOTES:

SB-1 drilled as a 2.5" OD (HQ) borehole to 700 feet below ground surface.

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-2 (SB-1)
DATE COMPLETED: August 13, 2013
DRILLING METHOD: AIR ROTARY / ROTARY CORE
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	
	END OF BOREHOLE @ 700.0ft BGS	700.00						

NOTES:

SB-1 drilled as a 2.5" OD (HQ) borehole to 700 feet below ground surface.

OVERBURDEN LOG 074922-95-MW-2,3_4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-3
DATE COMPLETED: August 11, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	No Log performed to 88 feet		4" Stalinless Steel Well Casing; 9-5/8" diameter air rotary (0' - 600'); CEMENT-BENTONITE GROUT; BENTONITE SEAL				
	SHALE	88.00					

NOTES:

Compiled from gamma ray/resistivity logs performed on 08/11/13.

OVERBURDEN LOG 074922-95-MW-2,3_4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-3
DATE COMPLETED: August 11, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
100	SHALE	100.00	BENTONITE SEAL				
105							
110							
115							
120							
125	Fine to medium SANDSTONE	123.00					
130	-- 2' finer sandstone	128.00					
135							
140	SHALE	138.00					
145							
150							
155							
160							
165							
170							
175							
180	Very fine SANDSTONE	178.00					
185							
190	Fine to medium SANDSTONE	190.00					
195							

NOTES:

Compiled from gamma ray/resistivity logs performed on 08/11/13.

OVERBURDEN LOG 074922-95-MW-2,3_4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-3
DATE COMPLETED: August 11, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
205	SHALE	202.00	BENTONITE SEAL				
210							
215							
220							
225	Very fine SANDSTONE	222.00					
230	Fine to medium SANDSTONE	230.00					
235							
240							
245							
250	Very fine SANDSTONE/SHALE	250.00					
255	Fine to medium SANDSTONE	256.00					
260							
265							
270	SHALE	268.00					
275							
280							
285							
290							
295							

NOTES:

Compiled from gamma ray/resistivity logs performed on 08/11/13.

OVERBURDEN LOG 074922-95-MW-2,3_4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-3
DATE COMPLETED: August 11, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
305	SHALE	300.00	BENTONITE SEAL				
310							
315							
320							
325	Very fine SANDSTONE	324.00	SAND PACK				
330	Fine to medium SANDSTONE ("A" Sand)	330.00	PORT 5 (334 ft)				
335							
340							
345			WELL SCREEN				
350			PORT 4 (349.5 ft)				
355							
360							
365	Very fine SANDSTONE	364.00	BENTONITE SEAL				
370	SHALE	370.00					
375							
380	Very fine SANDSTONE ("B" Sand)	379.00					
385							
390							
395							

NOTES:

Compiled from gamma ray/resistivity logs performed on 08/11/13.

OVERBURDEN LOG 074922-95-MW-2,3_4.GPJ CRA_CORP.GDT 1/20/14

200

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-3
DATE COMPLETED: August 11, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
405	Very fine SANDSTONE	400.00	BENTONITE SEAL				
410	SHALE	410.00					
415			SAND PACK				
420	Fine to medium SANDSTONE ("C" Sand)	420.00					
425							
430			WELL SCREEN				
435			PORT 3 (435.5 ft)				
440	Very fine SANDSTONE	440.00					
445							
450	SHALE	450.00					
455							
460							
465			BENTONITE SEAL				
470	Very fine SANDSTONE and SILTSTONE	470.00					
475							
480	Fine to medium SANDSTONE	480.00					
485							
490	-- very fine sandstone to 496'	488.00					
495							

NOTES:

Compiled from gamma ray/resistivity logs performed on 08/11/13.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-3
DATE COMPLETED: August 11, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
505	Fine to medium STANDSTONE ("D" Sand)	500.00					
510	-- very fine sandstone,siltstone, and possible shale to 520'	510.00	PORT 2 (510.5 ft)				
515							
520	-- very fine sandstone to 536'	520.00					
525			SAND PACK				
530							
535							
540							
545							
550	SHALE	550.00					
555							
560			BENTONITE SEAL				
565	Very fine SANDSTONE ("E" Sand)	564.00					
570							
575							
580			PORT 1 (580.5 ft)				
585	Fine to medium SANDSTONE	584.00					
590							
595	SHALE	592.00	Bottom of Well at 594'				

NOTES:

Compiled from gamma ray/resistivity logs performed on 08/11/13.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-3
DATE COMPLETED: August 11, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	
	END OF BOREHOLE @ 600.0ft BGS	600.00						

605
610
615
620
625
630
635
640
645
650
655
660
665
670
675
680
685
690
695

NOTES:

Compiled from gamma ray/resistivity logs performed on 08/11/13.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/20/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-4
DATE COMPLETED: September 6, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	No Log performed to 50 feet.		4" stainless steel well casing; 9-5/8" diameter air rotary (0' - 620')				
50	SANDSTONE	50.00	CEMENT-BENTONITE GROUT; BENTONITE SEAL				
70	SHALE	72.00					
80	SANDSTONE	82.00					

NOTES:

Compiled from gamma ray/resistivity logs performed on 09/06/13.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/14/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-4
DATE COMPLETED: September 6, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
105	SANDSTONE	100.00	BENTONITE SEAL				
110	SHALE	106.00					
115							
120							
125	SANDSTONE	122.00					
130							
135							
140							
145							
150							
155	SHALE	152.00					
160							
165	SANDSTONE	164.00					
170	SHALE	172.00					
175							
180							
185							
190							
195	SANDSTONE	198.00					

NOTES:

Compiled from gamma ray/resistivity logs performed on 09/06/13.

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-4
DATE COMPLETED: September 6, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
205	SANDSTONE	200.00	BENTONITE SEAL				
	SHALE	204.00					
210							
215							
220							
225	SANDSTONE	224.00					
230							
235							
240							
245	SHALE	244.00					
250							
255							
260							
265							
270							
275							
280							
285							
290							
295	-- 298' - 304' sandy	298.00					

NOTES:

Compiled from gamma ray/resistivity logs performed on 09/06/13.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/14/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-4
DATE COMPLETED: September 6, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	SHALE, sandy to 304'	300.00	BENTONITE SEAL				
	Fine to medium SANDSTONE ("A" Sand)	332.00	WELL SCREEN				
	-- very fine sandstone to 356'	348.00	PORT 5 (349 ft)				
			SAND PACK				
	SHALE	364.00	PORT 4 (364.5 ft)				
	Very fine SANDSTONE ("B" Sand)	386.00					

305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395

NOTES:

Compiled from gamma ray/resistivity logs performed on 09/06/13.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/14/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-4
DATE COMPLETED: September 6, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
405	Very fine SANDSTONE -- shaley at 401'	400.00 401.00	BENTONITE SEAL				
410	SHALE	408.00					
415			SAND PACK				
420	Fine to medium SANDSTONE ("C" Sand)	418.00					
425			WELL SCREEN				
430							
435			PORT 3 (435.5 ft)				
440							
445	SHALE	442.00					
450							
455							
460							
465	Very fine SANDSTONE/SILTSTONE	462.00					
470			BENTONITE SEAL				
475							
480							
485							
490							
495			SAND PACK				

NOTES:

Compiled from gamma ray/resistivity logs performed on 09/06/13.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/14/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-4
DATE COMPLETED: September 6, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
505	Fine to medium SANDSTONE ("D" Sand)	500.00	PORT 2 (510.5 ft)				
510							
515							
520							
525			WELL SCREEN				
530							
535							
540			SAND PACK				
545							
550	SHALE	546.00	BENTONITE SEAL				
555							
560							
565	Fine to medium SANDSTONE ("E" Sand)	564.00	SAND PACK				
570							
575			PORT 1 (580.5 ft)				
580							
585	SHALE	586.00					
590							
595			BOTTOM OF WELL AT 594'				

NOTES:

Compiled from gamma ray/resistivity logs performed on 09/06/13.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/14/14

STRATIGRAPHIC LOG

PROJECT NAME: SAN JUAN 32-08 NO. 30 AREA
PROJECT NUMBER: 074922-95
CLIENT: CONOCOPHILLIPS COMPANY
LOCATION: SAN JUAN COUNTY, NEW MEXICO

HOLE DESIGNATION: MW-4
DATE COMPLETED: September 6, 2013
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. CARTER / M. HIRE
DRILLING CONTRACTOR: NATIONAL EWP

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITOR WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
605	SHALE	600.00					
610							
615							
	Very fine SANDSTONE	616.00					
620	END OF BOREHOLE @ 620.0ft BGS	620.00					
625							
630							
635							
640							
645							
650							
655							
660							
665							
670							
675							
680							
685							
690							
695							

NOTES:

Compiled from gamma ray/resistivity logs performed on 09/06/13.

OVERBURDEN LOG 074922-95-MW-2,3,4.GPJ CRA_CORP.GDT 1/14/14

Attachment F

Photographic Log of SB-1



Photo 1: Dark gray SHALE (400 to 402 feet).



Photo 2: Gray SHALE with purple mottling (64 to 66 feet).

SITE PHOTOGRAPHS



Photo 3: Gray SHALE with purple mottling and fractures (174 to 176 feet).

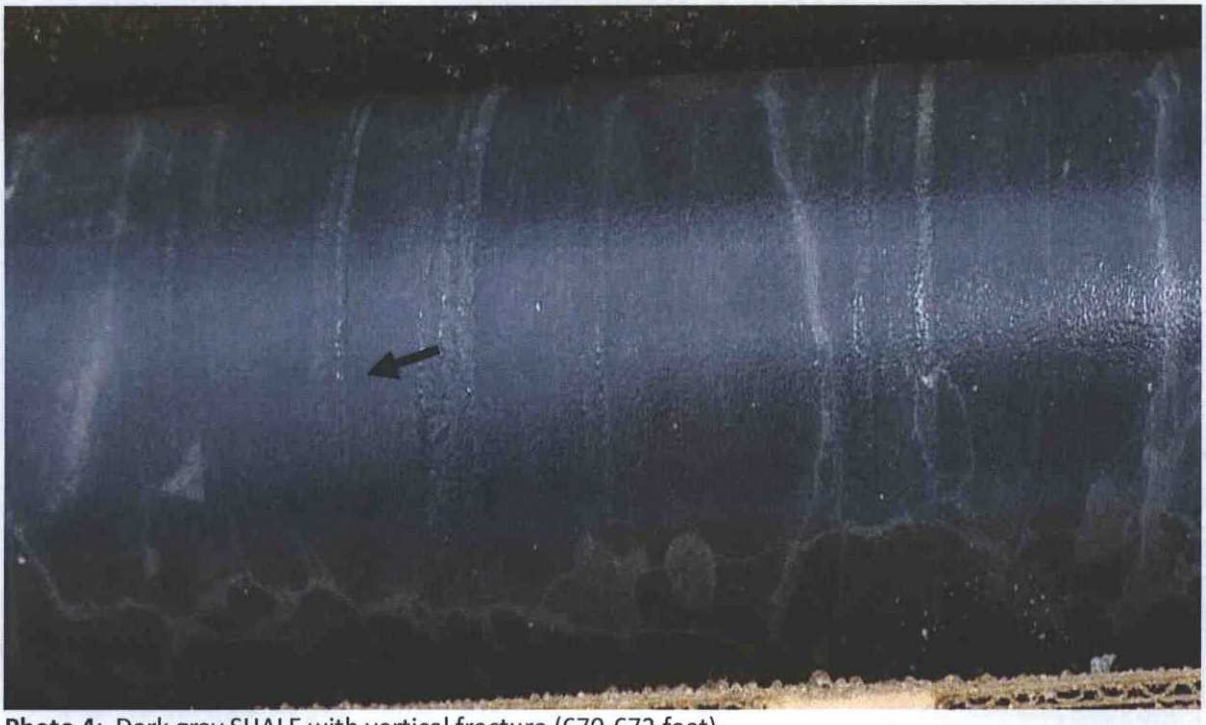


Photo 4: Dark gray SHALE with vertical fracture (670-672 feet).

SITE PHOTOGRAPHS



Photo 5: Gray fine to medium SANDSTONE with rip-up mud clasts (128 to 130 feet).



Photo 6: Gray fine SANDSTONE with a burrow (442 to 444 feet).

SITE PHOTOGRAPHS



Photo 7: Gray fine arkosic SANDSTONE, with laminations (224 to 226 feet).

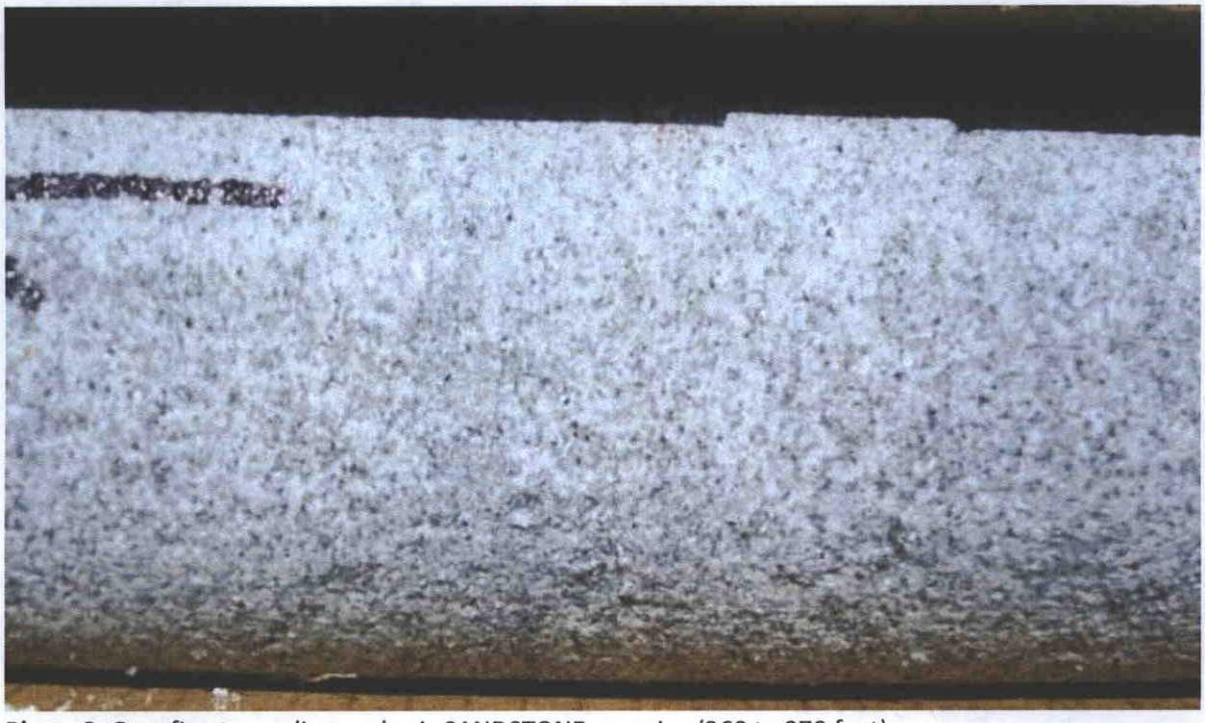


Photo 8: Gray fine to medium, arkosic SANDSTONE, massive (368 to 370 feet).

SITE PHOTOGRAPHS

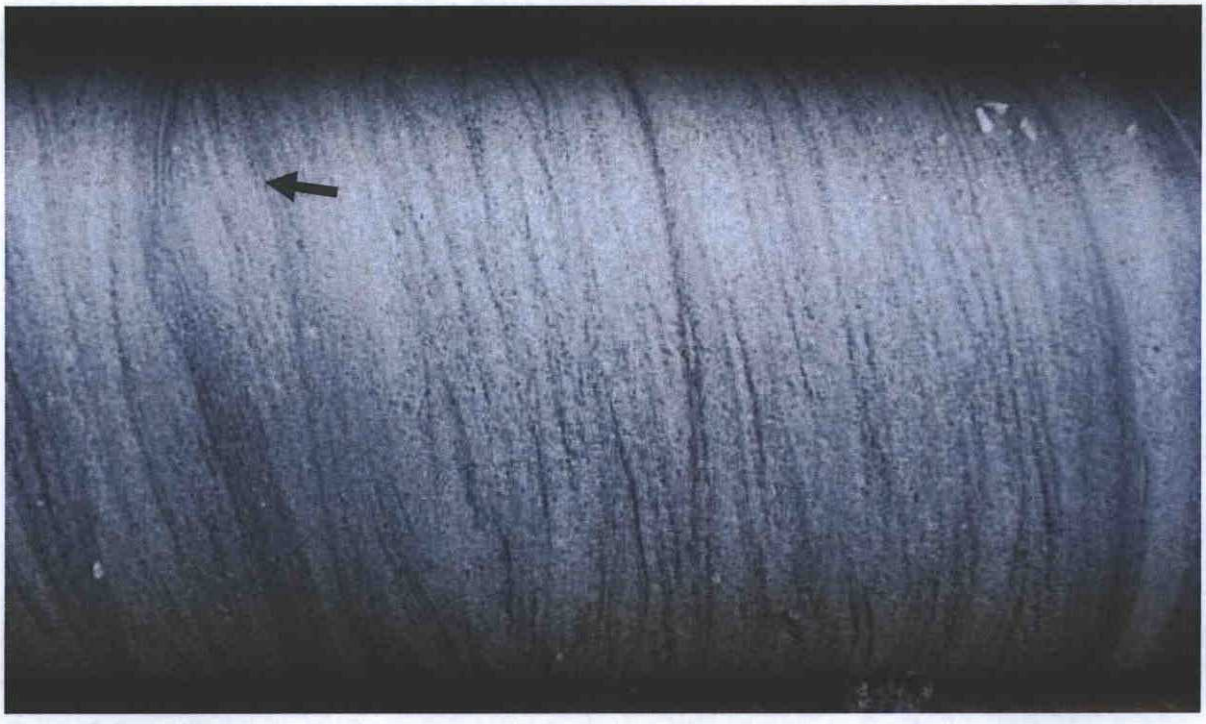


Photo 9: Gray fine arkosic SANDSTONE, cross laminated (566 to 568 feet).

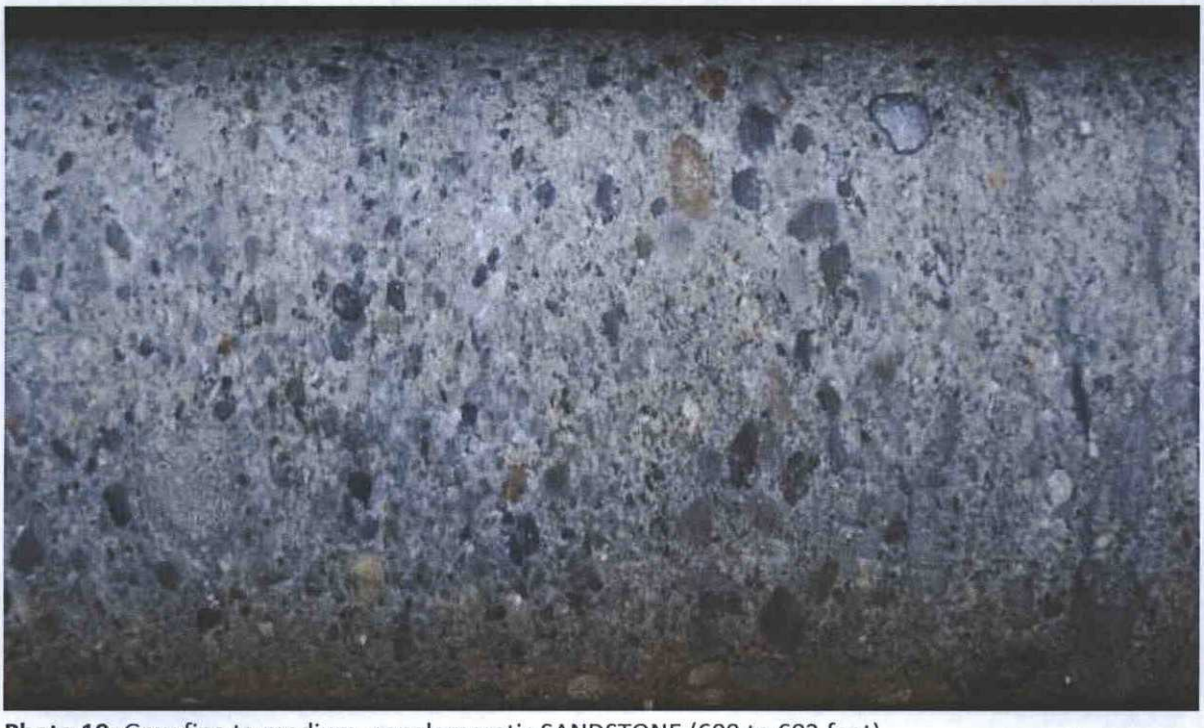


Photo 10: Gray fine to medium, conglomeratic SANDSTONE (600 to 602 feet).

SITE PHOTOGRAPHS



Photo 11: Gray fine to medium, arkosic SANDSTONE, with fibrous gypsum vein deposits (608 to 610 feet).

Attachment G

Geophysical Logs

JET WEST
GEOPHYSICAL SERVICES, LLC.

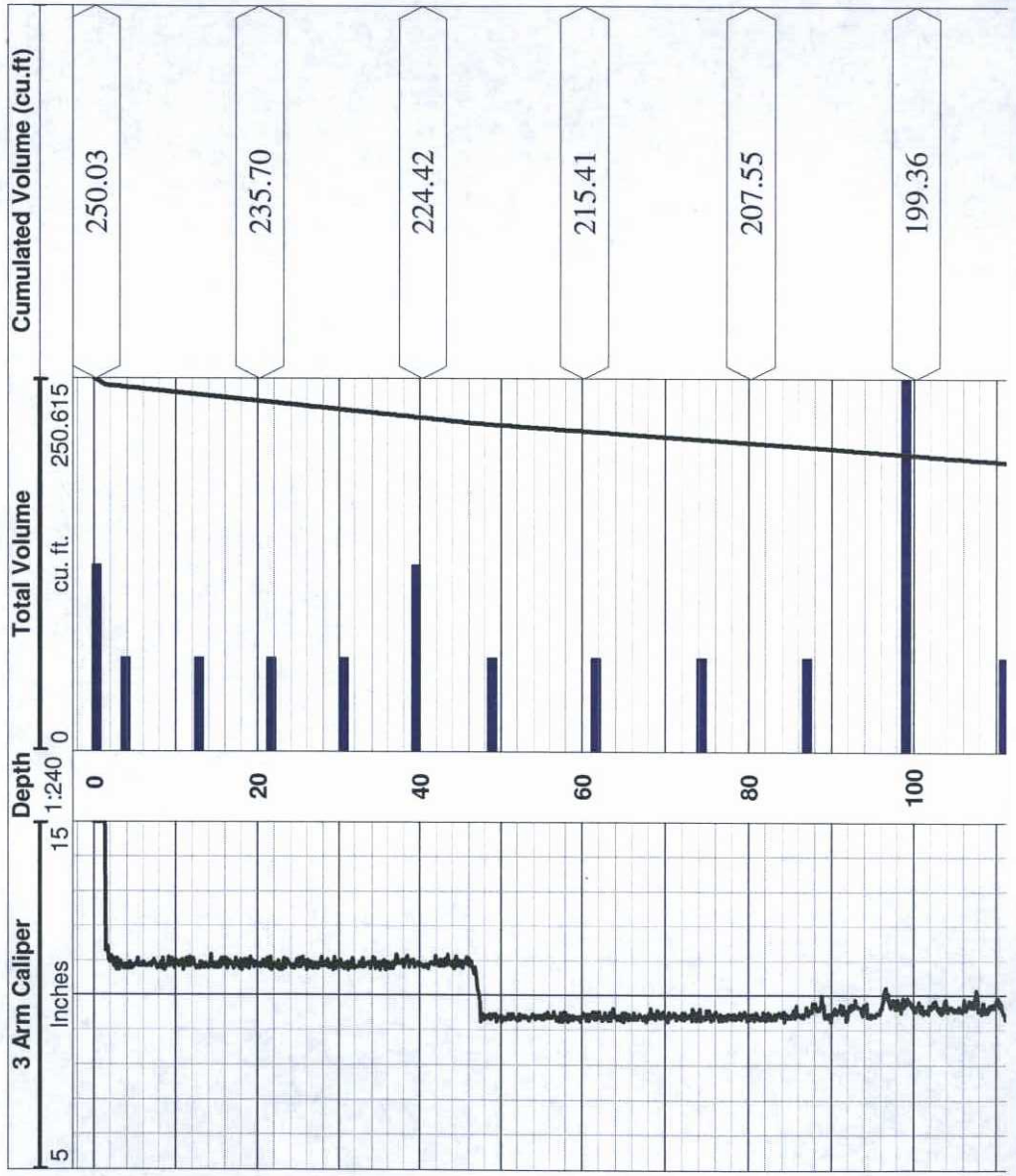
	COMPANY	Conestoga-Rovers & Associates	
	WELL ID	MW-3	
	FIELD	San Juan 32-8	
	COUNTY	San Juan STATE New Mexico	
NAD 27 Northing: Easting:	**TYPE OF LOG:**	**3 Arm Caliper Volume Calc**	OTHER SERVICES Sonic Deviation Gamma Ray Electrics Temperature / Fluid Res.
	LOCATION		
	SEC	TWP RGE	API No.

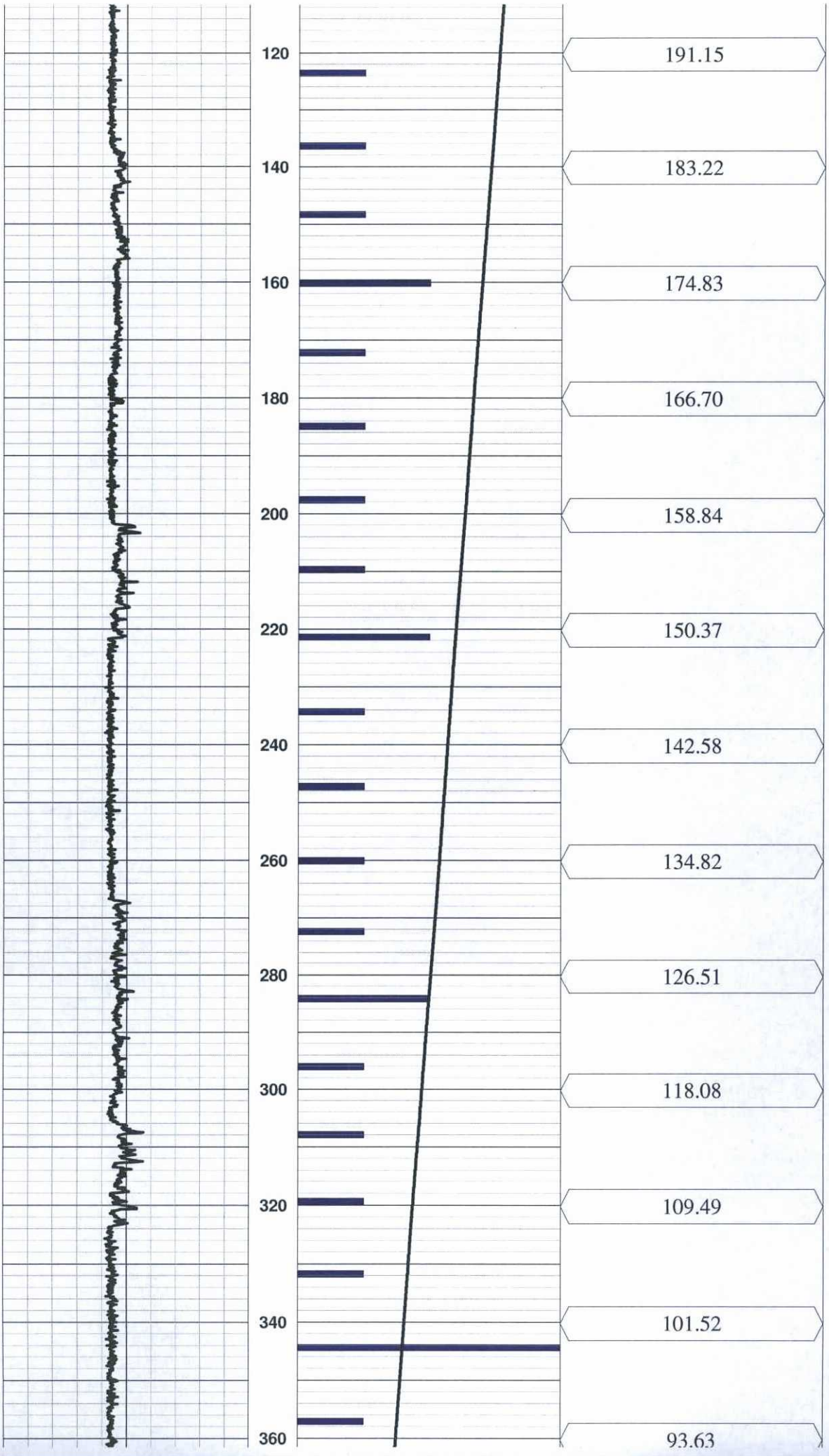
PERMANENT DATUM	Ground Level	ELEVATION	K.B.
LOG MEAS. FROM	Ground Level	ABOVE PERM. DATUM	T.O.C
DRILLING MEAS. FROM	Ground Level		G.L.

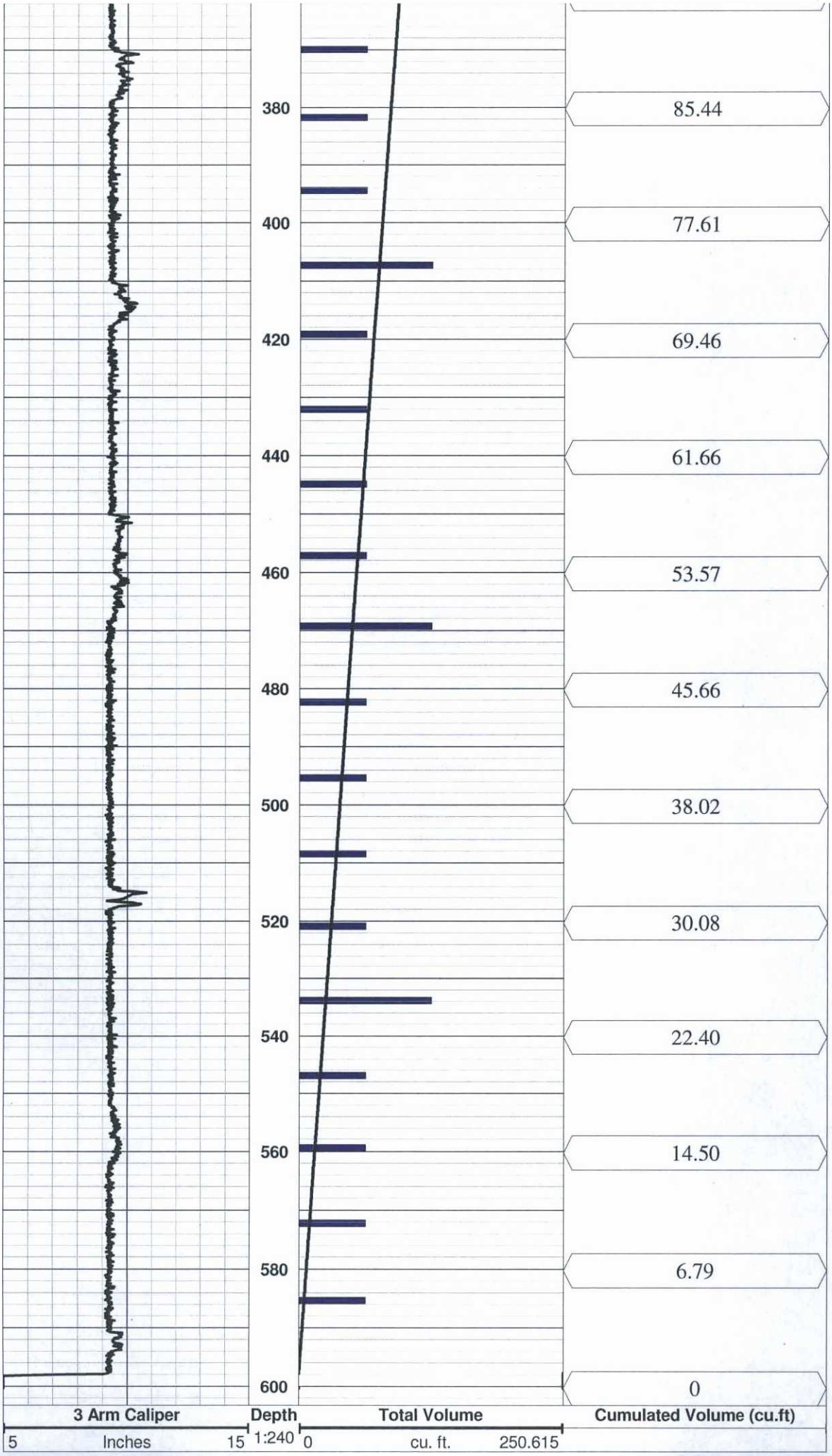
DATE	08-11-2013	TYPE FLUID IN HOLE	Fresh wa
RUN No.	one	SALINITY	
TYPE LOG	Polyprobe	DENSITY	
DEPTH-DRILLER	600 ft.	LEVEL	276 ft.
DEPTH-LOGGER	600 ft.	MAX. REG. TEMP	
BTM LOGGED INTERVAL	600 ft.	DIGITIZE INTERVAL	0.2 ft.
TOP LOGGED INTERVAL	Surface		
OPERATING RIG TIME			
RECORDED BY	T. Staatz		
WITNESSED BY	CRA		

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	12.0 in.	1 ft.	47 ft.	9.0 in.	Steel	1	47 ft.
2	9.0 in.	47 ft.	600 ft.				
3							

REMARKS:




120
140
160
180
200
220
240
260
280
300
320
340
360
191.15
183.22
174.83
166.70
158.84
150.37
142.58
134.82
126.51
118.08
109.49
101.52
93.63


380
400
420
440
460
480
500
520
540
560
580
600
85.44
77.61
69.46
61.66
53.57
45.66
38.02
30.08
22.40
14.50
6.79
0
3 Arm Caliper
Depth
Total Volume
Cumulated Volume (cu.ft)
5
Inches
15
1:240
0
cu. ft.
250.615

JET WEST
GEOPHYSICAL SERVICES, LLC.

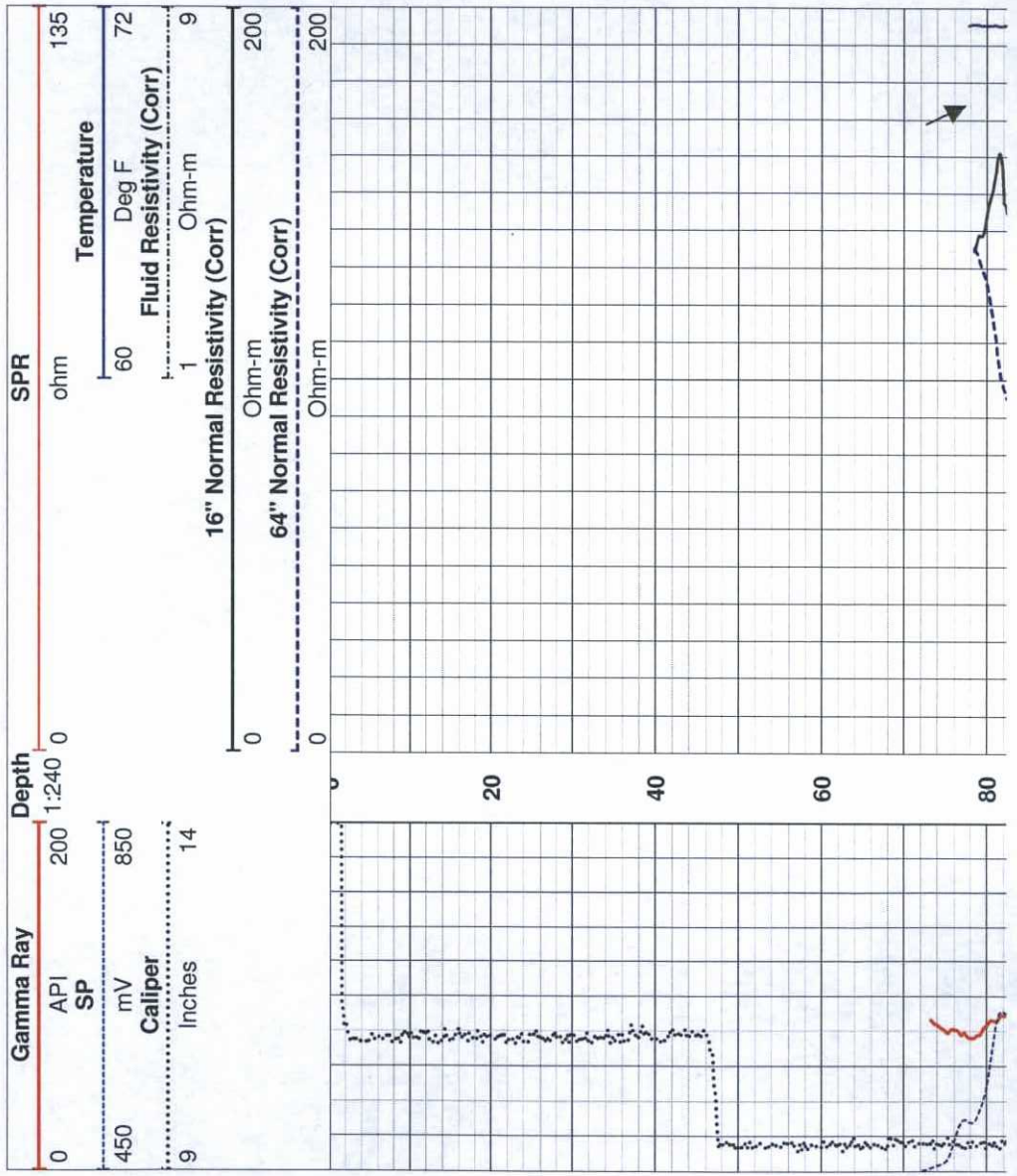
COMPANY	Conestoga-Rovers & Associates
WELL ID	MW-3
FIELD	San Juan 32-8
COUNTY	San Juan STATE New Mexico
TYPE OF LOG:	**Gamma Ray / Normal Resistivity Temperature / 3-Arm Caliper**
OTHER SERVICES	Sonic Deviation
NAD 27 Northing: Easting:	
LOCATION SEC TWP RGE	API No.

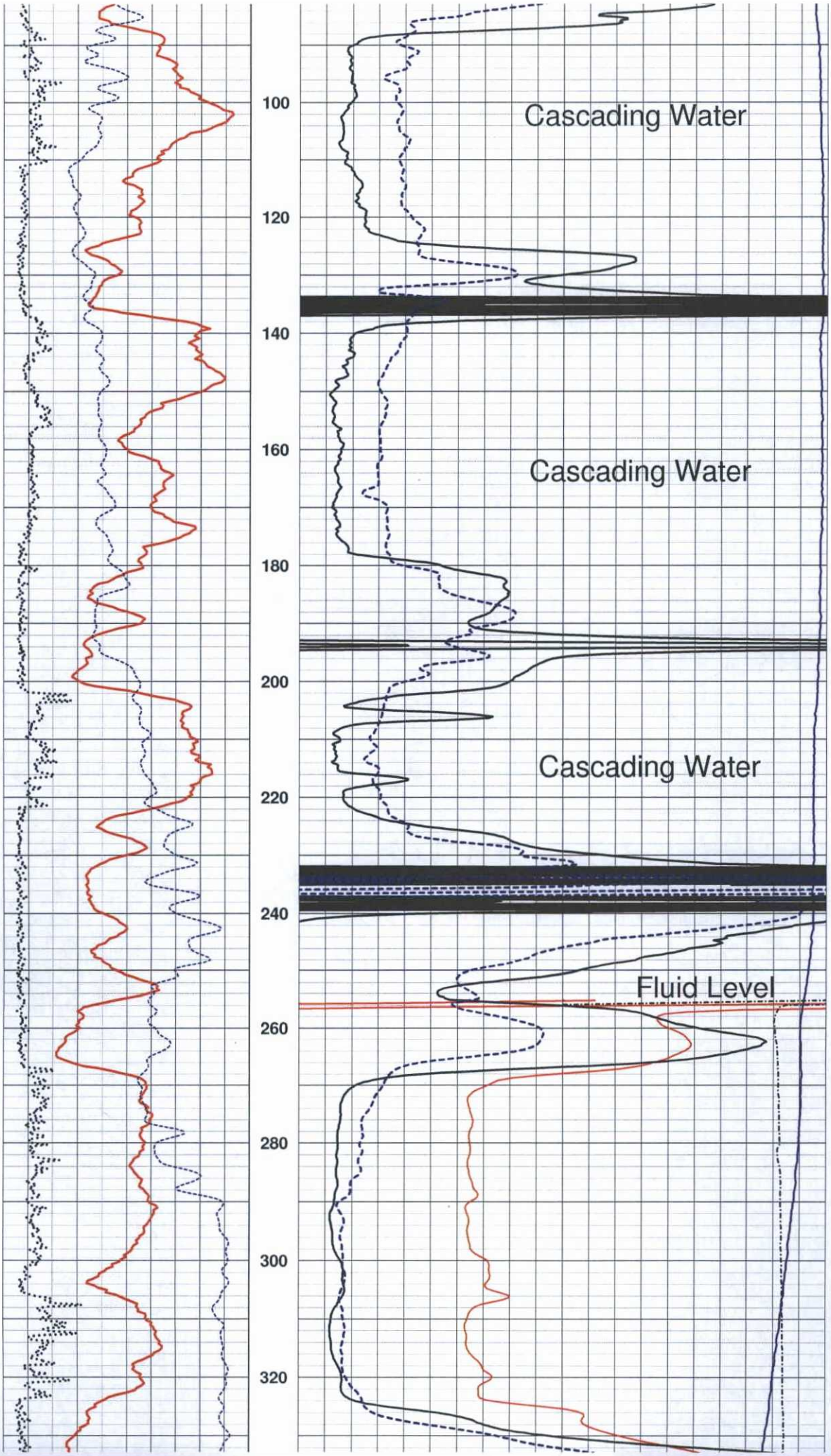
PERMANENT DATUM	Ground Level	ELEVATION	K.B.
LOG MEAS. FROM	Ground Level	ABOVE PERM. DATUM	T.O.C
DRILLING MEAS. FROM	Ground Level		G.L.

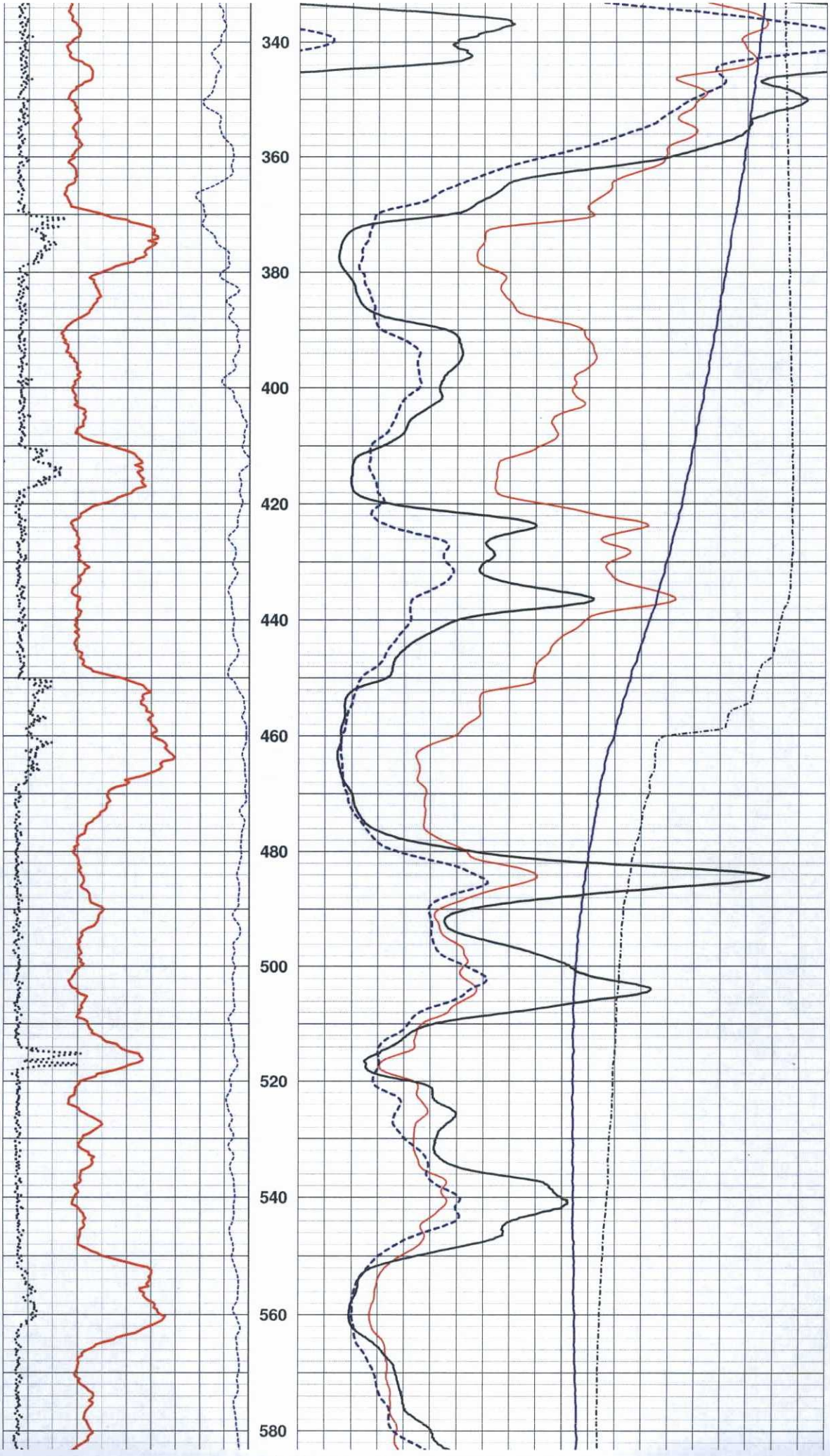
DATE	08-11-2013	TYPE FLUID IN HOLE	Fresh wa
RUN No.	one	SALINITY	
TYPE LOG	Polyprobe	DENSITY	
DEPTH-DRILLER	600 ft.	LEVEL	276 ft.
DEPTH-LOGGER	600 ft.	MAX. REG. TEMP	
BTM LOGGED INTERVAL	600 ft.	DIGITIZE INTERVAL	0.2 ft.
TOP LOGGED INTERVAL	Surface		
OPERATING RIG TIME			
RECORDED BY	T. Staatz		
WITNESSED BY	CRA		

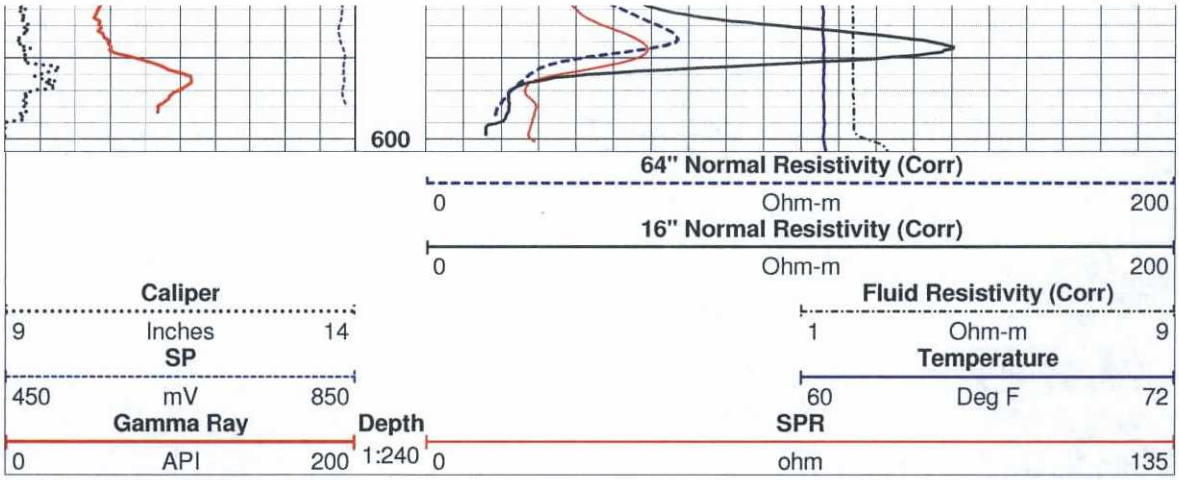
RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	12.0 in.	1 ft.	47 ft.	9.0 in.	Steel	1	47 ft.
2	9.0 in.	47 ft.	600 ft.				
3							

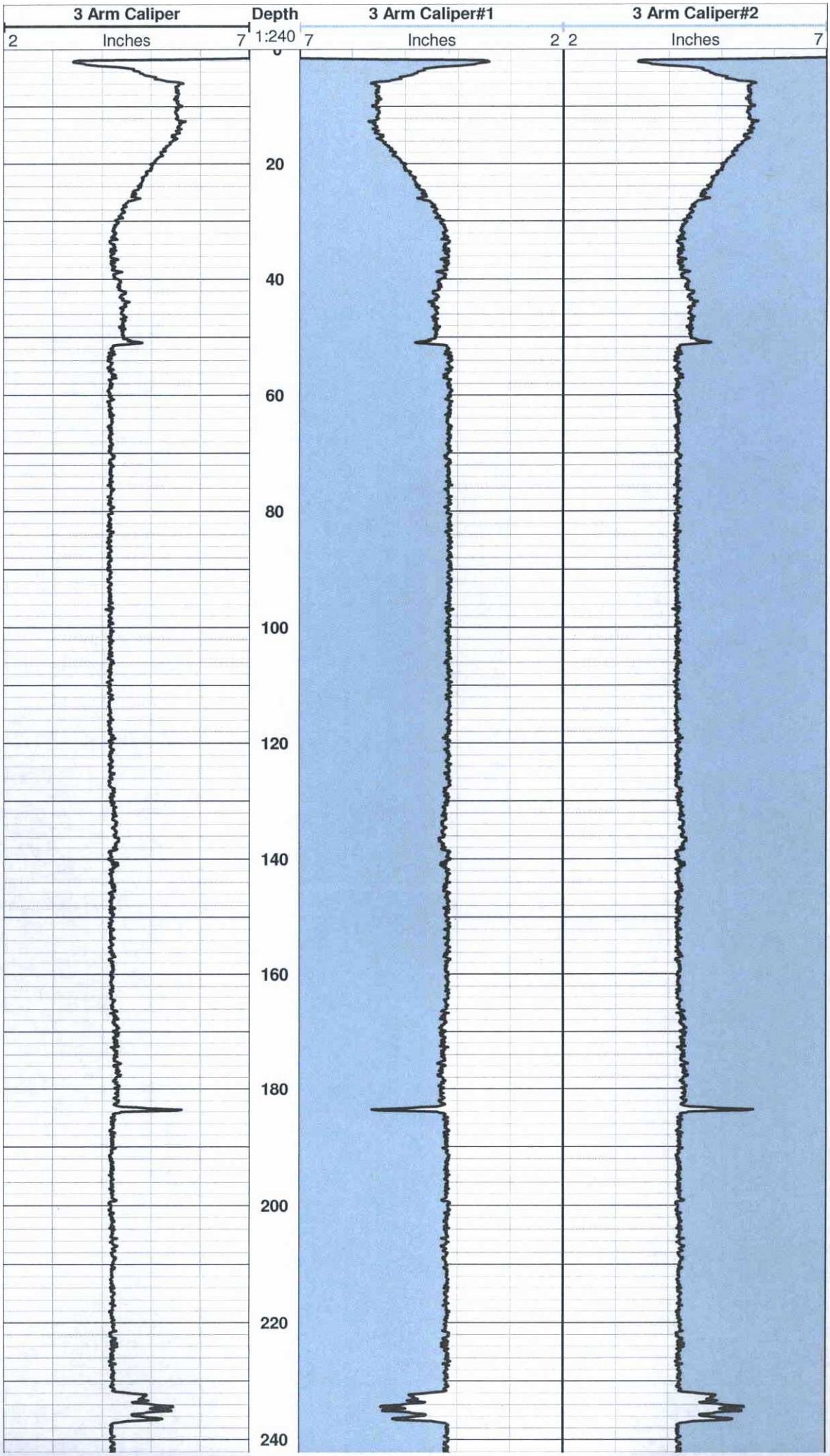
REMARKS:

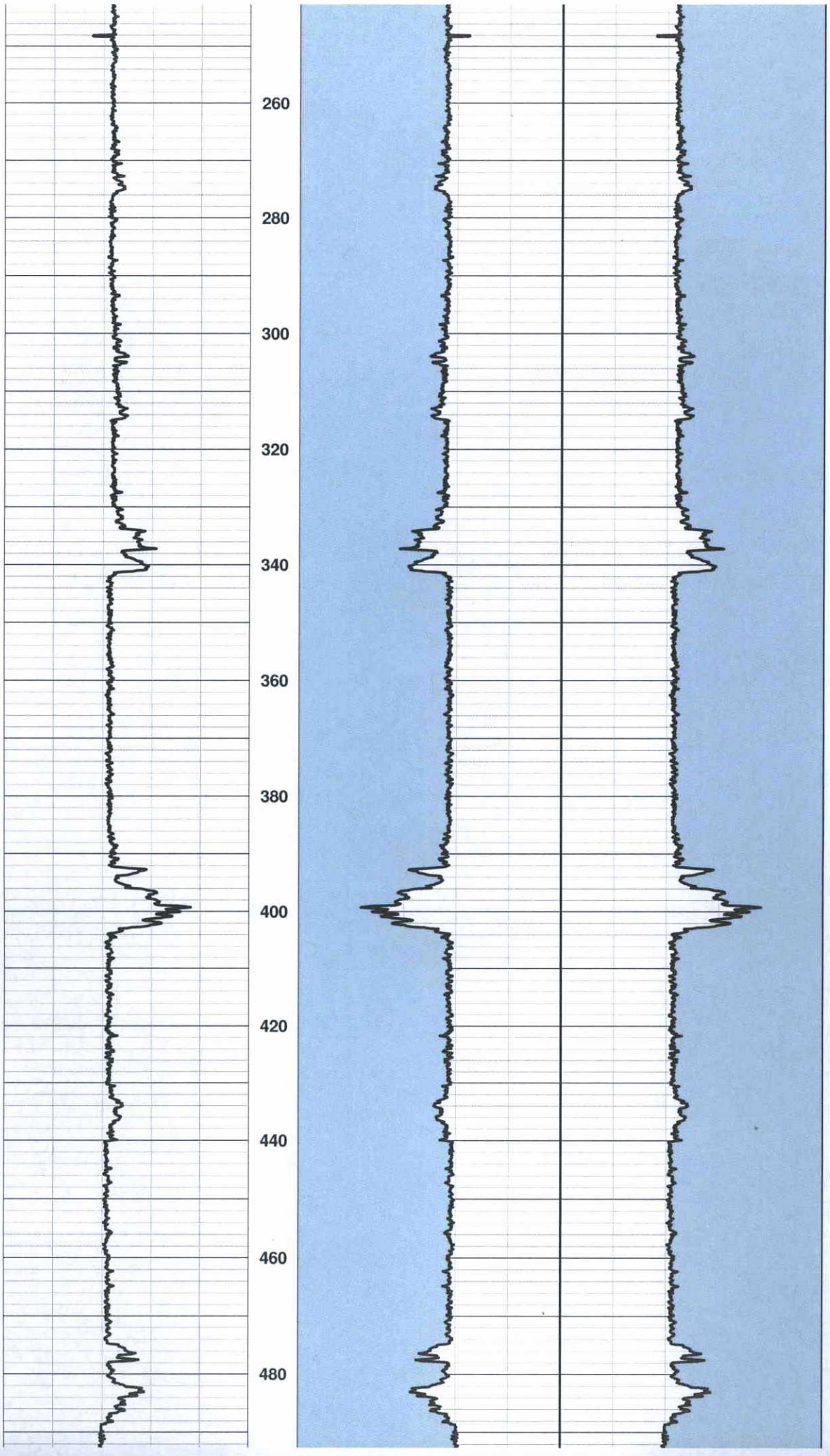


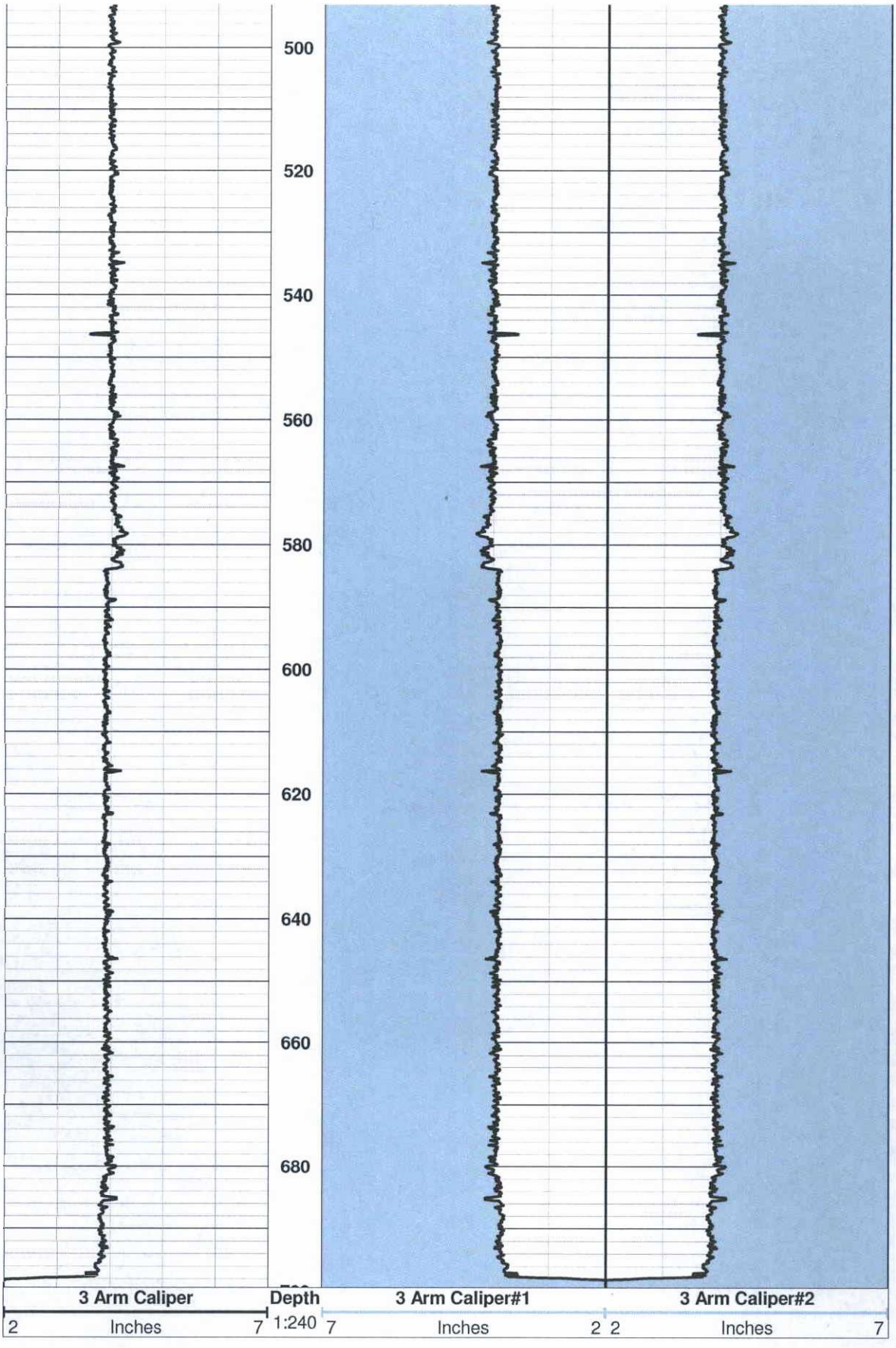

100
120
140
160
180
200
220
240
260
280
300
320
Cascading Water
Cascading Water
Cascading Water
Fluid Level

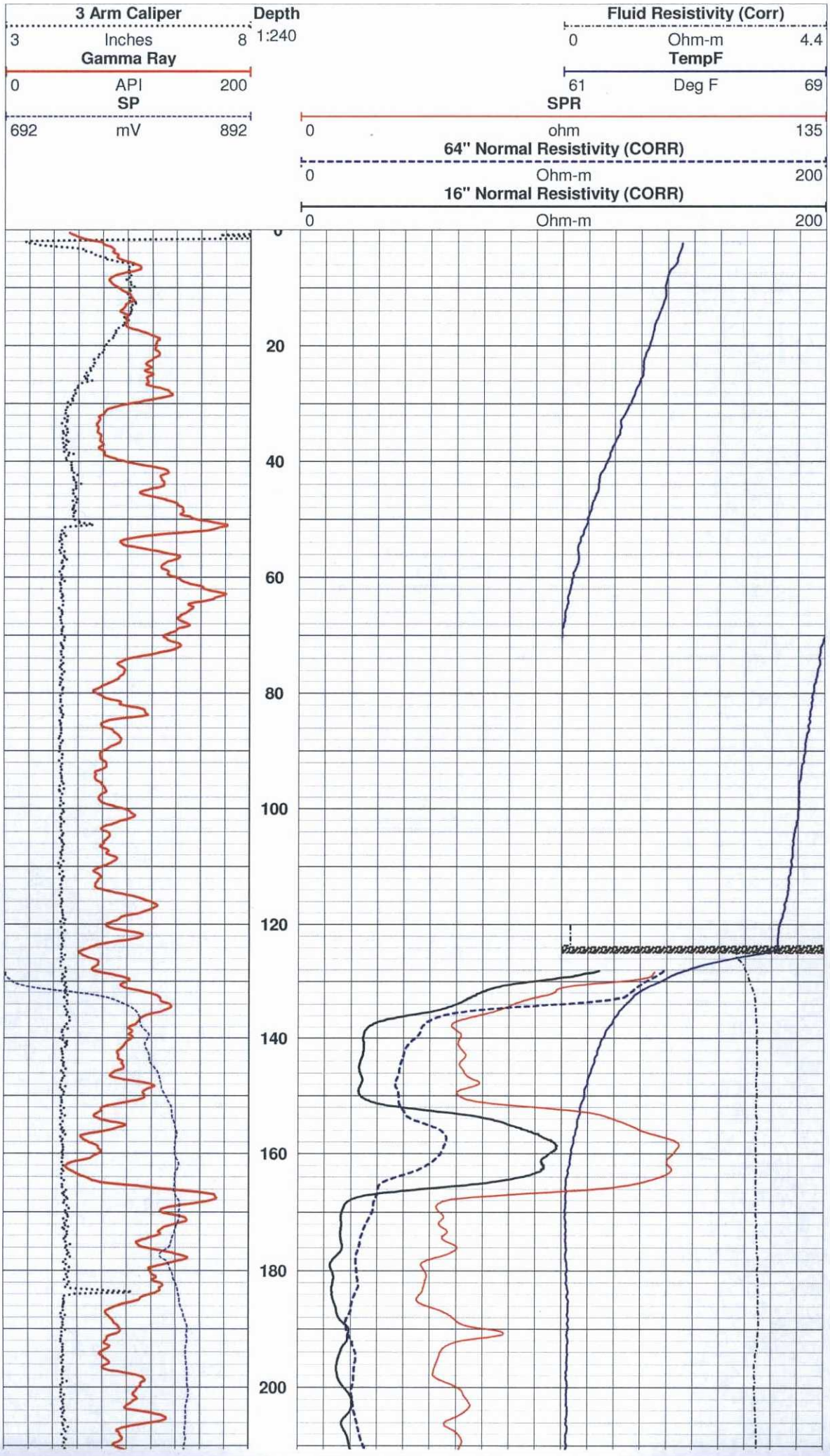

340
360
380
400
420
440
460
480
500
520
540
560
580

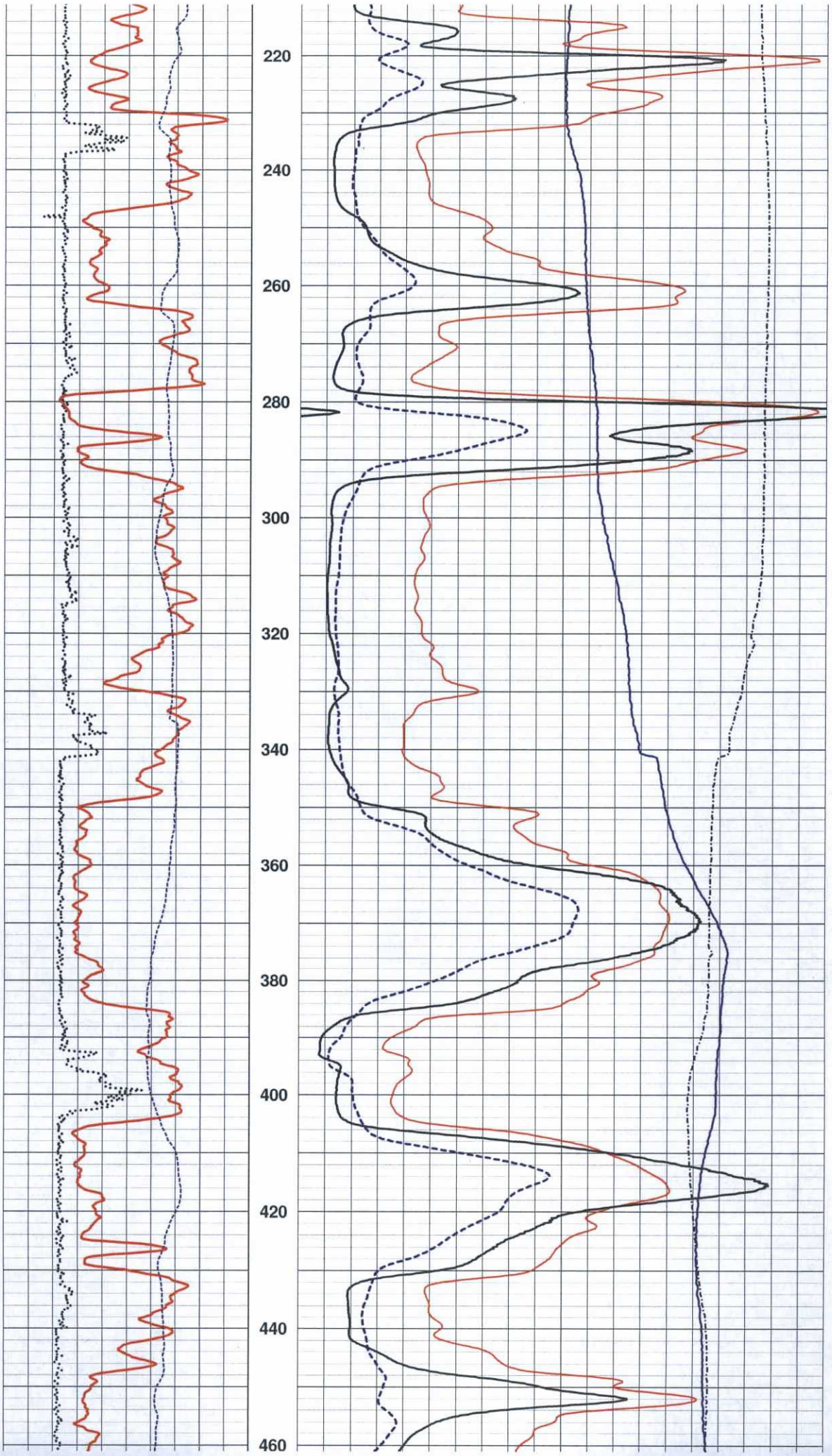

600
64" Normal Resistivity (Corr)
0
Ohm-m
200
16" Normal Resistivity (Corr)
0
Ohm-m
200
Caliper
9
Inches
14
Fluid Resistivity (Corr)
1
Ohm-m
9
SP
450
mV
850
Temperature
60
Deg F
72
Gamma Ray
0
API
200
Depth
1:240
SPR
0
ohm
135

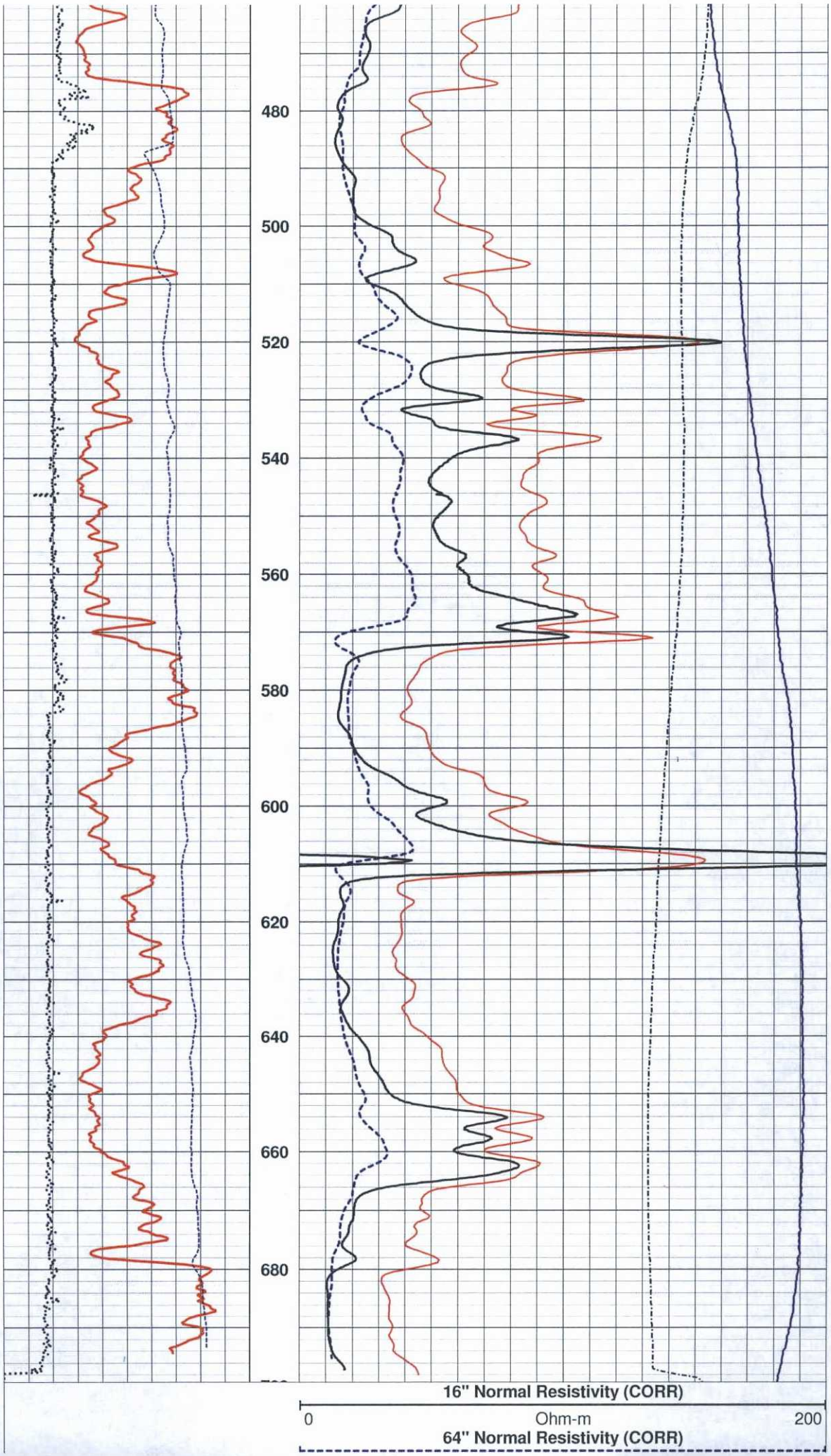

3 Arm Caliper
2
Inches
7
Depth
1:240
3 Arm Caliper#1
7
Inches
2
3 Arm Caliper#2
2
Inches
7
20
40
60
80
100
120
140
160
180
200
220
240


260
280
300
320
340
360
380
400
420
440
460
480

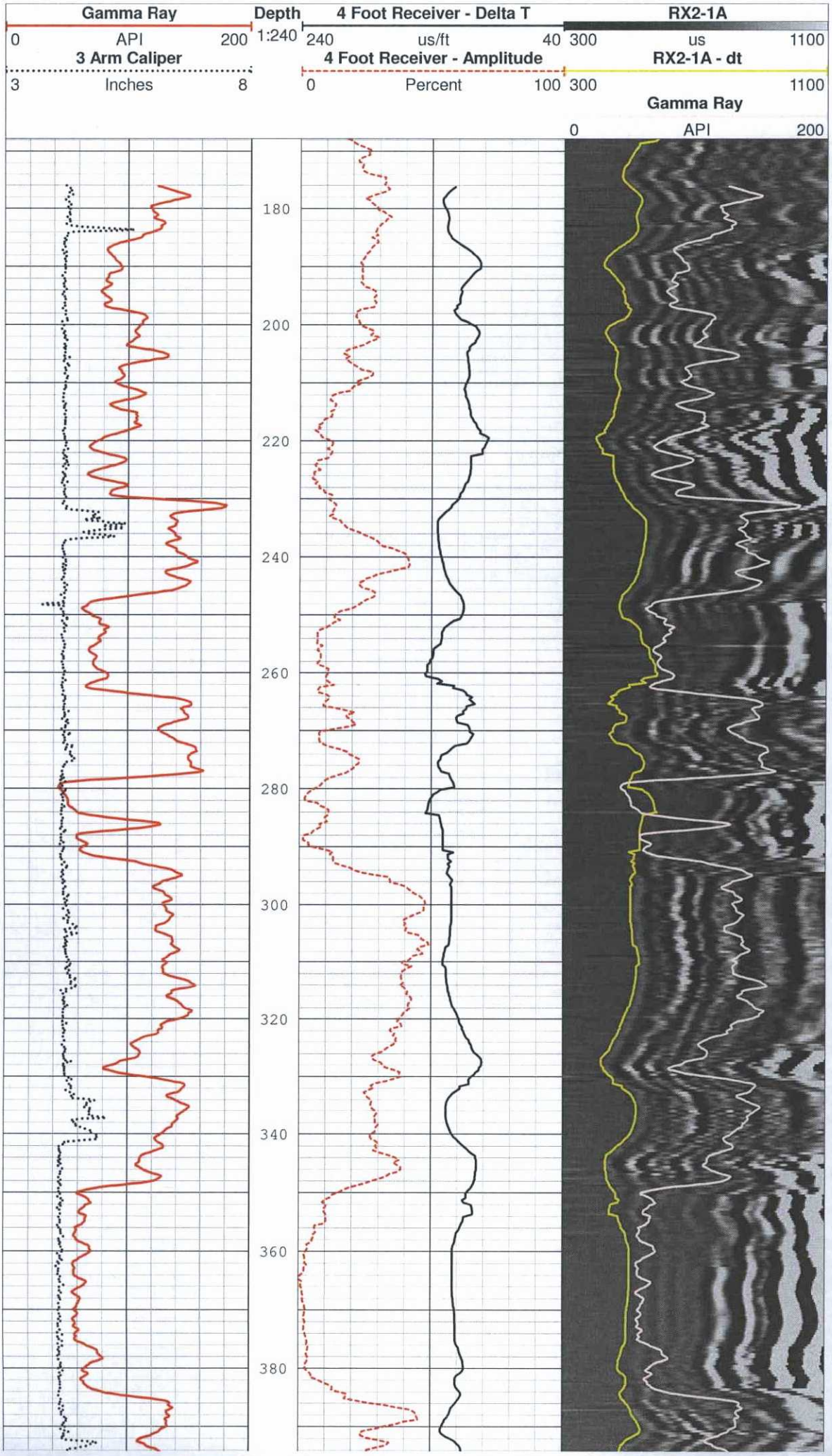

500
520
540
560
580
600
620
640
660
680
3 Arm Caliper
2
Inches
7
Depth
1:240
3 Arm Caliper#1
7
Inches
2
3 Arm Caliper#2
2
Inches
7

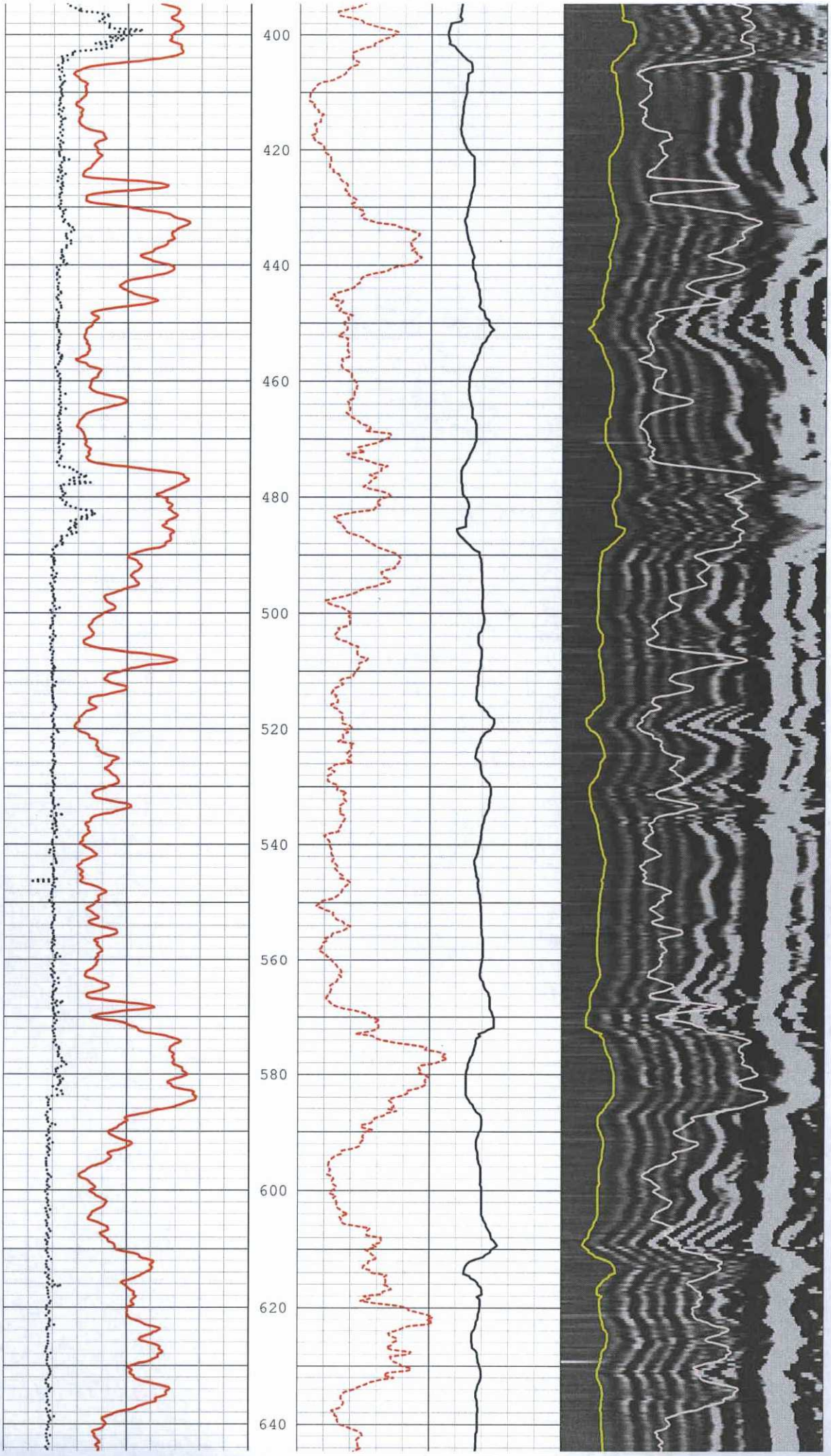

3 Arm Caliper
3
Inches
8
Gamma Ray
0
API
200
SP
692
mV
892
Depth
1:240
Fluid Resistivity (Corr)
0
Ohm-m
4.4
TempF
61
Deg F
69
SPR
0
ohm
135
64" Normal Resistivity (CORR)
0
Ohm-m
200
16" Normal Resistivity (CORR)
0
Ohm-m
200
0
20
40
60
80
100
120
140
160
180
200

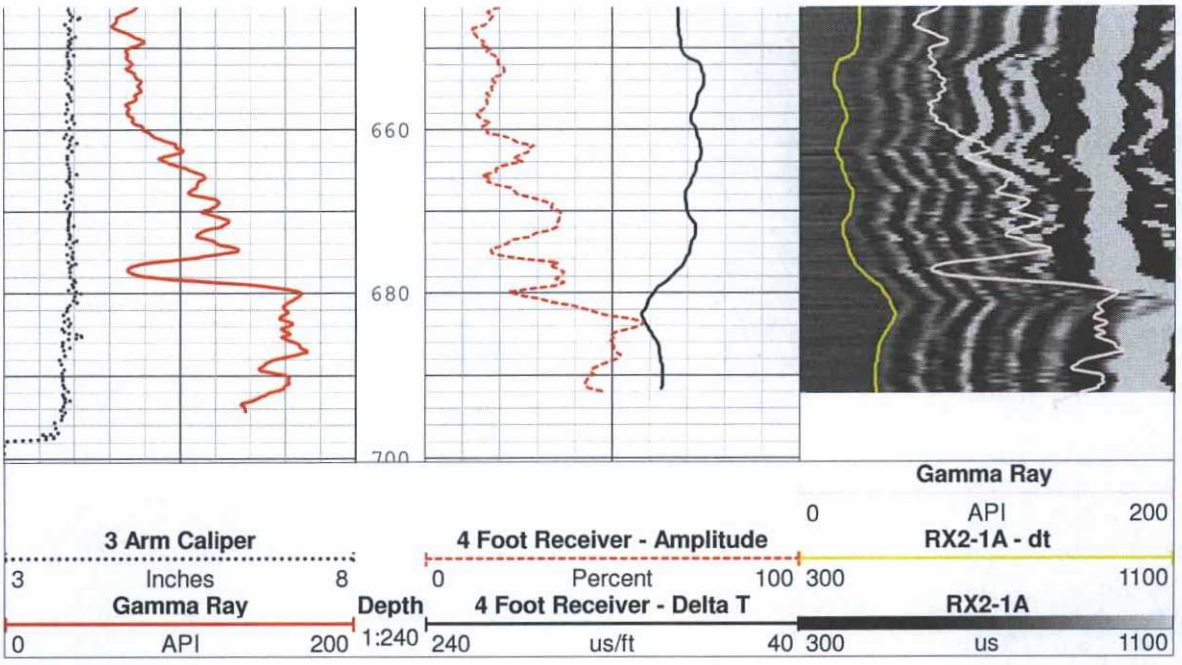

220
240
260
280
300
320
340
360
380
400
420
440
460

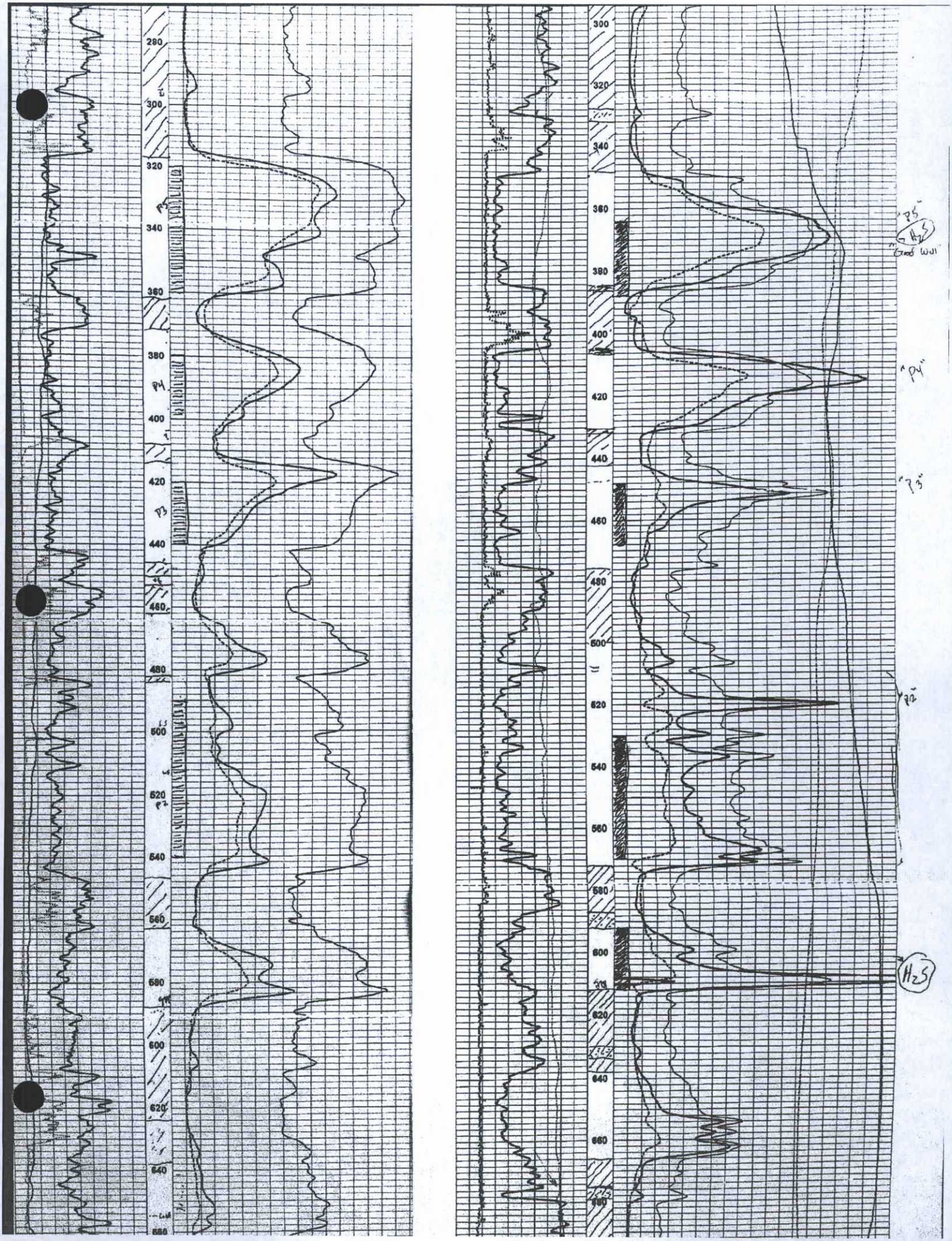

480
500
520
540
560
580
600
620
640
660
680
16" Normal Resistivity (CORR)
0
Ohm-m
200
64" Normal Resistivity (CORR)


SP
692
mV
892
Gamma Ray
0
API
200
3 Arm Caliper
3
Inches
8
Depth
1:240
0
Ohm-m
200
SPR
0
ohm
135
TempF
61
Deg F
69
Fluid Resistivity (Corr)
0
Ohm-m
4.4


Gamma Ray
0
API
200
3 Arm Caliper
3
Inches
8
Depth
1:240
4 Foot Receiver - Delta T
240
us/ft
40
4 Foot Receiver - Amplitude
0
Percent
100
RX2-1A
300
us
1100
RX2-1A - dt
300
1100
Gamma Ray
0
API
200
180
200
220
240
260
280
300
320
340
360
380


400
420
440
460
480
500
520
540
560
580
600
620
640


660
680
700
Gamma Ray
0
API
200
3 Arm Caliper
RX2-1A - dt
3
Inches
8
0
Percent
100
300
1100
Gamma Ray
Depth
4 Foot Receiver - Delta T
RX2-1A
0
API
200
1:240
240
us/ft
40
300
us
1100


280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
580
600
620
640
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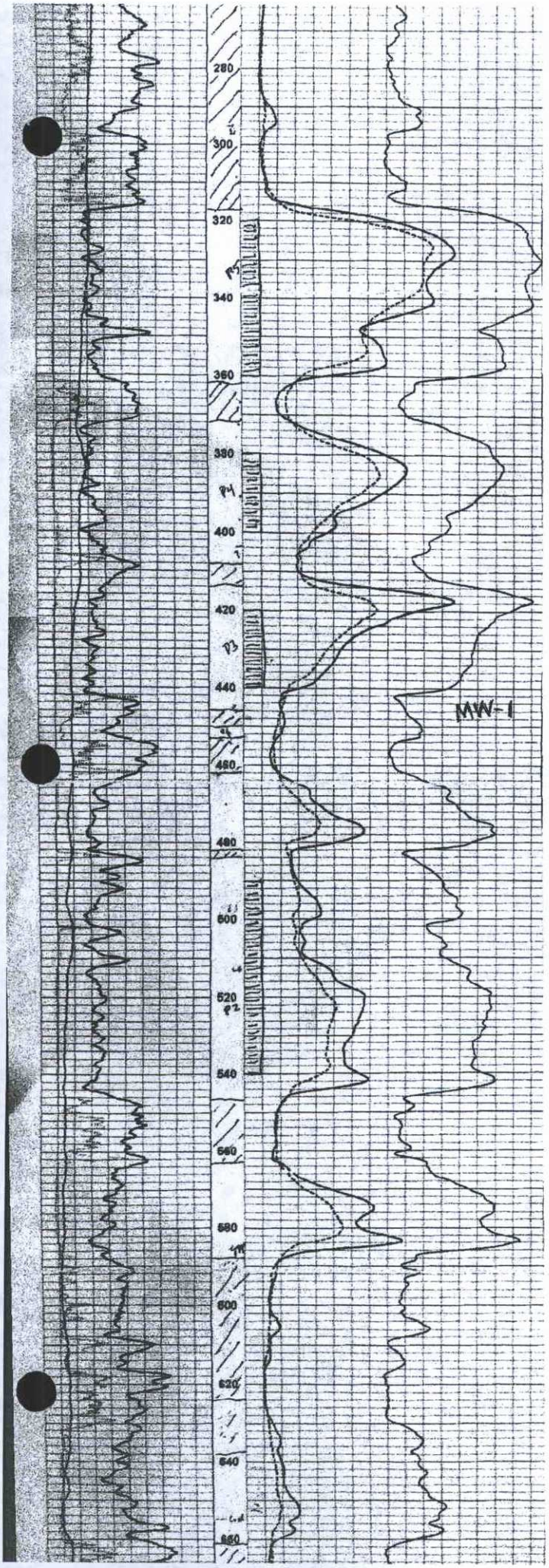
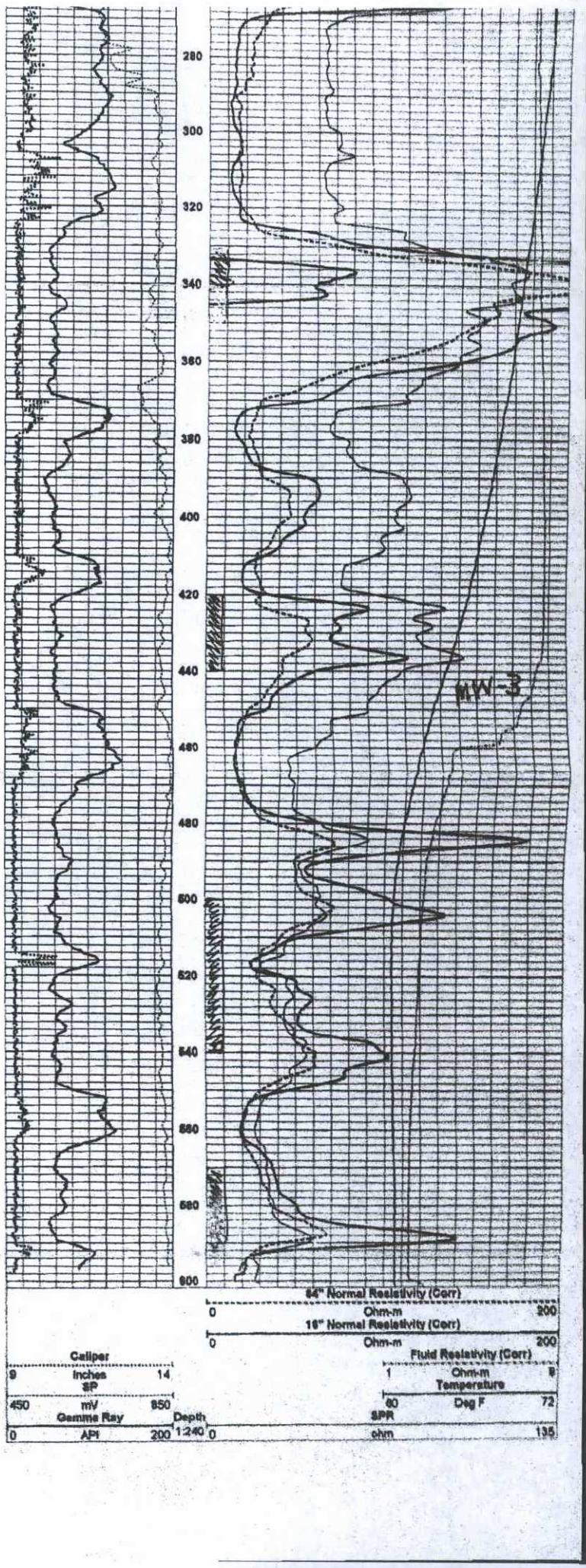
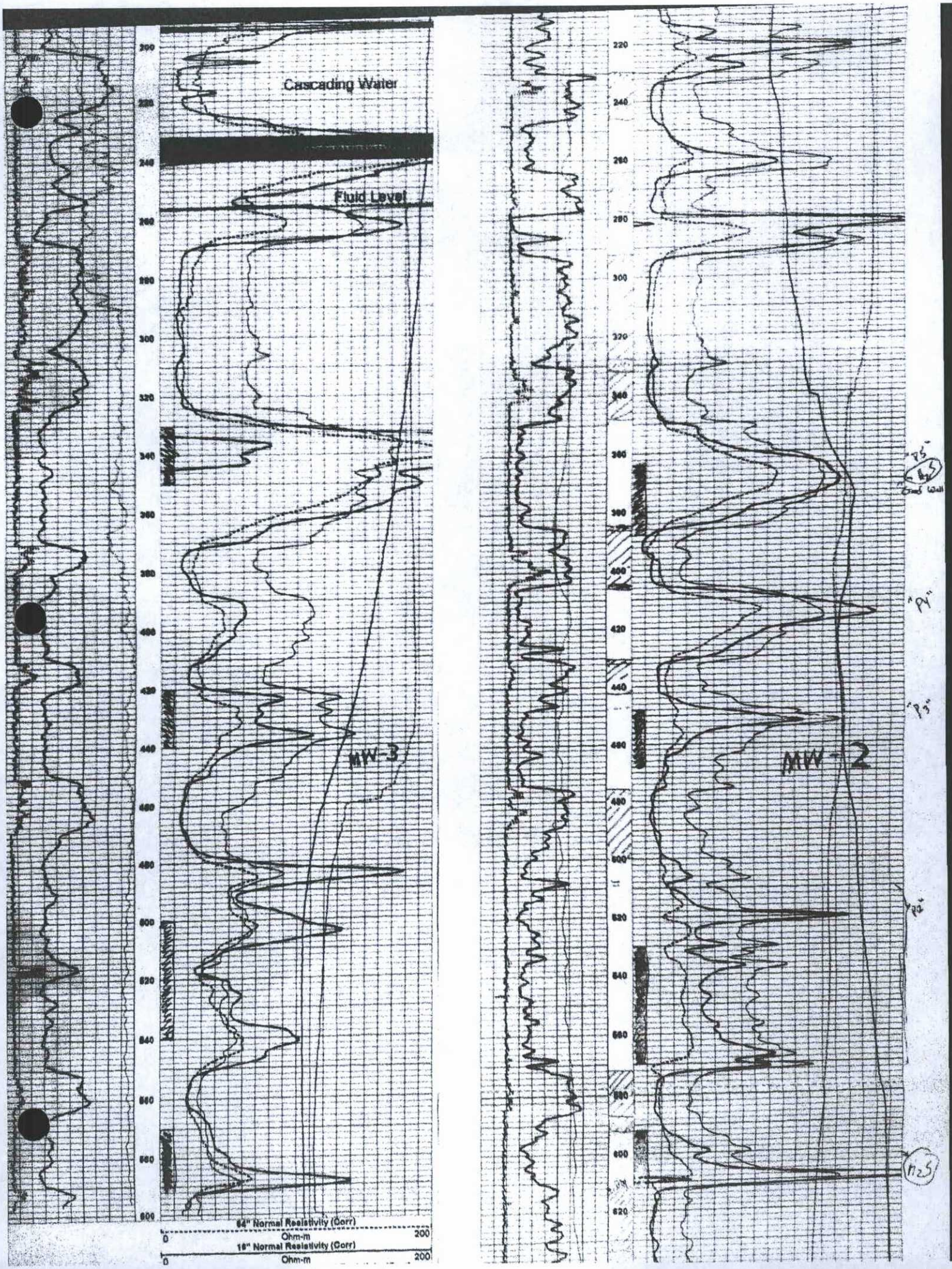
680
300
320
340
360
380
400
420
440
460
480
500
520
540
560
580
600
620
640
660
680
"P5"
H2S
Good Well
"P4"
"P3"
"P2"
H2S


280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
580
600
620
640
660
MW-1


280
300
320
340
360
380
400
420
440
460
480
500
520
540
560
580
600
MW-3
64" Normal Resistivity (Corr)
0
Ohm-m
200
16" Normal Resistivity (Corr)
0
Ohm-m
200
Caliper
9
Inches
14
SP
450
mV
850
Gamma Ray
0
API
200
Depth
1:240
Fluid Resistivity (Corr)
1
Ohm-m
9
Temperature
60
Deg F
72
SPR
0
ohm
135


Cascading Water
Fluid Level
MW-3
MW-2
64" Normal Resistivity (Corr)
0
Ohm-m
200
16" Normal Resistivity (Corr)
0
Ohm-m
200

JET WEST
GEOPHYSICAL SERVICES, LLC.

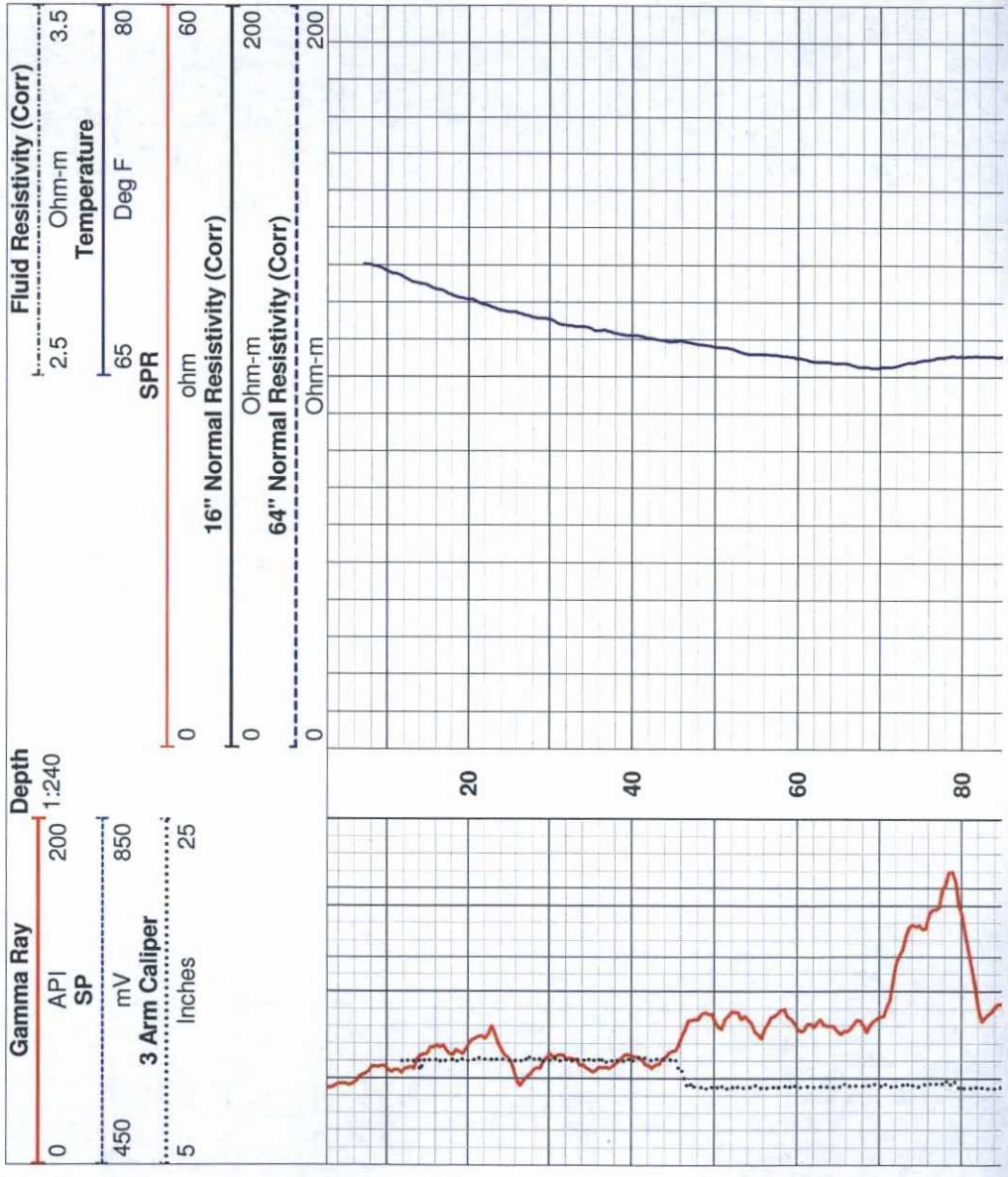
COMPANY	Conestoga-Rovers & Associates
WELL ID	MW-4
FIELD	San Juan 32-8
COUNTY	San Juan STATE New Mexico
TYPE OF LOG:	**Gamma Ray / Electrics Temperature / 3-Arm Caliper**
OTHER SERVICES	Full Wave Form Sonic Deviation
NAD 27 Northing: Easting:	
LOCATION SEC TWP RGE	API No.

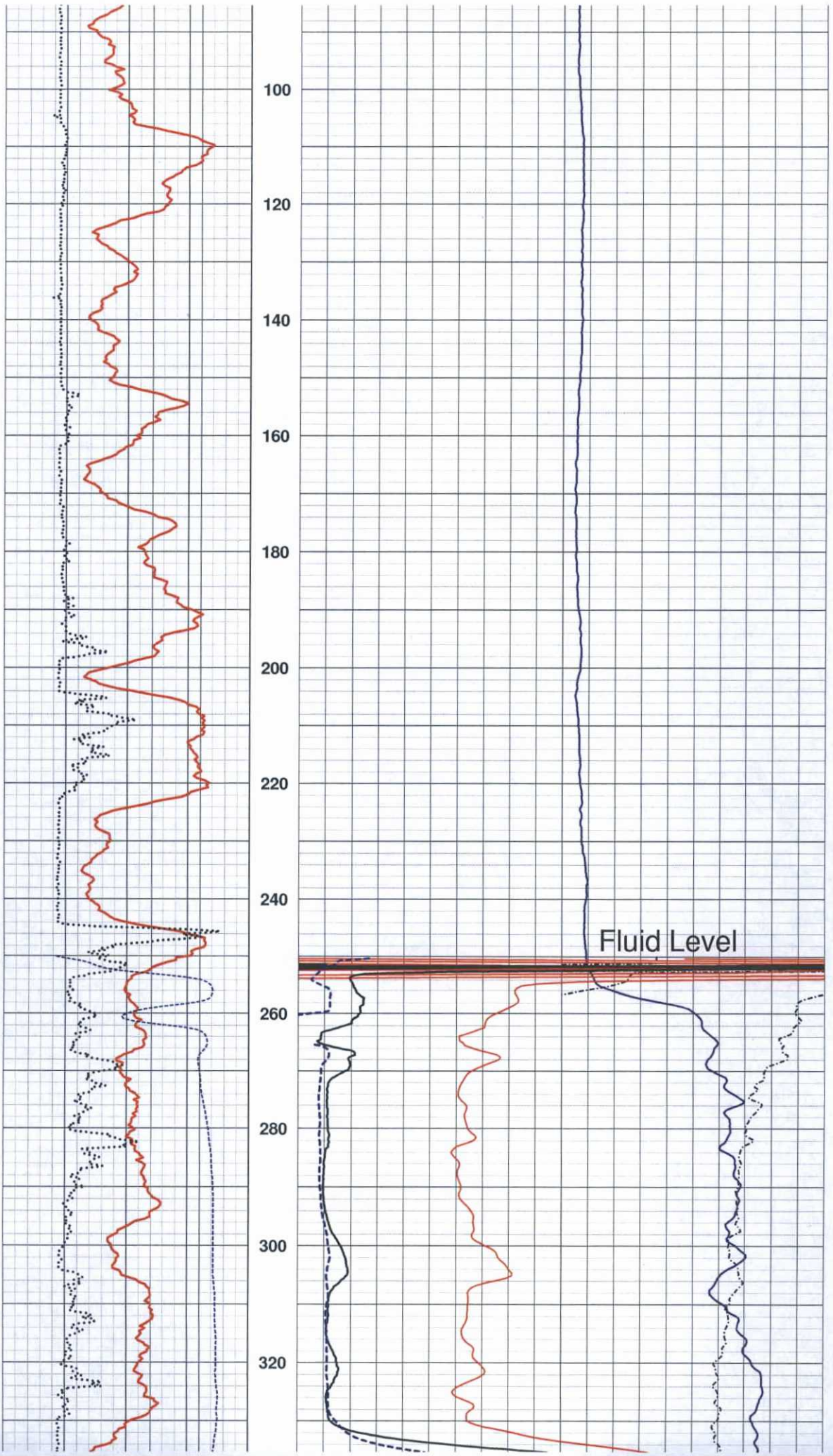
PERMANENT DATUM	Ground Level	ELEVATION	K.B.
LOG MEAS. FROM	Ground Level	ABOVE PERM. DATUM	T.O.C
DRILLING MEAS. FROM	Ground Level		G.L.

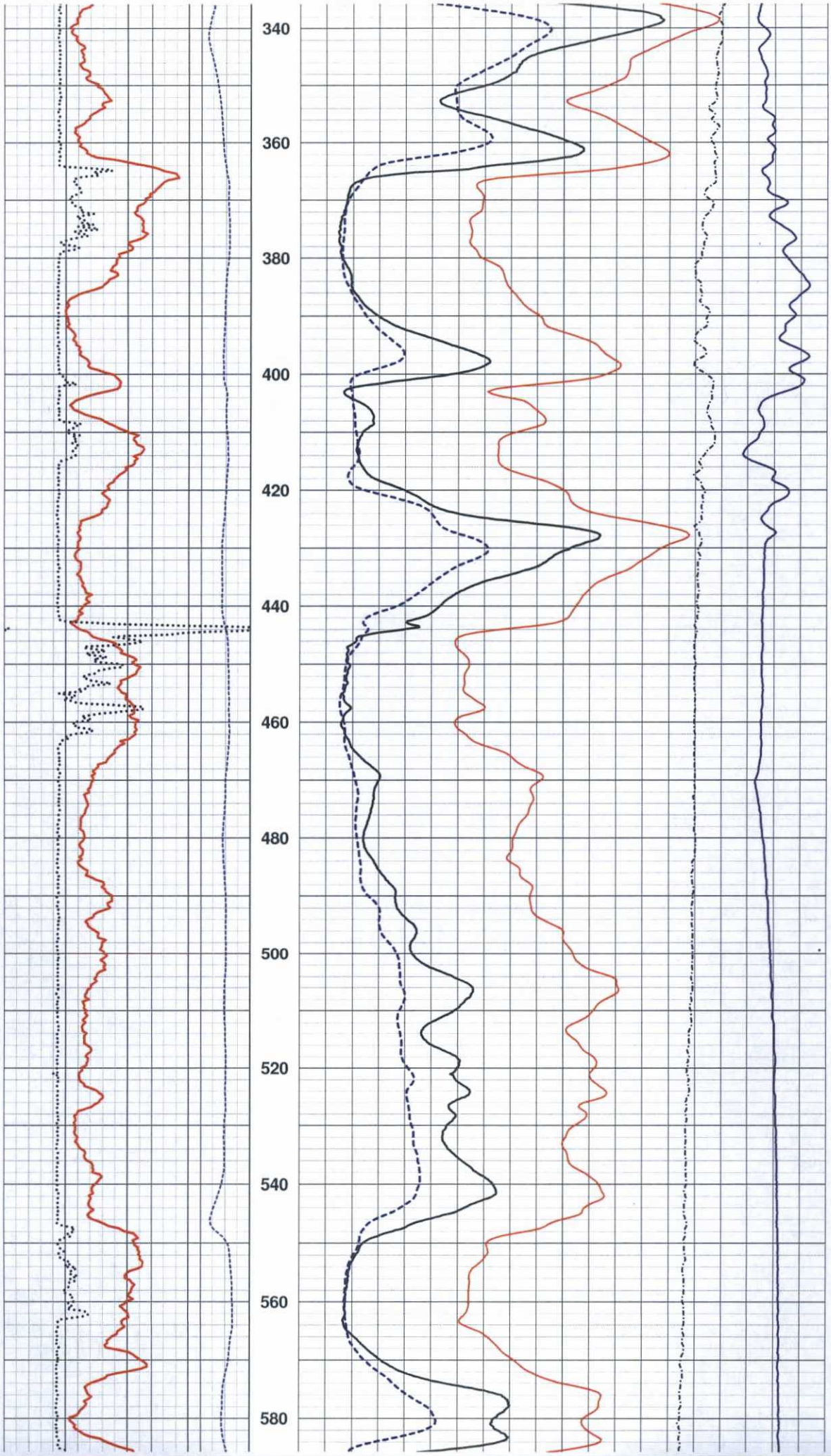
DATE	09-06-2013	TYPE FLUID IN HOLE	Fresh water
RUN No.	one	SALINITY	
TYPE LOG	Polyprobe	DENSITY	
DEPTH-DRILLER	620 ft.	LEVEL	276 ft.
DEPTH-LOGGER	621 ft.	MAX. REG. TEMP	
BTM LOGGED INTERVAL	621 ft.	DIGITIZE INTERVAL	0.2 ft.
TOP LOGGED INTERVAL	Surface		
OPERATING RIG TIME			
RECORDED BY	T. Staatz		
WITNESSED BY	CRA		

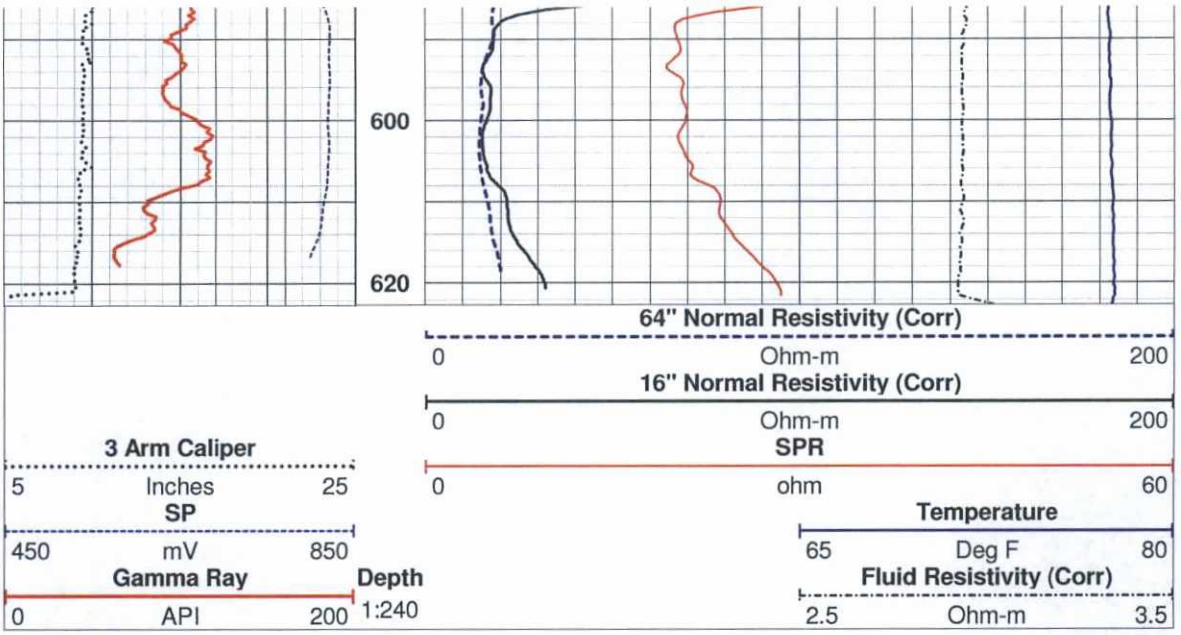
RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1				12.0 in.	Steel	1	45 ft.
2	*8.875 in.	45 ft.	620 ft.				
3							

REMARKS: * 9 inch hammer bit worn down to 8.875 inches.




100
120
140
160
180
200
220
240
260
280
300
320
Fluid Level


340
360
380
400
420
440
460
480
500
520
540
560
580


600
620
64" Normal Resistivity (Corr)
0
Ohm-m
200
16" Normal Resistivity (Corr)
0
Ohm-m
200
3 Arm Caliper
5
Inches
25
SPR
0
ohm
60
SP
450
mV
850
Temperature
65
Deg F
80
Gamma Ray
Depth
0
API
200
1:240
Fluid Resistivity (Corr)
2.5
Ohm-m
3.5

Attachment H

Video Profile of Wells
(Included on CD)

Attachment I

Request for Acceptance of Solid Waste (C-138 Form) and Analytical Data

Pace Analytical Services, Inc.
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Lenexa, KS 66219
(913)599-5665

February 04, 2013

Hector Narez
COP Conestoga-Rovers & Associa
5551 Corporate Blvd. Suite 200
Baton Rouge, LA 70808

RE: Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60137690

Dear Hector Narez:
Enclosed are the analytical results for sample(s) received by the laboratory on January 29, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Joshua Kirchner, COP Conestoga-Rovers & Associa

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March 21, 2014

Chris Fetters
COP CRA LA
5551 Corporate Blvd. Suite200
Baton Rouge, LA 70808

RE: Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Dear Chris Fetters:
Enclosed are the analytical results for sample(s) received by the laboratory on September 24, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

REVISED

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan
alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Deborah Brennan, COP CRA LA
Joseph Kraska, COP CRA LA
Kelly Williams, COP CRA LA

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CERTIFICATIONS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60153834001	074922-092213KW-20-0107	Solid	09/22/13 14:00	09/24/13 08:40
60153834002	074922-092213KW-20-036	Solid	09/22/13 14:10	09/24/13 08:40
60153834003	074922-092213KW-DW-13	Solid	09/22/13 14:20	09/24/13 08:40
60153834004	TRIP BLANK	Solid	09/22/13 08:00	09/24/13 08:40

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SAMPLE ANALYTE COUNT

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60153834001	074922-092213KW-20-0107	EPA 8015B	JDH	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		EPA 6010	TJT	7	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 8260	RAB	13	PASI-K
		ASTM D2974	DWC	1	PASI-K
		SW-846 7.3.4.2	AJM	1	PASI-K
		EPA 9045	DJR	1	PASI-K
		ASTM D92	AJM	1	PASI-K
		SW-846 7.3.3.2	AJM	1	PASI-K
		EPA 9056	OL	1	PASI-K
60153834002	074922-092213KW-20-036	EPA 8015B	JDH	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		EPA 6010	TJT	7	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 8260	RAB	13	PASI-K
		ASTM D2974	DWC	1	PASI-K
		SW-846 7.3.4.2	AJM	1	PASI-K
		EPA 9045	DJR	1	PASI-K
		ASTM D92	AJM	1	PASI-K
		SW-846 7.3.3.2	AJM	1	PASI-K
		EPA 9056	OL	1	PASI-K
60153834003	074922-092213KW-DW-13	EPA 8015B	JDH	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		EPA 6010	TJT	7	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 8260	RAB	13	PASI-K
		ASTM D2974	DWC	1	PASI-K
		SW-846 7.3.4.2	AJM	1	PASI-K
		EPA 9045	DJR	1	PASI-K
		ASTM D92	AJM	1	PASI-K
		SW-846 7.3.3.2	AJM	1	PASI-K
		EPA 9056	OL	1	PASI-K
60153834004	TRIP BLANK	EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K

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SUMMARY OF DETECTION

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
60153834001	**074922-092213KW-20-0107**					
EPA 8015B	TPH-DRO (C10-C28)	22.0	mg/kg	11.9	10/03/13 19:54	
ASTM D2974	Percent Moisture	17.4	%	0.50	10/03/13 00:00	
EPA 9045	pH at 25 Degrees C	9.2	Std. Units	0.10	09/25/13 13:35	H3
ASTM D92	Flashpoint	>210	deg F		09/27/13 13:00	
EPA 9056	Chloride	186	mg/kg	121	10/04/13 19:19	
60153834002	**074922-092213KW-20-036**					
ASTM D2974	Percent Moisture	5.9	%	0.50	10/03/13 00:00	
EPA 9045	pH at 25 Degrees C	8.9	Std. Units	0.10	09/25/13 13:35	H3
ASTM D92	Flashpoint	>210	deg F		09/27/13 13:00	
60153834003	**074922-092213KW-DW-13**					
EPA 8015B	TPH-DRO (C10-C28)	40.9	mg/kg	12.1	10/03/13 20:08	
ASTM D2974	Percent Moisture	18.5	%	0.50	10/03/13 00:00	
EPA 9045	pH at 25 Degrees C	9.1	Std. Units	0.10	09/25/13 13:35	H3
ASTM D92	Flashpoint	>210	deg F		09/27/13 13:00	
EPA 9056	Chloride	123	mg/kg	123	10/04/13 20:05	

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Method: EPA 8015B
Description: 8015B Diesel Range Organics
Client: COP CRA LA
Date: March 21, 2014

General Information:
3 samples were analyzed for EPA 8015B. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 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.

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, where applicable, 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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Method: EPA 8015B
Description: Gasoline Range Organics
Client: COP CRA LA
Date: March 21, 2014

General Information:
4 samples were analyzed for EPA 8015B. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A/5030B 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.

QC Batch: GCV/4502

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BLANK (Lab ID: 1263879)
  - 4-Bromofluorobenzene (S)
- LCS (Lab ID: 1263880)
  - 4-Bromofluorobenzene (S)

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, where applicable, 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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Method: **EPA 6010**
Description: 6010 MET ICP, TCLP
Client: COP CRA LA
Date: March 21, 2014

General Information:
3 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Method: **EPA 7470**
Description: 7470 Mercury, TCLP
Client: COP CRA LA
Date: March 21, 2014

General Information:
3 samples were analyzed for EPA 7470. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Method: **EPA 8260**
Description: 8260 MSV TCLP
Client: COP CRA LA
Date: March 21, 2014

General Information:
3 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, where applicable, 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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Method: **SW-846 7.3.4.2**
Description: Reactive Sulfide
Client: COP CRA LA
Date: March 21, 2014

General Information:
3 samples were analyzed for SW-846 7.3.4.2. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Method: **EPA 9045**
Description: 9045 pH Soil
Client: COP CRA LA
Date: March 21, 2014

General Information:
3 samples were analyzed for EPA 9045. 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.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- 074922-092213KW-20-0107 (Lab ID: 60153834001)
- 074922-092213KW-20-036 (Lab ID: 60153834002)
- 074922-092213KW-DW-13 (Lab ID: 60153834003)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Method: **ASTM D92**
Description: Flashpoint, Open Cup
Client: COP CRA LA
Date: March 21, 2014

General Information:
3 samples were analyzed for ASTM D92. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Method: **SW-846 7.3.3.2**
Description: 733C S Reactive Cyanide
Client: COP CRA LA
Date: March 21, 2014

General Information:
3 samples were analyzed for SW-846 7.3.3.2. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Method: **EPA 9056**
Description: 9056 IC Anions
Client: COP CRA LA
Date: March 21, 2014

General Information:
3 samples were analyzed for EPA 9056. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 9056 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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.

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Sample: 074922-092213KW-20-0107 **Lab ID: 60153834001** Collected: 09/22/13 14:00 Received: 09/24/13 08:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH-DRO (C10-C28)	**22.0**	mg/kg	11.9	5.9	1	10/02/13 00:00	10/03/13 19:54		
TPH-ORO (C28-C35)	ND	mg/kg	11.9	5.9	1	10/02/13 00:00	10/03/13 19:54		
Surrogates									
n-Tetracosane (S)	81	%	35-147		1	10/02/13 00:00	10/03/13 19:54	646-31-1	
p-Terphenyl (S)	77	%	37-138		1	10/02/13 00:00	10/03/13 19:54	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B								
TPH-GRO	ND	mg/kg	12.1	6.1	1	09/30/13 00:00	10/02/13 18:15		
Surrogates									
4-Bromofluorobenzene (S)	90	%	67-139		1	09/30/13 00:00	10/02/13 18:15	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 10/05/13 00:00								
Arsenic	ND	mg/L	0.50		1	10/05/13 15:15	10/07/13 10:12	7440-38-2	
Barium	ND	mg/L	2.5		1	10/05/13 15:15	10/07/13 10:12	7440-39-3	
Cadmium	ND	mg/L	0.050		1	10/05/13 15:15	10/07/13 10:12	7440-43-9	
Chromium	ND	mg/L	0.10		1	10/05/13 15:15	10/07/13 10:12	7440-47-3	
Lead	ND	mg/L	0.50		1	10/05/13 15:15	10/07/13 10:12	7439-92-1	
Selenium	ND	mg/L	0.50		1	10/05/13 15:15	10/07/13 10:12	7782-49-2	
Silver	ND	mg/L	0.10		1	10/05/13 15:15	10/07/13 10:12	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 10/05/13 00:00								
Mercury	ND	mg/L	0.0020	0.0010	1	10/07/13 09:45	10/07/13 12:39	7439-97-6	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/05/13 00:00								
Benzene	ND	mg/L	0.050	0.025	1		10/07/13 06:30	71-43-2	
2-Butanone (MEK)	ND	mg/L	1.0	0.50	1		10/07/13 06:30	78-93-3	
Carbon tetrachloride	ND	mg/L	0.050	0.025	1		10/07/13 06:30	56-23-5	
Chlorobenzene	ND	mg/L	0.050	0.025	1		10/07/13 06:30	108-90-7	
Chloroform	ND	mg/L	0.20	0.10	1		10/07/13 06:30	67-66-3	
1,2-Dichloroethane	ND	mg/L	0.050	0.025	1		10/07/13 06:30	107-06-2	
1,1-Dichloroethene	ND	mg/L	0.050	0.025	1		10/07/13 06:30	75-35-4	
Tetrachloroethene	ND	mg/L	0.050	0.025	1		10/07/13 06:30	127-18-4	
Trichloroethene	ND	mg/L	0.050	0.025	1		10/07/13 06:30	79-01-6	
Vinyl chloride	ND	mg/L	100	0.050	1		10/07/13 06:30	75-01-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	80-120		1		10/07/13 06:30	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/07/13 06:30	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-120		1		10/07/13 06:30	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974								
Percent Moisture	**17.4**	%	0.50	0.50	1		10/03/13 00:00		

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Sample: 074922-092213KW-20-0107 **Lab ID: 60153834001** Collected: 09/22/13 14:00 Received: 09/24/13 08:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Reactive Sulfide	Analytical Method: SW-846 7.3.4.2								
Sulfide, Reactive	ND	mg/kg	100		1		09/25/13 18:45		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**9.2**	Std. Units	0.10	0.10	1		09/25/13 13:35		H3
Flashpoint, Open Cup	Analytical Method: ASTM D92								
Flashpoint	**>210**	deg F			1		09/27/13 13:00		
733C S Reactive Cyanide	Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025		1		09/25/13 19:26		
9056 IC Anions	Analytical Method: EPA 9056 Preparation Method: EPA 9056								
Chloride	**186**	mg/kg	121	60.5	10	10/03/13 12:00	10/04/13 19:19	16887-00-6	

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Sample: 074922-092213KW-20-036 **Lab ID: 60153834002** Collected: 09/22/13 14:10 Received: 09/24/13 08:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH-DRO (C10-C28)	ND	mg/kg	10.5	5.3	1	10/02/13 00:00	10/03/13 20:01		
TPH-ORO (C28-C35)	ND	mg/kg	10.5	5.3	1	10/02/13 00:00	10/03/13 20:01		
Surrogates									
n-Tetracosane (S)	84	%	35-147		1	10/02/13 00:00	10/03/13 20:01	646-31-1	
p-Terphenyl (S)	81	%	37-138		1	10/02/13 00:00	10/03/13 20:01	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B								
TPH-GRO	ND	mg/kg	10.3	5.2	1	09/30/13 00:00	10/02/13 18:37		
Surrogates									
4-Bromofluorobenzene (S)	82	%	67-139		1	09/30/13 00:00	10/02/13 18:37	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 10/05/13 00:00								
Arsenic	ND	mg/L	0.50		1	10/05/13 15:15	10/07/13 10:15	7440-38-2	
Barium	ND	mg/L	2.5		1	10/05/13 15:15	10/07/13 10:15	7440-39-3	
Cadmium	ND	mg/L	0.050		1	10/05/13 15:15	10/07/13 10:15	7440-43-9	
Chromium	ND	mg/L	0.10		1	10/05/13 15:15	10/07/13 10:15	7440-47-3	
Lead	ND	mg/L	0.50		1	10/05/13 15:15	10/07/13 10:15	7439-92-1	
Selenium	ND	mg/L	0.50		1	10/05/13 15:15	10/07/13 10:15	7782-49-2	
Silver	ND	mg/L	0.10		1	10/05/13 15:15	10/07/13 10:15	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 10/05/13 00:00								
Mercury	ND	mg/L	0.0020	0.0010	1	10/07/13 09:45	10/07/13 12:46	7439-97-6	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/05/13 00:00								
Benzene	ND	mg/L	0.050	0.025	1		10/07/13 07:01	71-43-2	
2-Butanone (MEK)	ND	mg/L	1.0	0.50	1		10/07/13 07:01	78-93-3	
Carbon tetrachloride	ND	mg/L	0.050	0.025	1		10/07/13 07:01	56-23-5	
Chlorobenzene	ND	mg/L	0.050	0.025	1		10/07/13 07:01	108-90-7	
Chloroform	ND	mg/L	0.20	0.10	1		10/07/13 07:01	67-66-3	
1,2-Dichloroethane	ND	mg/L	0.050	0.025	1		10/07/13 07:01	107-06-2	
1,1-Dichloroethene	ND	mg/L	0.050	0.025	1		10/07/13 07:01	75-35-4	
Tetrachloroethene	ND	mg/L	0.050	0.025	1		10/07/13 07:01	127-18-4	
Trichloroethene	ND	mg/L	0.050	0.025	1		10/07/13 07:01	79-01-6	
Vinyl chloride	ND	mg/L	0.10	0.050	1		10/07/13 07:01	75-01-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	80-120		1		10/07/13 07:01	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/07/13 07:01	2037-26-5	
4-Bromofluorobenzene (S)	97	%	80-120		1		10/07/13 07:01	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974								
Percent Moisture	**5.9**	%	0.50	0.50	1		10/03/13 00:00		

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Sample: 074922-092213KW-20-036 **Lab ID: 60153834002** Collected: 09/22/13 14:10 Received: 09/24/13 08:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Reactive Sulfide	Analytical Method: SW-846 7.3.4.2								
Sulfide, Reactive	ND	mg/kg	100		1		09/25/13 18:45		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**8.9**	Std. Units	0.10	0.10	1		09/25/13 13:35		H3
Flashpoint, Open Cup	Analytical Method: ASTM D92								
Flashpoint	**>210**	deg F			1		09/27/13 13:00		
733C S Reactive Cyanide	Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025		1		09/25/13 19:27		
9056 IC Anions	Analytical Method: EPA 9056 Preparation Method: EPA 9056								
Chloride	ND	mg/kg	106	53.2	10	10/03/13 12:00	10/04/13 19:50	16887-00-6	

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Sample: 074922-092213KW-DW-13 **Lab ID: 60153834003** Collected: 09/22/13 14:20 Received: 09/24/13 08:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH-DRO (C10-C28)	**40.9**	mg/kg	12.1	6.1	1	10/02/13 00:00	10/03/13 20:08		
TPH-ORO (C28-C35)	ND	mg/kg	12.1	6.1	1	10/02/13 00:00	10/03/13 20:08		
Surrogates									
n-Tetracosane (S)	71	%	35-147		1	10/02/13 00:00	10/03/13 20:08	646-31-1	
p-Terphenyl (S)	67	%	37-138		1	10/02/13 00:00	10/03/13 20:08	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B								
TPH-GRO	ND	mg/kg	11.7	5.9	1	09/30/13 00:00	10/02/13 18:58		
Surrogates									
4-Bromofluorobenzene (S)	90	%	67-139		1	09/30/13 00:00	10/02/13 18:58	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 10/05/13 00:00								
Arsenic	ND	mg/L	0.50		1	10/05/13 15:15	10/07/13 10:17	7440-38-2	
Barium	ND	mg/L	2.5		1	10/05/13 15:15	10/07/13 10:17	7440-39-3	
Cadmium	ND	mg/L	0.050		1	10/05/13 15:15	10/07/13 10:17	7440-43-9	
Chromium	ND	mg/L	0.10		1	10/05/13 15:15	10/07/13 10:17	7440-47-3	
Lead	ND	mg/L	0.50		1	10/05/13 15:15	10/07/13 10:17	7439-92-1	
Selenium	ND	mg/L	0.50		1	10/05/13 15:15	10/07/13 10:17	7782-49-2	
Silver	ND	mg/L	0.10		1	10/05/13 15:15	10/07/13 10:17	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 10/05/13 00:00								
Mercury	ND	mg/L	0.0020	0.0010	1	10/07/13 09:45	10/07/13 12:48	7439-97-6	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/05/13 00:00								
Benzene	ND	mg/L	0.050	0.025	1		10/07/13 07:16	71-43-2	
2-Butanone (MEK)	ND	mg/L	1.0	0.50	1		10/07/13 07:16	78-93-3	
Carbon tetrachloride	ND	mg/L	0.050	0.025	1		10/07/13 07:16	56-23-5	
Chlorobenzene	ND	mg/L	0.050	0.025	1		10/07/13 07:16	108-90-7	
Chloroform	ND	mg/L	0.20	0.10	1		10/07/13 07:16	67-66-3	
1,2-Dichloroethane	ND	mg/L	0.050	0.025	1		10/07/13 07:16	107-06-2	
1,1-Dichloroethene	ND	mg/L	0.050	0.025	1		10/07/13 07:16	75-35-4	
Tetrachloroethene	ND	mg/L	0.050	0.025	1		10/07/13 07:16	127-18-4	
Trichloroethene	ND	mg/L	0.050	0.025	1		10/07/13 07:16	79-01-6	
Vinyl chloride	ND	mg/L	0.10	0.050	1		10/07/13 07:16	75-01-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	80-120		1		10/07/13 07:16	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/07/13 07:16	2037-26-5	
4-Bromofluorobenzene (S)	97	%	80-120		1		10/07/13 07:16	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974								
Percent Moisture	**18.5**	%	0.50	0.50	1		10/03/13 00:00		

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Sample: 074922-092213KW-DW-13 **Lab ID: 60153834003** Collected: 09/22/13 14:20 Received: 09/24/13 08:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Reactive Sulfide	Analytical Method: SW-846 7.3.4.2								
Sulfide, Reactive	ND	mg/kg	100		1		09/25/13 18:45		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**9.1**	Std. Units	0.10	0.10	1		09/25/13 13:35		H3
Flashpoint, Open Cup	Analytical Method: ASTM D92								
Flashpoint	**>210**	deg F			1		09/27/13 13:00		
733C S Reactive Cyanide	Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025		1		09/25/13 19:27		
9056 IC Anions	Analytical Method: EPA 9056 Preparation Method: EPA 9056								
Chloride	**123**	mg/kg	123	61.3	10	10/03/13 12:00	10/04/13 20:05	16887-00-6	

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Sample: TRIP BLANK **Lab ID: 60153834004** Collected: 09/22/13 08:00 Received: 09/24/13 08:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B								
TPH-GRO	ND	mg/kg	10.0	5.0	1	09/30/13 00:00	10/03/13 12:35		
Surrogates									
4-Bromofluorobenzene (S)	109	%	67-139		1	09/30/13 00:00	10/03/13 12:35	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974								
Percent Moisture	ND	%	0.50	0.50	1		10/03/13 00:00		

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

QC Batch: GCV/4502 Analysis Method: EPA 8015B
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60153834001, 60153834002, 60153834003, 60153834004

METHOD BLANK: 1262861 Matrix: Solid
Associated Lab Samples: 60153834001, 60153834002, 60153834003, 60153834004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4-Bromofluorobenzene (S)	%	86	67-139	10/01/13 17:21	

METHOD BLANK: 1264407 Matrix: Solid
Associated Lab Samples: 60153834001, 60153834002, 60153834003, 60153834004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/kg	ND	10.0	10/02/13 12:23	
4-Bromofluorobenzene (S)	%	98	67-139	10/02/13 12:23	

METHOD BLANK: 1265111 Matrix: Solid
Associated Lab Samples: 60153834001, 60153834002, 60153834003, 60153834004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/kg	ND	10.0	10/03/13 12:05	
4-Bromofluorobenzene (S)	%	104	67-139	10/03/13 12:05	

METHOD BLANK: 1263879 Matrix: Solid
Associated Lab Samples: 60153834001, 60153834002, 60153834003, 60153834004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4-Bromofluorobenzene (S)	%	87	67-139	09/30/13 19:21	CL

LABORATORY CONTROL SAMPLE: 1263880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4-Bromofluorobenzene (S)	%			84	67-139	CL

LABORATORY CONTROL SAMPLE: 1262862

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4-Bromofluorobenzene (S)	%			88	67-139	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

LABORATORY CONTROL SAMPLE: 1264408

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/kg	50	46.3	93	65-143	
4-Bromofluorobenzene (S)	%			97	67-139	

LABORATORY CONTROL SAMPLE: 1265112

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/kg	50	57.1	114	65-143	
4-Bromofluorobenzene (S)	%			114	67-139	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1262863 1262864

Parameter	Units	60153805001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Bromofluorobenzene (S)	%						85	86	67-139			

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

QC Batch: MERP/7772 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 60153834001, 60153834002, 60153834003

METHOD BLANK: 1267060 Matrix: Water
Associated Lab Samples: 60153834001, 60153834002, 60153834003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	10/07/13 12:35	

LABORATORY CONTROL SAMPLE: 1267061

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.005	0.0053	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1267062 1267063

Parameter	Units	60153834001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.015	.015	0.014	0.016	92	107	75-125	15	20	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

QC Batch: MPRP/24596 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
Associated Lab Samples: 60153834001, 60153834002, 60153834003

METHOD BLANK: 1266811 Matrix: Water
Associated Lab Samples: 60153834001, 60153834002, 60153834003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.50	10/07/13 10:08	
Barium	mg/L	ND	2.5	10/07/13 10:08	
Cadmium	mg/L	ND	0.050	10/07/13 10:08	
Chromium	mg/L	ND	0.10	10/07/13 10:08	
Lead	mg/L	ND	0.50	10/07/13 10:08	
Selenium	mg/L	ND	0.50	10/07/13 10:08	
Silver	mg/L	ND	0.10	10/07/13 10:08	

LABORATORY CONTROL SAMPLE: 1266812

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	1	0.91	91	80-120	
Barium	mg/L	1	0.89	89	80-120	
Cadmium	mg/L	1	0.85	85	80-120	
Chromium	mg/L	1	1.0	104	80-120	
Lead	mg/L	1	0.95	95	80-120	
Selenium	mg/L	1	0.87	87	80-120	
Silver	mg/L	.5	0.47	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1266813 1266814

Parameter	Units	60154058001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	9.2	9.4	92	94	75-125	2	20	
Barium	mg/L	ND	10	10	9.2	9.3	92	93	75-125	1	20	
Cadmium	mg/L	ND	10	10	8.8	8.8	88	88	75-125	0	20	
Chromium	mg/L	ND	10	10	10.2	10.3	102	103	75-125	1	20	
Lead	mg/L	ND	10	10	9.4	9.4	94	94	75-125	0	20	
Selenium	mg/L	ND	10	10	8.9	9.0	89	90	75-125	1	20	
Silver	mg/L	ND	5	5	4.7	4.9	95	97	75-125	2	20	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

QC Batch: MSV/56812 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 60153834001, 60153834002, 60153834003

METHOD BLANK: 1266879 Matrix: Water
Associated Lab Samples: 60153834001, 60153834002, 60153834003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	mg/L	ND	0.050	10/07/13 06:15	
1,2-Dichloroethane	mg/L	ND	0.050	10/07/13 06:15	
2-Butanone (MEK)	mg/L	ND	1.0	10/07/13 06:15	
Benzene	mg/L	ND	0.050	10/07/13 06:15	
Carbon tetrachloride	mg/L	ND	0.050	10/07/13 06:15	
Chlorobenzene	mg/L	ND	0.050	10/07/13 06:15	
Chloroform	mg/L	ND	0.20	10/07/13 06:15	
Tetrachloroethene	mg/L	ND	0.050	10/07/13 06:15	
Trichloroethene	mg/L	ND	0.050	10/07/13 06:15	
Vinyl chloride	mg/L	ND	100	10/07/13 06:15	
1,2-Dichloroethane-d4 (S)	%	94	80-120	10/07/13 06:15	
4-Bromofluorobenzene (S)	%	98	80-120	10/07/13 06:15	
Toluene-d8 (S)	%	101	80-120	10/07/13 06:15	

LABORATORY CONTROL SAMPLE: 1266880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	mg/L	1	1.0	100	70-127	
1,2-Dichloroethane	mg/L	1	1.0	100	72-122	
2-Butanone (MEK)	mg/L	5	4.1	82	69-124	
Benzene	mg/L	1	0.90	90	73-122	
Carbon tetrachloride	mg/L	1	1.0	102	73-125	
Chlorobenzene	mg/L	1	0.98	98	80-120	
Chloroform	mg/L	1	0.99	99	76-120	
Tetrachloroethene	mg/L	1	0.95	95	79-122	
Trichloroethene	mg/L	1	0.94	94	76-120	
Vinyl chloride	mg/L	1	.94J	94	57-140	
1,2-Dichloroethane-d4 (S)	%			95	80-120	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			101	80-120	

MATRIX SPIKE SAMPLE: 1266881

Parameter	Units	60153834001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	mg/L	ND	1	0.83	83	66-142	
1,2-Dichloroethane	mg/L	ND	1	0.90	90	53-144	
2-Butanone (MEK)	mg/L	ND	5	3.7	73	54-127	
Benzene	mg/L	ND	1	0.83	83	48-150	
Carbon tetrachloride	mg/L	ND	1	0.92	92	68-145	
Chlorobenzene	mg/L	ND	1	0.87	87	68-131	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

MATRIX SPIKE SAMPLE: 1266881

Parameter	Units	60153834001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroform	mg/L	ND	1	0.90	90	69-126	
Tetrachloroethene	mg/L	ND	1	0.85	85	66-139	
Trichloroethene	mg/L	ND	1	0.82	82	67-130	
Vinyl chloride	mg/L	ND	1	.6J	60	47-159	
1,2-Dichloroethane-d4 (S)	%				100	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				102	80-120	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

QC Batch: OEXT/40782 Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 Analysis Description: EPA 8015B
Associated Lab Samples: 60153834001, 60153834002, 60153834003

METHOD BLANK: 1263895 Matrix: Solid
Associated Lab Samples: 60153834001, 60153834002, 60153834003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/kg	ND	9.8	10/03/13 19:28	
TPH-ORO (C28-C35)	mg/kg	ND	9.8	10/03/13 19:28	
n-Tetracosane (S)	%	84	35-147	10/03/13 19:28	
p-Terphenyl (S)	%	82	37-138	10/03/13 19:28	

LABORATORY CONTROL SAMPLE: 1263896

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	mg/kg	81.8	92.7	113	66-120	
TPH-ORO (C28-C35)	mg/kg		ND			
n-Tetracosane (S)	%			105	35-147	
p-Terphenyl (S)	%			102	37-138	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1263897 1263898

Parameter	Units	60153834001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-DRO (C10-C28)	mg/kg	22.0	101	99.8	111	117	88	95	22-152	5	43	
TPH-ORO (C28-C35)	mg/kg	ND			ND	ND						
n-Tetracosane (S)	%						76	83	35-147			
p-Terphenyl (S)	%						73	79	37-138			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

QC Batch: PMST/9011 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60153834001, 60153834002, 60153834003, 60153834004

METHOD BLANK: 1264767 Matrix: Solid
Associated Lab Samples: 60153834001, 60153834002, 60153834003, 60153834004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	10/03/13 00:00	

SAMPLE DUPLICATE: 1264768

Parameter	Units	60153834001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.4	17.4	0	20	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

QC Batch: WET/43576 Analysis Method: SW-846 7.3.4.2
QC Batch Method: SW-846 7.3.4.2 Analysis Description: Reactive Sulfide
Associated Lab Samples: 60153834001, 60153834002, 60153834003

METHOD BLANK: 1258845 Matrix: Solid
Associated Lab Samples: 60153834001, 60153834002, 60153834003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Reactive	mg/kg	ND	100	09/25/13 18:45	

LABORATORY CONTROL SAMPLE: 1258846

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/kg	200	182	91	77-110	

MATRIX SPIKE SAMPLE: 1258847

Parameter	Units	60153492001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/kg	ND	500	434	87	67-116	

SAMPLE DUPLICATE: 1258848

Parameter	Units	60153632001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Reactive	mg/kg	ND	20.2J		30	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

QC Batch: WET/43594 Analysis Method: EPA 9045
QC Batch Method: EPA 9045 Analysis Description: 9045 pH
Associated Lab Samples: 60153834001, 60153834002, 60153834003

SAMPLE DUPLICATE: 1259491

Parameter	Units	60153842001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.9	6.9	0	3	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

QC Batch: WETA/26306 Analysis Method: SW-846 7.3.3.2
QC Batch Method: SW-846 7.3.3.2 Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 60153834001, 60153834002, 60153834003

METHOD BLANK: 1258853 Matrix: Solid
Associated Lab Samples: 60153834001, 60153834002, 60153834003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/kg	ND	0.025	09/25/13 19:07	

LABORATORY CONTROL SAMPLE: 1258854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	.5	0.51	102	71-123	

MATRIX SPIKE SAMPLE: 1258855

Parameter	Units	60153553001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	ND	.5	0.50	99	57-132	

SAMPLE DUPLICATE: 1258856

Parameter	Units	60153632003 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Reactive	mg/kg	ND	ND		23	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

QC Batch: WETA/26474 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60153834001, 60153834002, 60153834003

METHOD BLANK: 1266530 Matrix: Solid
Associated Lab Samples: 60153834001, 60153834002, 60153834003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/kg	ND	100	10/04/13 18:49	

LABORATORY CONTROL SAMPLE: 1266531

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/kg	500	481	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1265084 1265085

Parameter	Units	60153012003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/kg	ND	599	599	596	593	85	84	80-120	0	15	

SAMPLE DUPLICATE: 1265086

Parameter	Units	60153834001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/kg	186	201	8	15	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
H3	Sample was received or analysis requested beyond the recognized method holding time.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60153834

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60153834001	074922-092213KW-20-0107	EPA 3546	OEXT/40782	EPA 8015B	GCSV/15555
60153834002	074922-092213KW-20-036	EPA 3546	OEXT/40782	EPA 8015B	GCSV/15555
60153834003	074922-092213KW-DW-13	EPA 3546	OEXT/40782	EPA 8015B	GCSV/15555
60153834001	074922-092213KW-20-0107	EPA 5035A/5030B	GCV/4502	EPA 8015B	GCV/4508
60153834002	074922-092213KW-20-036	EPA 5035A/5030B	GCV/4502	EPA 8015B	GCV/4508
60153834003	074922-092213KW-DW-13	EPA 5035A/5030B	GCV/4502	EPA 8015B	GCV/4508
60153834004	TRIP BLANK	EPA 5035A/5030B	GCV/4502	EPA 8015B	GCV/4509
60153834001	074922-092213KW-20-0107	EPA 3010	MPRP/24596	EPA 6010	ICP/19116
60153834002	074922-092213KW-20-036	EPA 3010	MPRP/24596	EPA 6010	ICP/19116
60153834003	074922-092213KW-DW-13	EPA 3010	MPRP/24596	EPA 6010	ICP/19116
60153834001	074922-092213KW-20-0107	EPA 7470	MERP/7772	EPA 7470	MERC/7729
60153834002	074922-092213KW-20-036	EPA 7470	MERP/7772	EPA 7470	MERC/7729
60153834003	074922-092213KW-DW-13	EPA 7470	MERP/7772	EPA 7470	MERC/7729
60153834001	074922-092213KW-20-0107	EPA 8260	MSV/56812		
60153834002	074922-092213KW-20-036	EPA 8260	MSV/56812		
60153834003	074922-092213KW-DW-13	EPA 8260	MSV/56812		
60153834001	074922-092213KW-20-0107	ASTM D2974	PMST/9011		
60153834002	074922-092213KW-20-036	ASTM D2974	PMST/9011		
60153834003	074922-092213KW-DW-13	ASTM D2974	PMST/9011		
60153834004	TRIP BLANK	ASTM D2974	PMST/9011		
60153834001	074922-092213KW-20-0107	SW-846 7.3.4.2	WET/43576		
60153834002	074922-092213KW-20-036	SW-846 7.3.4.2	WET/43576		
60153834003	074922-092213KW-DW-13	SW-846 7.3.4.2	WET/43576		
60153834001	074922-092213KW-20-0107	EPA 9045	WET/43594		
60153834002	074922-092213KW-20-036	EPA 9045	WET/43594		
60153834003	074922-092213KW-DW-13	EPA 9045	WET/43594		
60153834001	074922-092213KW-20-0107	ASTM D92	WET/43621		
60153834002	074922-092213KW-20-036	ASTM D92	WET/43621		
60153834003	074922-092213KW-DW-13	ASTM D92	WET/43621		
60153834001	074922-092213KW-20-0107	SW-846 7.3.3.2	WETA/26306		
60153834002	074922-092213KW-20-036	SW-846 7.3.3.2	WETA/26306		
60153834003	074922-092213KW-DW-13	SW-846 7.3.3.2	WETA/26306		
60153834001	074922-092213KW-20-0107	EPA 9056	WETA/26474	EPA 9056	WETA/26475
60153834002	074922-092213KW-20-036	EPA 9056	WETA/26474	EPA 9056	WETA/26475
60153834003	074922-092213KW-DW-13	EPA 9056	WETA/26474	EPA 9056	WETA/26475

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September 27, 2013

Chris Fetters
COP CRA LA
5551 Corporate Blvd. Suite200
Baton Rouge, LA 70808

RE: Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Dear Chris Fetters:
Enclosed are the analytical results for sample(s) received by the laboratory on September 13, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Deborah Brennan, COP CRA LA
Joseph Kraska, COP CRA LA
Kelly Williams, COP CRA LA

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CERTIFICATIONS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60153012001	**074922-091213KW-FT-379**	Water	09/12/13 09:30	09/13/13 08:30
60153012002	**074922-091213KW-FT-229**	Water	09/12/13 09:45	09/13/13 08:30
60153012003	**074922-091213MW-DW-01**	Solid	09/12/13 10:00	09/13/13 08:30

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SAMPLE ANALYTE COUNT

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60153012001	**074922-091213KW-FT-379**	EPA 8015B	JDH	4	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 6010	NDJ	7	PASI-K
		EPA 7470	TDS	1	PASI-K
		EPA 8260	RAB	13	PASI-K
		EPA 1010	AJM	1	PASI-K
		SW-846 7.3.4.2 Modified	AJM	1	PASI-K
		EPA 9040	AJM	1	PASI-K
		SW-846 7.3.3.2 Modified	AJM	1	PASI-K
60153012002	**074922-091213KW-FT-229**	EPA 8015B	JDH	4	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 6010	NDJ	7	PASI-K
		EPA 7470	TDS	1	PASI-K
		EPA 8260	RAB	13	PASI-K
		EPA 1010	AJM	1	PASI-K
		SW-846 7.3.4.2 Modified	AJM	1	PASI-K
		EPA 9040	AJM	1	PASI-K
		SW-846 7.3.3.2 Modified	AJM	1	PASI-K
60153012003	**074922-091213MW-DW-01**	EPA 8015B	JDH	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		EPA 6010	NDJ	7	PASI-K
		EPA 7470	TDS	1	PASI-K
		EPA 8260	RAB	13	PASI-K
		ASTM D2974	DWC	1	PASI-K
		SW-846 7.3.4.2	AJM	1	PASI-K
		EPA 9045	DJR	1	PASI-K
		ASTM D92	AJM	1	PASI-K
		SW-846 7.3.3.2	AJM	1	PASI-K

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HITS ONLY

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
60153012001	**074922-091213KW-FT-379**					
EPA 8015B	TPH-DRO (C10-C28)	3.3	mg/L	0.50	09/23/13 18:39	
EPA 8015B	TPH-ORO (C28-C35)	1.2	mg/L	0.50	09/23/13 18:39	
EPA 5030B/8015B	Preservation pH	1.0			09/26/13 22:02	
EPA 1010	Flashpoint	>210	deg F	78.0	09/16/13 08:30	
EPA 9040	pH	10.5	Std. Units	0.10	09/14/13 10:00	H6
60153012002	**074922-091213KW-FT-229**					
EPA 8015B	TPH-DRO (C10-C28)	1.0	mg/L	0.50	09/23/13 18:46	
EPA 5030B/8015B	Preservation pH	1.0			09/26/13 22:24	
EPA 1010	Flashpoint	>210	deg F	78.0	09/16/13 08:30	
EPA 9040	pH	12.1	Std. Units	0.10	09/14/13 10:00	H6
60153012003	**074922-091213MW-DW-01**					
EPA 8015B	TPH-DRO (C10-C28)	37.4	mg/kg	11.8	09/25/13 15:17	
ASTM D2974	Percent Moisture	16.5	%	0.50	09/20/13 00:00	
EPA 9045	pH at 25 Degrees C	6.7	Std. Units	0.10	09/17/13 13:15	H1
ASTM D92	Flashpoint	>210	deg F		09/16/13 08:30	

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: COP CRA LA
Date: September 27, 2013

General Information:
3 samples were analyzed for EPA 8015B. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C with any exceptions noted below.
The samples were prepared in accordance with EPA 3546 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.

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: GCSV/15457

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **EPA 8015B**
Description: Gasoline Range Organics
Client: COP CRA LA
Date: September 27, 2013

General Information:
1 sample was analyzed for EPA 8015B. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A/5030B 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.

QC Batch: GCV/4466

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BLANK (Lab ID: 1254139)
  - 4-Bromofluorobenzene (S)
- LCS (Lab ID: 1254140)
  - 4-Bromofluorobenzene (S)

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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **EPA 5030B/8015B**
Description: Gasoline Range Organics
Client: COP CRA LA
Date: September 27, 2013

General Information:
2 samples were analyzed for EPA 5030B/8015B. 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.

QC Batch: GCV/4487

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- 074922-091213KW-FT-229 (Lab ID: 60153012002)
  - 4-Bromofluorobenzene (S)
- 074922-091213KW-FT-379 (Lab ID: 60153012001)
  - 4-Bromofluorobenzene (S)
- BLANK (Lab ID: 1258214)
  - 4-Bromofluorobenzene (S)
- LCS (Lab ID: 1258215)
  - 4-Bromofluorobenzene (S)

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: GCV/4487

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **EPA 6010**
Description: 6010 MET ICP, TCLP
Client: COP CRA LA
Date: September 27, 2013

General Information:
3 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **EPA 7470**
Description: 7470 Mercury, TCLP
Client: COP CRA LA
Date: September 27, 2013

General Information:
3 samples were analyzed for EPA 7470. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 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.

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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **EPA 8260**
Description: 8260 MSV TCLP
Client: COP CRA LA
Date: September 27, 2013

General Information:
3 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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **EPA 1010**
Description: 1010 Flashpoint,Closed Cup
Client: COP CRA LA
Date: September 27, 2013

General Information:
2 samples were analyzed for EPA 1010. 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.

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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **SW-846 7.3.4.2 Modified**
Description: 734S Reactive Sulfide
Client: COP CRA LA
Date: September 27, 2013

General Information:
2 samples were analyzed for SW-846 7.3.4.2 Modified. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **SW-846 7.3.4.2**
Description: Reactive Sulfide
Client: COP CRA LA
Date: September 27, 2013

General Information:
1 sample was analyzed for SW-846 7.3.4.2. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **EPA 9040**
Description: 9040 pH
Client: COP CRA LA
Date: September 27, 2013

General Information:
2 samples were analyzed for EPA 9040. 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.

H6: Analysis initiated outside of the 15 minute EPA recommended holding time.
- 074922-091213KW-FT-229 (Lab ID: 60153012002)
- 074922-091213KW-FT-379 (Lab ID: 60153012001)

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **EPA 9045**
Description: 9045 pH Soil
Client: COP CRA LA
Date: September 27, 2013

General Information:
1 sample was analyzed for EPA 9045. 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.

H1: Analysis conducted outside the EPA method holding time.
- 074922-091213MW-DW-01 (Lab ID: 60153012003)

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **ASTM D92**
Description: Flashpoint, Open Cup
Client: COP CRA LA
Date: September 27, 2013

General Information:
1 sample was analyzed for ASTM D92. 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.

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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **SW-846 7.3.3.2**
Description: 733C S Reactive Cyanide
Client: COP CRA LA
Date: September 27, 2013

General Information:
1 sample was analyzed for SW-846 7.3.3.2. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Method: **SW-846 7.3.3.2 Modified**
Description: 733C Reactive Cyanide
Client: COP CRA LA
Date: September 27, 2013

General Information:
2 samples were analyzed for SW-846 7.3.3.2 Modified. 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.

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.

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.

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ANALYTICAL RESULTS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Sample: 074922-091213KW-FT-379 **Lab ID: 60153012001** Collected: 09/12/13 09:30 Received: 09/13/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO (C10-C28)	**3.3**	mg/L	0.50	0.25	1	09/19/13 00:00	09/23/13 18:39		
TPH-ORO (C28-C35)	**1.2**	mg/L	0.50	0.25	1	09/19/13 00:00	09/23/13 18:39		
Surrogates									
p-Terphenyl (S)	97	%	28-127		1	09/19/13 00:00	09/23/13 18:39	92-94-4	
n-Tetracosane (S)	72	%	22-121		1	09/19/13 00:00	09/23/13 18:39	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		09/26/13 22:02		
Surrogates									
4-Bromofluorobenzene (S)	80	%	65-123		1		09/26/13 22:02	460-00-4	CL
Preservation pH	**1.0**				1		09/26/13 22:02		
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 09/21/13 00:00								
Arsenic	ND	mg/L	0.50		1	09/23/13 14:55	09/24/13 13:21	7440-38-2	
Barium	ND	mg/L	2.5		1	09/23/13 14:55	09/24/13 13:21	7440-39-3	
Cadmium	ND	mg/L	0.050		1	09/23/13 14:55	09/24/13 13:21	7440-43-9	
Chromium	ND	mg/L	0.10		1	09/23/13 14:55	09/24/13 13:21	7440-47-3	
Lead	ND	mg/L	0.50		1	09/23/13 14:55	09/24/13 15:53	7439-92-1	
Selenium	ND	mg/L	0.50		1	09/23/13 14:55	09/24/13 13:21	7782-49-2	
Silver	ND	mg/L	0.10		1	09/23/13 14:55	09/24/13 13:21	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 09/21/13 00:00								
Mercury	ND	mg/L	0.0020	0.0010	1	09/23/13 12:15	09/23/13 16:16	7439-97-6	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 09/21/13 00:00								
Benzene	ND	ug/L	50.0	25.0	1		09/23/13 11:14	71-43-2	
2-Butanone (MEK)	ND	ug/L	1000	500	1		09/23/13 11:14	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	25.0	1		09/23/13 11:14	56-23-5	
Chlorobenzene	ND	ug/L	50.0	25.0	1		09/23/13 11:14	108-90-7	
Chloroform	ND	ug/L	200	100	1		09/23/13 11:14	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	25.0	1		09/23/13 11:14	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	25.0	1		09/23/13 11:14	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	25.0	1		09/23/13 11:14	127-18-4	
Trichloroethene	ND	ug/L	50.0	25.0	1		09/23/13 11:14	79-01-6	
Vinyl chloride	ND	ug/L	100	50.0	1		09/23/13 11:14	75-01-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%	80-120		1		09/23/13 11:14	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		09/23/13 11:14	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120		1		09/23/13 11:14	460-00-4	
1010 Flashpoint,Closed Cup	Analytical Method: EPA 1010								
Flashpoint	**>210**	deg F	78.0	78.0	1		09/16/13 08:30		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Sample: 074922-091213KW-FT-379 **Lab ID: 60153012001** Collected: 09/12/13 09:30 Received: 09/13/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
734S Reactive Sulfide	Analytical Method: SW-846 7.3.4.2 Modified								
Sulfide, Reactive	ND	mg/L	10.0	1.0	1		09/17/13 15:30		
9040 pH	Analytical Method: EPA 9040								
pH	**10.5**	Std. Units	0.10	0.10	1		09/14/13 10:00		H6
733C Reactive Cyanide	Analytical Method: SW-846 7.3.3.2 Modified								
Cyanide, Reactive	ND	mg/L	0.0050	0.0019	1		09/17/13 09:42		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Sample: 074922-091213KW-FT-229 **Lab ID: 60153012002** Collected: 09/12/13 09:45 Received: 09/13/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO (C10-C28)	**1.0**	mg/L	0.50	0.25	1	09/19/13 00:00	09/23/13 18:46		
TPH-ORO (C28-C35)	ND	mg/L	0.50	0.25	1	09/19/13 00:00	09/23/13 18:46		
Surrogates									
p-Terphenyl (S)	94	%	28-127		1	09/19/13 00:00	09/23/13 18:46	92-94-4	
n-Tetracosane (S)	94	%	22-121		1	09/19/13 00:00	09/23/13 18:46	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		09/26/13 22:24		
Surrogates									
4-Bromofluorobenzene (S)	69	%	65-123		1		09/26/13 22:24	460-00-4	CL
Preservation pH	**1.0**				1		09/26/13 22:24		
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 09/21/13 00:00								
Arsenic	ND	mg/L	0.50		1	09/23/13 14:55	09/24/13 13:26	7440-38-2	
Barium	ND	mg/L	2.5		1	09/23/13 14:55	09/24/13 13:26	7440-39-3	
Cadmium	ND	mg/L	0.050		1	09/23/13 14:55	09/24/13 13:26	7440-43-9	
Chromium	ND	mg/L	0.10		1	09/23/13 14:55	09/24/13 13:26	7440-47-3	
Lead	ND	mg/L	0.50		1	09/23/13 14:55	09/24/13 15:58	7439-92-1	
Selenium	ND	mg/L	0.50		1	09/23/13 14:55	09/24/13 13:26	7782-49-2	
Silver	ND	mg/L	0.10		1	09/23/13 14:55	09/24/13 13:26	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 09/21/13 00:00								
Mercury	ND	mg/L	0.0020	0.0010	1	09/23/13 12:15	09/23/13 16:18	7439-97-6	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 09/21/13 00:00								
Benzene	ND	ug/L	50.0	25.0	1		09/23/13 11:30	71-43-2	
2-Butanone (MEK)	ND	ug/L	1000	500	1		09/23/13 11:30	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	25.0	1		09/23/13 11:30	56-23-5	
Chlorobenzene	ND	ug/L	50.0	25.0	1		09/23/13 11:30	108-90-7	
Chloroform	ND	ug/L	200	100	1		09/23/13 11:30	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	25.0	1		09/23/13 11:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	25.0	1		09/23/13 11:30	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	25.0	1		09/23/13 11:30	127-18-4	
Trichloroethene	ND	ug/L	50.0	25.0	1		09/23/13 11:30	79-01-6	
Vinyl chloride	ND	ug/L	100	50.0	1		09/23/13 11:30	75-01-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	80-120		1		09/23/13 11:30	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		09/23/13 11:30	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-120		1		09/23/13 11:30	460-00-4	
1010 Flashpoint,Closed Cup	Analytical Method: EPA 1010								
Flashpoint	**>210**	deg F	78.0	78.0	1		09/16/13 08:30		

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ANALYTICAL RESULTS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Sample: 074922-091213KW-FT-229 **Lab ID: 60153012002** Collected: 09/12/13 09:45 Received: 09/13/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
734S Reactive Sulfide	Analytical Method: SW-846 7.3.4.2 Modified								
Sulfide, Reactive	ND	mg/L	10.0	1.0	1		09/17/13 15:30		
9040 pH	Analytical Method: EPA 9040								
pH	**12.1**	Std. Units	0.10	0.10	1		09/14/13 10:00		H6
733C Reactive Cyanide	Analytical Method: SW-846 7.3.3.2 Modified								
Cyanide, Reactive	ND	mg/L	0.0050	0.0019	1		09/17/13 09:45		

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ANALYTICAL RESULTS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Sample: 074922-091213MW-DW-01 **Lab ID: 60153012003** Collected: 09/12/13 10:00 Received: 09/13/13 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH-DRO (C10-C28)	**37.4**	mg/kg	11.8		1	09/23/13 00:00	09/25/13 15:17		
TPH-ORO (C28-C35)	ND	mg/kg	11.8		1	09/23/13 00:00	09/25/13 15:17		
Surrogates									
n-Tetracosane (S)	65	%	35-147		1	09/23/13 00:00	09/25/13 15:17	646-31-1	
p-Terphenyl (S)	76	%	37-138		1	09/23/13 00:00	09/25/13 15:17	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B								
TPH-GRO	ND	mg/kg	12.0	6.0	1	09/13/13 00:00	09/14/13 06:15		
Surrogates									
4-Bromofluorobenzene (S)	97	%	67-139		1	09/13/13 00:00	09/14/13 06:15	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 09/21/13 00:00								
Arsenic	ND	mg/L	0.50		1	09/23/13 14:55	09/24/13 13:28	7440-38-2	
Barium	ND	mg/L	2.5		1	09/23/13 14:55	09/24/13 13:28	7440-39-3	
Cadmium	ND	mg/L	0.050		1	09/23/13 14:55	09/24/13 13:28	7440-43-9	
Chromium	ND	mg/L	0.10		1	09/23/13 14:55	09/24/13 13:28	7440-47-3	
Lead	ND	mg/L	0.50		1	09/23/13 14:55	09/24/13 16:00	7439-92-1	
Selenium	ND	mg/L	0.50		1	09/23/13 14:55	09/24/13 13:28	7782-49-2	
Silver	ND	mg/L	0.10		1	09/23/13 14:55	09/24/13 13:28	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 09/21/13 00:00								
Mercury	ND	mg/L	0.0020	0.0010	1	09/23/13 12:15	09/23/13 16:20	7439-97-6	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 09/21/13 00:00								
Benzene	ND	ug/L	50.0	25.0	1		09/23/13 11:45	71-43-2	
2-Butanone (MEK)	ND	ug/L	1000	500	1		09/23/13 11:45	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	25.0	1		09/23/13 11:45	56-23-5	
Chlorobenzene	ND	ug/L	50.0	25.0	1		09/23/13 11:45	108-90-7	
Chloroform	ND	ug/L	200	100	1		09/23/13 11:45	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	25.0	1		09/23/13 11:45	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	25.0	1		09/23/13 11:45	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	25.0	1		09/23/13 11:45	127-18-4	
Trichloroethene	ND	ug/L	50.0	25.0	1		09/23/13 11:45	79-01-6	
Vinyl chloride	ND	ug/L	100	50.0	1		09/23/13 11:45	75-01-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%	80-120		1		09/23/13 11:45	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		09/23/13 11:45	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120		1		09/23/13 11:45	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974								
Percent Moisture	**16.5**	%	0.50	0.50	1		09/20/13 00:00		

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ANALYTICAL RESULTS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Sample: 074922-091213MW-DW-01 **Lab ID: 60153012003** Collected: 09/12/13 10:00 Received: 09/13/13 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Reactive Sulfide	Analytical Method: SW-846 7.3.4.2								
Sulfide, Reactive	ND	mg/kg	100		1		09/17/13 15:30		
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**6.7**	Std. Units	0.10	0.10	1		09/17/13 13:15		H1
Flashpoint, Open Cup	Analytical Method: ASTM D92								
Flashpoint	**>210**	deg F			1		09/16/13 08:30		
733C S Reactive Cyanide	Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025		1		09/17/13 10:02		

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: GCV/4466
QC Batch Method: EPA 5035A/5030B
Analysis Method: EPA 8015B
Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60153012003

METHOD BLANK: 1252900 Matrix: Solid
Associated Lab Samples: 60153012003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/kg	ND	10.0	09/13/13 20:55	
4-Bromofluorobenzene (S)	%	105	67-139	09/13/13 20:55	

METHOD BLANK: 1254139 Matrix: Solid
Associated Lab Samples: 60153012003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4-Bromofluorobenzene (S)	%	83	67-139	09/16/13 19:44	CL

LABORATORY CONTROL SAMPLE: 1252901

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/kg	50	49.4	99	65-143	
4-Bromofluorobenzene (S)	%			100	67-139	

LABORATORY CONTROL SAMPLE: 1254140

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4-Bromofluorobenzene (S)	%			91	67-139	CL

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: GCV/4487
QC Batch Method: EPA 5030B/8015B
Analysis Method: EPA 5030B/8015B
Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60153012001, 60153012002

METHOD BLANK: 1258214 Matrix: Water
Associated Lab Samples: 60153012001, 60153012002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	09/26/13 21:41	
4-Bromofluorobenzene (S)	%	87	65-123	09/26/13 21:41	CL

LABORATORY CONTROL SAMPLE: 1258215

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	0.86	86	67-134	
4-Bromofluorobenzene (S)	%			91	65-123	CL

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: MERP/7734 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 60153012001, 60153012002, 60153012003

METHOD BLANK: 1258527 Matrix: Water
Associated Lab Samples: 60153012001, 60153012002, 60153012003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	09/23/13 15:40	

LABORATORY CONTROL SAMPLE: 1258528

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.015	0.014	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1258529 1258530

Parameter	Units	60153085001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.015	.015	0.014	0.015	97	98	75-125	1	20	

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: MPRP/24392 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
Associated Lab Samples: 60153012001, 60153012002, 60153012003

METHOD BLANK: 1258712 Matrix: Water
Associated Lab Samples: 60153012001, 60153012002, 60153012003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.50	09/24/13 12:45	
Barium	mg/L	ND	2.5	09/24/13 12:45	
Cadmium	mg/L	ND	0.050	09/24/13 12:45	
Chromium	mg/L	ND	0.10	09/24/13 12:45	
Lead	mg/L	ND	0.50	09/24/13 15:51	
Selenium	mg/L	ND	0.50	09/24/13 12:45	
Silver	mg/L	ND	0.10	09/24/13 12:45	

LABORATORY CONTROL SAMPLE: 1258713

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	1	0.92	92	80-120	
Barium	mg/L	1	0.94	94	80-120	
Cadmium	mg/L	1	0.93	93	80-120	
Chromium	mg/L	1	0.93	93	80-120	
Lead	mg/L	1	0.99	99	80-120	
Selenium	mg/L	1	0.89	89	80-120	
Silver	mg/L	.5	0.45	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1258714 1258715

Parameter	Units	60153085001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	8.9	9.4	89	94	75-125	5	20	
Barium	mg/L	ND	10	10	9.0	9.5	90	94	75-125	5	20	
Cadmium	mg/L	ND	10	10	8.9	9.4	89	94	75-125	5	20	
Chromium	mg/L	ND	10	10	8.8	9.3	88	93	75-125	5	20	
Lead	mg/L	ND	10	10	9.0	9.4	90	94	75-125	5	20	
Selenium	mg/L	ND	10	10	8.6	9.1	86	91	75-125	5	20	
Silver	mg/L	ND	5	5	4.3	4.5	85	90	75-125	5	20	

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: MSV/56479 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 60153012001, 60153012002, 60153012003

METHOD BLANK: 1258419 Matrix: Water
Associated Lab Samples: 60153012001, 60153012002, 60153012003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	09/23/13 10:13	
1,2-Dichloroethane	ug/L	ND	50.0	09/23/13 10:13	
2-Butanone (MEK)	ug/L	ND	1000	09/23/13 10:13	
Benzene	ug/L	ND	50.0	09/23/13 10:13	
Carbon tetrachloride	ug/L	ND	50.0	09/23/13 10:13	
Chlorobenzene	ug/L	ND	50.0	09/23/13 10:13	
Chloroform	ug/L	ND	200	09/23/13 10:13	
Tetrachloroethene	ug/L	ND	50.0	09/23/13 10:13	
Trichloroethene	ug/L	ND	50.0	09/23/13 10:13	
Vinyl chloride	ug/L	ND	100	09/23/13 10:13	
1,2-Dichloroethane-d4 (S)	%	99	80-120	09/23/13 10:13	
4-Bromofluorobenzene (S)	%	99	80-120	09/23/13 10:13	
Toluene-d8 (S)	%	100	80-120	09/23/13 10:13	

LABORATORY CONTROL SAMPLE: 1258420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	1000	1270	127	70-127	
1,2-Dichloroethane	ug/L	1000	1070	107	72-122	
2-Butanone (MEK)	ug/L	5000	4990	100	69-124	
Benzene	ug/L	1000	1120	112	73-122	
Carbon tetrachloride	ug/L	1000	1240	124	73-125	
Chlorobenzene	ug/L	1000	1100	110	80-120	
Chloroform	ug/L	1000	1080	108	76-120	
Tetrachloroethene	ug/L	1000	1190	119	79-122	
Trichloroethene	ug/L	1000	1140	114	76-120	
Vinyl chloride	ug/L	1000	1280	128	57-140	
1,2-Dichloroethane-d4 (S)	%			100	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			100	80-120	

MATRIX SPIKE SAMPLE: 1258421

Parameter	Units	60153500001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	5000	5710	114	66-142	
1,2-Dichloroethane	ug/L	ND	5000	5670	113	53-144	
2-Butanone (MEK)	ug/L	40900	25000	72200	125	54-127	
Benzene	ug/L	550	5000	5980	109	48-150	
Carbon tetrachloride	ug/L	ND	5000	6140	123	68-145	
Chlorobenzene	ug/L	ND	5000	5850	117	68-131	

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

MATRIX SPIKE SAMPLE: 1258421

Parameter	Units	60153500001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	ND	5000	5520	110	69-126	
Tetrachloroethene	ug/L	ND	5000	5950	119	66-139	
Trichloroethene	ug/L	ND	5000	5620	112	67-130	
Vinyl chloride	ug/L	ND	5000	5260	105	47-159	
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				100	80-120	
Toluene-d8 (S)	%				102	80-120	

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: OEXT/40598
QC Batch Method: EPA 3546
Analysis Method: EPA 8015B
Analysis Description: EPA 8015B
Associated Lab Samples: 60153012003

METHOD BLANK: 1258242 Matrix: Solid
Associated Lab Samples: 60153012003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/kg	ND	9.8	09/25/13 12:29	
TPH-ORO (C28-C35)	mg/kg	ND	9.8	09/25/13 12:29	
n-Tetracosane (S)	%	82	35-147	09/25/13 12:29	
p-Terphenyl (S)	%	93	37-138	09/25/13 12:29	

LABORATORY CONTROL SAMPLE: 1258243

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	mg/kg	82.5	77.7	94	66-120	
TPH-ORO (C28-C35)	mg/kg		ND			
n-Tetracosane (S)	%			80	35-147	
p-Terphenyl (S)	%			87	37-138	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1258246 1258247

Parameter	Units	60153691001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-DRO (C10-C28)	mg/kg	ND	93.5	93.3	81.9	78.8	86	83	22-152	4	43	
TPH-ORO (C28-C35)	mg/kg	ND			ND	ND						
n-Tetracosane (S)	%						56	62	35-147			
p-Terphenyl (S)	%						65	68	37-138			

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: OEXT/40539
QC Batch Method: EPA 3510C
Analysis Method: EPA 8015B
Analysis Description: EPA 8015B
Associated Lab Samples: 60153012001, 60153012002

METHOD BLANK: 1255895 Matrix: Water
Associated Lab Samples: 60153012001, 60153012002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/L	ND	0.50	09/23/13 18:26	
TPH-ORO (C28-C35)	mg/L	ND	0.50	09/23/13 18:26	
n-Tetracosane (S)	%	89	22-121	09/23/13 18:26	
p-Terphenyl (S)	%	89	28-127	09/23/13 18:26	

LABORATORY CONTROL SAMPLE: 1255896

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	mg/L	12.5	12.6	101	39-120	
TPH-ORO (C28-C35)	mg/L		ND			
n-Tetracosane (S)	%			103	22-121	
p-Terphenyl (S)	%			107	28-127	

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: PMST/8971
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60153012003

METHOD BLANK: 1256946 Matrix: Solid
Associated Lab Samples: 60153012003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	09/20/13 00:00	

SAMPLE DUPLICATE: 1256947

Parameter	Units	60153036001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	25.8	25.2	2	20	

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: WET/43410
QC Batch Method: SW-846 7.3.4.2 Modified
Analysis Method: SW-846 7.3.4.2 Modified
Analysis Description: 734S Reactive Sulfide
Associated Lab Samples: 60153012001, 60153012002

METHOD BLANK: 1253753 Matrix: Water
Associated Lab Samples: 60153012001, 60153012002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Reactive	mg/L	ND	10.0	09/17/13 15:30	

LABORATORY CONTROL SAMPLE: 1253754

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/L	20	18.6	93	80-107	

MATRIX SPIKE SAMPLE: 1253755

Parameter	Units	60153012001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/L	ND	50	44.4	89	67-110	

SAMPLE DUPLICATE: 1253756

Parameter	Units	60153012002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Reactive	mg/L	ND	2J		30	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: WET/43411 Analysis Method: SW-846 7.3.4.2
QC Batch Method: SW-846 7.3.4.2 Analysis Description: Reactive Sulfide
Associated Lab Samples: 60153012003

METHOD BLANK: 1253757 Matrix: Solid
Associated Lab Samples: 60153012003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Reactive	mg/kg	ND	100	09/17/13 15:30	

LABORATORY CONTROL SAMPLE: 1253758

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/kg	200	190	95	77-110	

MATRIX SPIKE SAMPLE: 1253759

Parameter	Units	60153080001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/kg	ND	500	455	87	67-116	

SAMPLE DUPLICATE: 1253760

Parameter	Units	60153012003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Reactive	mg/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: WET/43403 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60153012001, 60153012002

SAMPLE DUPLICATE: 1253269

Parameter	Units	60153012001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	10.5	10.5	0	10	H6

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: WET/43423
QC Batch Method: EPA 9045
Analysis Method: EPA 9045
Analysis Description: 9045 pH
Associated Lab Samples: 60153012003

SAMPLE DUPLICATE: 1253998

Parameter	Units	60152776001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	3	H1

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: WETA/26209
QC Batch Method: SW-846 7.3.3.2
Analysis Method: SW-846 7.3.3.2
Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 60153012003

METHOD BLANK: 1253784 Matrix: Solid
Associated Lab Samples: 60153012003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/kg	ND	0.025	09/17/13 09:46	

LABORATORY CONTROL SAMPLE: 1253785

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	.5	0.50	99	71-123	

MATRIX SPIKE SAMPLE: 1253786

Parameter	Units	60152732001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	ND	.5	0.49	97	57-132	

SAMPLE DUPLICATE: 1253787

Parameter	Units	60153080001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Reactive	mg/kg	ND	ND		23	

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

QC Batch: WETA/26208 Analysis Method: SW-846 7.3.3.2 Modified
QC Batch Method: SW-846 7.3.3.2 Modified Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 60153012001, 60153012002

METHOD BLANK: 1253767 Matrix: Water
Associated Lab Samples: 60153012001, 60153012002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/L	ND	0.0050	09/17/13 09:38	

LABORATORY CONTROL SAMPLE: 1253768

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/L	.05	0.051	101	74-121	

MATRIX SPIKE SAMPLE: 1253769

Parameter	Units	60153012001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/L	ND	.05	0.051	102	57-125	

SAMPLE DUPLICATE: 1253770

Parameter	Units	60153012002 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Reactive	mg/L	ND	ND		26	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: OEXT/40539

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: GCV/4487

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

CL The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

H1 Analysis conducted outside the EPA method holding time.

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60153012

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60153012003	074922-091213MW-DW-01	EPA 3546	OEXT/40598	EPA 8015B	GCSV/15488
60153012001	074922-091213KW-FT-379	EPA 3510C	OEXT/40539	EPA 8015B	GCSV/15457
60153012002	074922-091213KW-FT-229	EPA 3510C	OEXT/40539	EPA 8015B	GCSV/15457
60153012003	074922-091213MW-DW-01	EPA 5035A/5030B	GCV/4466	EPA 8015B	GCV/4471
60153012001	074922-091213KW-FT-379	EPA 5030B/8015B	GCV/4487		
60153012002	074922-091213KW-FT-229	EPA 5030B/8015B	GCV/4487		
60153012001	074922-091213KW-FT-379	EPA 3010	MPRP/24392	EPA 6010	ICP/19016
60153012002	074922-091213KW-FT-229	EPA 3010	MPRP/24392	EPA 6010	ICP/19016
60153012003	074922-091213MW-DW-01	EPA 3010	MPRP/24392	EPA 6010	ICP/19016
60153012001	074922-091213KW-FT-379	EPA 7470	MERP/7734	EPA 7470	MERC/7692
60153012002	074922-091213KW-FT-229	EPA 7470	MERP/7734	EPA 7470	MERC/7692
60153012003	074922-091213MW-DW-01	EPA 7470	MERP/7734	EPA 7470	MERC/7692
60153012001	074922-091213KW-FT-379	EPA 8260	MSV/56479		
60153012002	074922-091213KW-FT-229	EPA 8260	MSV/56479		
60153012003	074922-091213MW-DW-01	EPA 8260	MSV/56479		
60153012003	074922-091213MW-DW-01	ASTM D2974	PMST/8971		
60153012001	074922-091213KW-FT-379	EPA 1010	WET/43413		
60153012002	074922-091213KW-FT-229	EPA 1010	WET/43413		
60153012001	074922-091213KW-FT-379	SW-846 7.3.4.2 Modified	WET/43410		
60153012002	074922-091213KW-FT-229	SW-846 7.3.4.2 Modified	WET/43410		
60153012003	074922-091213MW-DW-01	SW-846 7.3.4.2	WET/43411		
60153012001	074922-091213KW-FT-379	EPA 9040	WET/43403		
60153012002	074922-091213KW-FT-229	EPA 9040	WET/43403		
60153012003	074922-091213MW-DW-01	EPA 9045	WET/43423		
60153012003	074922-091213MW-DW-01	ASTM D92	WET/43414		
60153012003	074922-091213MW-DW-01	SW-846 7.3.3.2	WETA/26209		
60153012001	074922-091213KW-FT-379	SW-846 7.3.3.2 Modified	WETA/26208		
60153012002	074922-091213KW-FT-229	SW-846 7.3.3.2 Modified	WETA/26208		

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October 07, 2013

Chris Fetters
COP CRA LA
5551 Corporate Blvd. Suite200
Baton Rouge, LA 70808

RE: Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Dear Chris Fetters:
Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Deborah Brennan, COP CRA LA
Joseph Kraska, COP CRA LA
Kelly Williams, COP CRA LA

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CERTIFICATIONS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60154015001	074922-092413KW-FT-CSP	Water	09/24/13 11:15	09/26/13 08:10
60154015002	074922-092413KW-FT-112	Water	09/25/13 08:45	09/26/13 08:10

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SAMPLE ANALYTE COUNT

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60154015001	074922-092413KW-FT-CSP	EPA 8015B	JDH	4	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 6010	NDJ	7	PASI-K
		EPA 7470	TDS	1	PASI-K
		EPA 8260	RAB	13	PASI-K
		EPA 1010	AJM	1	PASI-K
		SW-846 7.3.4.2 Modified	AJM	1	PASI-K
		EPA 9040	DJR	1	PASI-K
		SW-846 7.3.3.2 Modified	AJM	1	PASI-K
		EPA 9056	OL	1	PASI-K
60154015002	074922-092413KW-FT-112	EPA 8015B	JDH	4	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 6010	NDJ	7	PASI-K
		EPA 7470	TDS	1	PASI-K
		EPA 8260	RAB	13	PASI-K
		EPA 1010	AJM	1	PASI-K
		SW-846 7.3.4.2 Modified	AJM	1	PASI-K
		EPA 9040	DJR	1	PASI-K
		SW-846 7.3.3.2 Modified	AJM	1	PASI-K
		EPA 9056	OL	1	PASI-K

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SUMMARY OF DETECTION

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
60154015001	**074922-092413KW-FT-CSP**					
EPA 8015B	TPH-DRO (C10-C28)	0.63	mg/L	0.50	10/01/13 16:16	
EPA 5030B/8015B	Preservation pH	1.0			09/27/13 23:05	
EPA 1010	Flashpoint	>210	deg F	78.0	10/02/13 14:00	
EPA 9040	pH	8.2	Std. Units	0.10	09/26/13 16:17	H6
EPA 9056	Chloride	123	mg/L	10.0	10/07/13 13:02	
60154015002	**074922-092413KW-FT-112**					
EPA 8015B	TPH-DRO (C10-C28)	0.51	mg/L	0.50	10/01/13 16:23	
EPA 5030B/8015B	Preservation pH	1.0			09/27/13 23:26	
EPA 1010	Flashpoint	>210	deg F	78.0	10/02/13 14:00	
EPA 9040	pH	8.0	Std. Units	0.10	09/26/13 16:17	H6
EPA 9056	Chloride	76.6	mg/L	10.0	10/07/13 13:18	

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: COP CRA LA
Date: October 07, 2013

General Information:
2 samples were analyzed for EPA 8015B. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C 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.

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, where applicable, 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: GCSV/15535

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Method: **EPA 5030B/8015B**
Description: Gasoline Range Organics
Client: COP CRA LA
Date: October 07, 2013

General Information:
2 samples were analyzed for EPA 5030B/8015B. 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, where applicable, 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: GCV/4500

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

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Method: **EPA 6010**
Description: 6010 MET ICP, TCLP
Client: COP CRA LA
Date: October 07, 2013

General Information:
2 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Method: **EPA 7470**
Description: 7470 Mercury, TCLP
Client: COP CRA LA
Date: October 07, 2013

General Information:
2 samples were analyzed for EPA 7470. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Method: EPA 8260
Description: 8260 MSV TCLP
Client: COP CRA LA
Date: October 07, 2013

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, where applicable, 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/56711

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60154015002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1264151)
  - Vinyl chloride

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Method: **EPA 1010**
Description: 1010 Flashpoint,Closed Cup
Client: COP CRA LA
Date: October 07, 2013

General Information:
2 samples were analyzed for EPA 1010. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Method: **SW-846 7.3.4.2 Modified**
Description: 734S Reactive Sulfide
Client: COP CRA LA
Date: October 07, 2013

General Information:
2 samples were analyzed for SW-846 7.3.4.2 Modified. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Method: **EPA 9040**
Description: 9040 pH
Client: COP CRA LA
Date: October 07, 2013

General Information:
2 samples were analyzed for EPA 9040. 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.

H6: Analysis initiated outside of the 15 minute EPA recommended holding time.
- 074922-092413KW-FT-112 (Lab ID: 60154015002)
- 074922-092413KW-FT-CSP (Lab ID: 60154015001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Method: **SW-846 7.3.3.2 Modified**
Description: 733C Reactive Cyanide
Client: COP CRA LA
Date: October 07, 2013

General Information:
2 samples were analyzed for SW-846 7.3.3.2 Modified. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Method: **EPA 9056**
Description: 9056 IC Anions
Client: COP CRA LA
Date: October 07, 2013

General Information:
2 samples were analyzed for EPA 9056. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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.

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Sample: 074922-092413KW-FT-CSP **Lab ID: 60154015001** Collected: 09/24/13 11:15 Received: 09/26/13 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO (C10-C28)	**0.63**	mg/L	0.50	0.25	1	09/30/13 00:00	10/01/13 16:16		
TPH-ORO (C28-C35)	ND	mg/L	0.50	0.25	1	09/30/13 00:00	10/01/13 16:16		
Surrogates									
p-Terphenyl (S)	90	%	28-127		1	09/30/13 00:00	10/01/13 16:16	92-94-4	
n-Tetracosane (S)	88	%	22-121		1	09/30/13 00:00	10/01/13 16:16	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		09/27/13 23:05		
Surrogates									
4-Bromofluorobenzene (S)	92	%	65-123		1		09/27/13 23:05	460-00-4	
Preservation pH	**1.0**				1		09/27/13 23:05		
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 10/02/13 00:00								
Arsenic	ND	mg/L	0.50		1	10/02/13 14:10	10/03/13 12:18	7440-38-2	
Barium	ND	mg/L	2.5		1	10/02/13 14:10	10/03/13 12:18	7440-39-3	
Cadmium	ND	mg/L	0.050		1	10/02/13 14:10	10/03/13 12:18	7440-43-9	
Chromium	ND	mg/L	0.10		1	10/02/13 14:10	10/03/13 12:18	7440-47-3	
Lead	ND	mg/L	0.50		1	10/02/13 14:10	10/03/13 12:18	7439-92-1	
Selenium	ND	mg/L	0.50		1	10/02/13 14:10	10/03/13 12:18	7782-49-2	
Silver	ND	mg/L	0.10		1	10/02/13 14:10	10/03/13 12:18	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 10/02/13 00:00								
Mercury	ND	mg/L	0.0020	0.0010	1	10/03/13 09:00	10/03/13 13:23	7439-97-6	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/02/13 00:00								
Benzene	ND	ug/L	50.0	25.0	1		10/03/13 04:24	71-43-2	
2-Butanone (MEK)	ND	ug/L	1000	500	1		10/03/13 04:24	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	25.0	1		10/03/13 04:24	56-23-5	
Chlorobenzene	ND	ug/L	50.0	25.0	1		10/03/13 04:24	108-90-7	
Chloroform	ND	ug/L	200	100	1		10/03/13 04:24	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	25.0	1		10/03/13 04:24	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	25.0	1		10/03/13 04:24	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	25.0	1		10/03/13 04:24	127-18-4	
Trichloroethene	ND	ug/L	50.0	25.0	1		10/03/13 04:24	79-01-6	
Vinyl chloride	ND	ug/L	100	50.0	1		10/03/13 04:24	75-01-4	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%	80-120		1		10/03/13 04:24	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/03/13 04:24	2037-26-5	
4-Bromofluorobenzene (S)	98	%	80-120		1		10/03/13 04:24	460-00-4	
1010 Flashpoint,Closed Cup	Analytical Method: EPA 1010								
Flashpoint	**>210**	deg F	78.0	78.0	1		10/02/13 14:00		

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Sample: 074922-092413KW-FT-CSP **Lab ID: 60154015001** Collected: 09/24/13 11:15 Received: 09/26/13 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
734S Reactive Sulfide	Analytical Method: SW-846 7.3.4.2 Modified								
Sulfide, Reactive	ND	mg/L	10.0	1.0	1		09/29/13 12:30		
9040 pH	Analytical Method: EPA 9040								
pH	**8.2**	Std. Units	0.10	0.10	1		09/26/13 16:17		H6
733C Reactive Cyanide	Analytical Method: SW-846 7.3.3.2 Modified								
Cyanide, Reactive	ND	mg/L	0.0050	0.0019	1		09/30/13 11:24		
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**123**	mg/L	10.0	5.0	10		10/07/13 13:02	16887-00-6	

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Sample: 074922-092413KW-FT-112 **Lab ID: 60154015002** Collected: 09/25/13 08:45 Received: 09/26/13 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO (C10-C28)	**0.51**	mg/L	0.50	0.25	1	09/30/13 00:00	10/01/13 16:23		
TPH-ORO (C28-C35)	ND	mg/L	0.50	0.25	1	09/30/13 00:00	10/01/13 16:23		
Surrogates									
p-Terphenyl (S)	81	%	28-127		1	09/30/13 00:00	10/01/13 16:23	92-94-4	
n-Tetracosane (S)	78	%	22-121		1	09/30/13 00:00	10/01/13 16:23	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		09/27/13 23:26		
Surrogates									
4-Bromofluorobenzene (S)	88	%	65-123		1		09/27/13 23:26	460-00-4	
Preservation pH	**1.0**				1		09/27/13 23:26		
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 10/02/13 00:00								
Arsenic	ND	mg/L	0.50		1	10/02/13 14:10	10/03/13 12:23	7440-38-2	
Barium	ND	mg/L	2.5		1	10/02/13 14:10	10/03/13 12:23	7440-39-3	
Cadmium	ND	mg/L	0.050		1	10/02/13 14:10	10/03/13 12:23	7440-43-9	
Chromium	ND	mg/L	0.10		1	10/02/13 14:10	10/03/13 12:23	7440-47-3	
Lead	ND	mg/L	0.50		1	10/02/13 14:10	10/03/13 12:23	7439-92-1	
Selenium	ND	mg/L	0.50		1	10/02/13 14:10	10/03/13 12:23	7782-49-2	
Silver	ND	mg/L	0.10		1	10/02/13 14:10	10/03/13 12:23	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 10/02/13 00:00								
Mercury	ND	mg/L	0.0020	0.0010	1	10/03/13 09:00	10/03/13 13:26	7439-97-6	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/02/13 00:00								
Benzene	ND	ug/L	50.0	25.0	1		10/03/13 04:39	71-43-2	
2-Butanone (MEK)	ND	ug/L	1000	500	1		10/03/13 04:39	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	25.0	1		10/03/13 04:39	56-23-5	
Chlorobenzene	ND	ug/L	50.0	25.0	1		10/03/13 04:39	108-90-7	
Chloroform	ND	ug/L	200	100	1		10/03/13 04:39	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	25.0	1		10/03/13 04:39	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	25.0	1		10/03/13 04:39	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	25.0	1		10/03/13 04:39	127-18-4	
Trichloroethene	ND	ug/L	50.0	25.0	1		10/03/13 04:39	79-01-6	
Vinyl chloride	ND	ug/L	100	50.0	1		10/03/13 04:39	75-01-4	M1
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	80-120		1		10/03/13 04:39	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/03/13 04:39	2037-26-5	
4-Bromofluorobenzene (S)	98	%	80-120		1		10/03/13 04:39	460-00-4	
1010 Flashpoint,Closed Cup	Analytical Method: EPA 1010								
Flashpoint	**>210**	deg F	78.0	78.0	1		10/02/13 14:00		

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ANALYTICAL RESULTS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Sample: 074922-092413KW-FT-112 **Lab ID: 60154015002** Collected: 09/25/13 08:45 Received: 09/26/13 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
734S Reactive Sulfide	Analytical Method: SW-846 7.3.4.2 Modified								
Sulfide, Reactive	ND	mg/L	10.0	1.0	1		09/29/13 12:30		
9040 pH	Analytical Method: EPA 9040								
pH	**8.0**	Std. Units	0.10	0.10	1		09/26/13 16:17		H6
733C Reactive Cyanide	Analytical Method: SW-846 7.3.3.2 Modified								
Cyanide, Reactive	ND	mg/L	0.0050	0.0019	1		09/30/13 11:28		
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**76.6**	mg/L	10.0	5.0	10		10/07/13 13:18	16887-00-6	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

QC Batch: GCV/4500
QC Batch Method: EPA 5030B/8015B
Analysis Method: EPA 5030B/8015B
Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60154015001, 60154015002

METHOD BLANK: 1260876
Matrix: Water
Associated Lab Samples: 60154015001, 60154015002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	09/27/13 18:47	
4-Bromofluorobenzene (S)	%	95	65-123	09/27/13 18:47	

LABORATORY CONTROL SAMPLE: 1260877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	1.2	122	67-134	
4-Bromofluorobenzene (S)	%			102	65-123	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

QC Batch: MERP/7766
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 60154015001, 60154015002

METHOD BLANK: 1264880 Matrix: Water
Associated Lab Samples: 60154015001, 60154015002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	10/03/13 13:17	

LABORATORY CONTROL SAMPLE: 1264881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.015	0.015	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1264882 1264883

Parameter	Units	60154348001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.015	.015	0.015	0.015	103	97	75-125	6	20	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

QC Batch: MPRP/24531
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET TCLP
Associated Lab Samples: 60154015001, 60154015002

METHOD BLANK: 1264243 Matrix: Water
Associated Lab Samples: 60154015001, 60154015002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.50	10/03/13 12:13	
Barium	mg/L	ND	2.5	10/03/13 12:13	
Cadmium	mg/L	ND	0.050	10/03/13 12:13	
Chromium	mg/L	ND	0.10	10/03/13 12:13	
Lead	mg/L	ND	0.50	10/03/13 12:13	
Selenium	mg/L	ND	0.50	10/03/13 12:13	
Silver	mg/L	ND	0.10	10/03/13 12:13	

LABORATORY CONTROL SAMPLE: 1264244

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	1	0.97	97	80-120	
Barium	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	1	0.99	99	80-120	
Chromium	mg/L	1	0.97	97	80-120	
Lead	mg/L	1	1.0	102	80-120	
Selenium	mg/L	1	0.96	96	80-120	
Silver	mg/L	.5	0.47	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1264245 1264246

Parameter	Units	60154348001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	9.9	10.1	99	100	75-125	2	20	
Barium	mg/L	5.3	10	10	14.9	15.2	96	99	75-125	2	20	
Cadmium	mg/L	ND	10	10	9.8	10.0	98	100	75-125	2	20	
Chromium	mg/L	ND	10	10	9.7	9.9	97	99	75-125	2	20	
Lead	mg/L	ND	10	10	9.6	9.8	95	98	75-125	2	20	
Selenium	mg/L	ND	10	10	9.7	9.9	97	99	75-125	2	20	
Silver	mg/L	ND	5	5	4.7	4.8	94	97	75-125	2	20	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

QC Batch: MSV/56711 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 60154015001, 60154015002

METHOD BLANK: 1264149 Matrix: Water
Associated Lab Samples: 60154015001, 60154015002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	10/03/13 03:23	
1,2-Dichloroethane	ug/L	ND	50.0	10/03/13 03:23	
2-Butanone (MEK)	ug/L	ND	1000	10/03/13 03:23	
Benzene	ug/L	ND	50.0	10/03/13 03:23	
Carbon tetrachloride	ug/L	ND	50.0	10/03/13 03:23	
Chlorobenzene	ug/L	ND	50.0	10/03/13 03:23	
Chloroform	ug/L	ND	200	10/03/13 03:23	
Tetrachloroethene	ug/L	ND	50.0	10/03/13 03:23	
Trichloroethene	ug/L	ND	50.0	10/03/13 03:23	
Vinyl chloride	ug/L	ND	100	10/03/13 03:23	
1,2-Dichloroethane-d4 (S)	%	97	80-120	10/03/13 03:23	
4-Bromofluorobenzene (S)	%	98	80-120	10/03/13 03:23	
Toluene-d8 (S)	%	99	80-120	10/03/13 03:23	

LABORATORY CONTROL SAMPLE: 1264150

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	1000	1000	100	70-127	
1,2-Dichloroethane	ug/L	1000	956	96	72-122	
2-Butanone (MEK)	ug/L	5000	4260	85	69-124	
Benzene	ug/L	1000	937	94	73-122	
Carbon tetrachloride	ug/L	1000	983	98	73-125	
Chlorobenzene	ug/L	1000	945	94	80-120	
Chloroform	ug/L	1000	951	95	76-120	
Tetrachloroethene	ug/L	1000	912	91	79-122	
Trichloroethene	ug/L	1000	899	90	76-120	
Vinyl chloride	ug/L	1000	1040	104	57-140	
1,2-Dichloroethane-d4 (S)	%			98	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			101	80-120	

MATRIX SPIKE SAMPLE: 1264151

Parameter	Units	60154015002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	1000	714	71	66-142	
1,2-Dichloroethane	ug/L	ND	1000	980	98	53-144	
2-Butanone (MEK)	ug/L	ND	5000	4360	87	54-127	
Benzene	ug/L	ND	1000	871	87	48-150	
Carbon tetrachloride	ug/L	ND	1000	868	87	68-145	
Chlorobenzene	ug/L	ND	1000	1010	101	68-131	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

MATRIX SPIKE SAMPLE: 1264151

Parameter	Units	60154015002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	ND	1000	924	92	69-126	
Tetrachloroethene	ug/L	ND	1000	895	90	66-139	
Trichloroethene	ug/L	ND	1000	866	87	67-130	
Vinyl chloride	ug/L	ND	1000	464	46	47-159	M1
1,2-Dichloroethane-d4 (S)	%				98	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Toluene-d8 (S)	%				101	80-120	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

QC Batch: OEXT/40739 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B
Associated Lab Samples: 60154015001, 60154015002

METHOD BLANK: 1262785 Matrix: Water
Associated Lab Samples: 60154015001, 60154015002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/L	ND	0.50	10/01/13 16:03	
TPH-ORO (C28-C35)	mg/L	ND	0.50	10/01/13 16:03	
n-Tetracosane (S)	%	88	22-121	10/01/13 16:03	
p-Terphenyl (S)	%	86	28-127	10/01/13 16:03	

LABORATORY CONTROL SAMPLE: 1262786

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	mg/L	12.5	10.6	85	39-120	
TPH-ORO (C28-C35)	mg/L		ND			
n-Tetracosane (S)	%			88	22-121	
p-Terphenyl (S)	%			87	28-127	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

QC Batch: WET/43689
QC Batch Method: SW-846 7.3.4.2 Modified
Analysis Method: SW-846 7.3.4.2 Modified
Analysis Description: 734S Reactive Sulfide
Associated Lab Samples: 60154015001, 60154015002

METHOD BLANK: 1262541 Matrix: Water
Associated Lab Samples: 60154015001, 60154015002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Reactive	mg/L	ND	10.0	09/29/13 12:30	

LABORATORY CONTROL SAMPLE: 1262542

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/L	20	18.4	92	80-107	

MATRIX SPIKE SAMPLE: 1262543

Parameter	Units	60154015001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/L	ND	50	41.8	84	67-110	

SAMPLE DUPLICATE: 1262544

Parameter	Units	60154015002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Reactive	mg/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

QC Batch: WET/43648
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Associated Lab Samples: 60154015001, 60154015002

SAMPLE DUPLICATE: 1261101

Parameter	Units	60154015001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	8.2	8.2	0	10	H6

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

QC Batch: WETA/26401
QC Batch Method: SW-846 7.3.3.2 Modified
Analysis Method: SW-846 7.3.3.2 Modified
Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 60154015001, 60154015002

METHOD BLANK: 1262732 Matrix: Water
Associated Lab Samples: 60154015001, 60154015002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/L	ND	0.0050	09/30/13 11:21	

LABORATORY CONTROL SAMPLE: 1262733

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/L	.05	0.051	102	74-121	

MATRIX SPIKE SAMPLE: 1262734

Parameter	Units	60154015001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/L	ND	.05	0.050	99	57-125	

SAMPLE DUPLICATE: 1262735

Parameter	Units	60154015002 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Reactive	mg/L	ND	ND		26	

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QUALITY CONTROL DATA

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

QC Batch: WETA/26503 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60154015001, 60154015002

METHOD BLANK: 1266846 Matrix: Water
Associated Lab Samples: 60154015001, 60154015002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/07/13 10:15	

LABORATORY CONTROL SAMPLE: 1266847

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1266848 1266849

Parameter	Units	60153012001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	85.0	50	50	135	135	99	99	80-120	0	15	

SAMPLE DUPLICATE: 1266850

Parameter	Units	60153012002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	32.9	32.1	2	15	

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QUALIFIERS

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: GCV/4500

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: OEXT/40739

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 COP San Juan 32-H 30
Pace Project No.: 60154015

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60154015001	074922-092413KW-FT-CSP	EPA 3510C	OEXT/40739	EPA 8015B	GCSV/15535
60154015002	074922-092413KW-FT-112	EPA 3510C	OEXT/40739	EPA 8015B	GCSV/15535
60154015001	074922-092413KW-FT-CSP	EPA 5030B/8015B	GCV/4500		
60154015002	074922-092413KW-FT-112	EPA 5030B/8015B	GCV/4500		
60154015001	074922-092413KW-FT-CSP	EPA 3010	MPRP/24531	EPA 6010	ICP/19100
60154015002	074922-092413KW-FT-112	EPA 3010	MPRP/24531	EPA 6010	ICP/19100
60154015001	074922-092413KW-FT-CSP	EPA 7470	MERP/7766	EPA 7470	MERC/7723
60154015002	074922-092413KW-FT-112	EPA 7470	MERP/7766	EPA 7470	MERC/7723
60154015001	074922-092413KW-FT-CSP	EPA 8260	MSV/56711		
60154015002	074922-092413KW-FT-112	EPA 8260	MSV/56711		
60154015001	074922-092413KW-FT-CSP	EPA 1010	WET/43749		
60154015002	074922-092413KW-FT-112	EPA 1010	WET/43749		
60154015001	074922-092413KW-FT-CSP	SW-846 7.3.4.2 Modified	WET/43689		
60154015002	074922-092413KW-FT-112	SW-846 7.3.4.2 Modified	WET/43689		
60154015001	074922-092413KW-FT-CSP	EPA 9040	WET/43648		
60154015002	074922-092413KW-FT-112	EPA 9040	WET/43648		
60154015001	074922-092413KW-FT-CSP	SW-846 7.3.3.2 Modified	WETA/26401		
60154015002	074922-092413KW-FT-112	SW-846 7.3.3.2 Modified	WETA/26401		
60154015001	074922-092413KW-FT-CSP	EPA 9056	WETA/26503		
60154015002	074922-092413KW-FT-112	EPA 9056	WETA/26503		

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October 11, 2013

Chris Fetters
CRA COP
5551 Corporate Blvd Ste 200
Baton Rouge, LA 70808

RE: Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60155025

Dear Chris Fetters:
Enclosed are the analytical results for sample(s) received by the laboratory on October 09, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Debbie Brennan, CRA
Joe Kraska, CRA COP
Kelly Williams, COP CRA LA

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CERTIFICATIONS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60155025

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60155025

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60155025001	**074922-100313MH-FT-229**	Water	10/03/13 11:40	10/09/13 08:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60155025

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60155025001	**074922-100313MH-FT-229**	SM 4500-H+B	DJR	1	PASI-K

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SUMMARY OF DETECTION

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60155025

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
60155025001	**074922-100313MH-FT-229**					
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	10/11/13 10:45	H6

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PROJECT NARRATIVE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60155025

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: COP CRA LA
Date: October 11, 2013

General Information:
1 sample was analyzed for SM 4500-H+B. 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.

H6: Analysis initiated outside of the 15 minute EPA recommended holding time.
- 074922-100313MH-FT-229 (Lab ID: 60155025001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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.

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ANALYTICAL RESULTS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60155025

Sample: 074922-100313MH-FT-229 **Lab ID: 60155025001** Collected: 10/03/13 11:40 Received: 10/09/13 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		10/11/13 10:45		H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60155025

QC Batch: WET/43959
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60155025001

SAMPLE DUPLICATE: 1269955

Parameter	Units	60155025001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	5	H6

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QUALIFIERS

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60155025

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 COP SAN JUAN 32-H 30
Pace Project No.: 60155025

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60155025001	**074922-100313MH-FT-229**	SM 4500-H+B	WET/43959		

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November 27, 2012

Hector Narez
COP Conestoga-Rovers & Associa
5551 Corporate Blvd. Suite 200
Baton Rouge, LA 70808

RE: Project: San Juan 32-8 #30
Pace Project No.: 60133494

Dear Hector Narez:
Enclosed are the analytical results for sample(s) received by the laboratory on November 15, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Joshua Kirchner, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: San Juan 32-8 #30
Pace Project No.: 60133494

Indiana Certification IDs
7726 Moller Road, Indianapolis, IN 46268
Illinois Certification #: 200074
Indiana Certification #: C-49-06
Kansas Certification #: E-10247
Kentucky Certification #: 0042
Louisiana/NELAC Certification #: 04076
Ohio VAP Certification #: CL0065
Pennsylvania Certification #: 68-04991
West Virginia Certification #: 330

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 12-019-0
Illinois Certification #: 002885
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-12-3
Utah Certification #: KS000212012-2

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SAMPLE SUMMARY

Project: San Juan 32-8 #30
Pace Project No.: 60133494

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60133494001	S-074922-111412-JK-SOLID WASTE	Solid	11/14/12 09:00	11/15/12 08:30
60133494002	L-074922-111412-JK-LIQ WASTE	Water	11/14/12 09:30	11/15/12 08:30

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SAMPLE ANALYTE COUNT

Project: San Juan 32-8 #30
Pace Project No.: 60133494

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60133494001	**S-074922-111412-JK-SOLID WASTE**	EPA 8015B	NAW	5	PASI-K
		EPA 8015 Mod Pur	AMV	2	PASI-I
		EPA 6010	JGP	7	PASI-K
		EPA 7470	NDJ	1	PASI-K
		OA1	RAB	3	PASI-K
		EPA 8260	RAB	14	PASI-K
		ASTM D2974	DWC	1	PASI-K
		SW-846 7.3.4.2	SEL	1	PASI-K
		EPA 9045	NDL	1	PASI-K
		ASTM D92	OL	1	PASI-K
		SW-846 7.3.3.2	OL	1	PASI-K
60133494002	**L-074922-111412-JK-LIQ WASTE**	EPA 8015B	NAW	5	PASI-K
		EPA 5030/8015 Mod.	AMV	2	PASI-I
		EPA 6010	JGP	7	PASI-K
		EPA 7470	NDJ	1	PASI-K
		EPA 8260	RAB	14	PASI-K
		EPA 8260/OA1	JTK	5	PASI-K
		EPA 1010	OL	1	PASI-K
		SW-846 7.3.4.2 Modified	SEL	1	PASI-K
		EPA 9040	NDL	1	PASI-K
		SW-846 7.3.3.2 Modified	OL	1	PASI-K

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ANALYTICAL RESULTS

Project: San Juan 32-8 #30
Pace Project No.: 60133494

Sample: S-074922-111412-JK-SOLID WASTE **Lab ID: 60133494001** Collected: 11/14/12 09:00 Received: 11/15/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546							
TPH-DRO (C10-C28)	**84.9**	mg/kg	12.2	1	11/16/12 00:00	11/16/12 22:50		
TPH-ORO (C28-C35)	**25.7**	mg/kg	12.2	1	11/16/12 00:00	11/16/12 22:50		
TPH-Total (C10-C32)	**98.7**	mg/kg	12.2	1	11/16/12 00:00	11/16/12 22:50		
Surrogates								
n-Tetracosane (S)	100	%	20-159	1	11/16/12 00:00	11/16/12 22:50	646-31-1	
p-Terphenyl (S)	96	%	24-147	1	11/16/12 00:00	11/16/12 22:50	92-94-4	
8015 Gasoline Range Organics	Analytical Method: EPA 8015 Mod Pur							
TPH (C06-C10)	ND	mg/kg	1.2	1		11/22/12 01:56		
Surrogates								
4-Bromofluorobenzene (S)	110	%.	30-163	1		11/22/12 01:56	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Leachate Method/Date: EPA 1311; 11/15/12 00:00							
Arsenic	ND	mg/L	0.50	1	11/16/12 07:35	11/19/12 16:54	7440-38-2	
Barium	**2.6**	mg/L	2.5	1	11/16/12 07:35	11/19/12 16:54	7440-39-3	
Cadmium	ND	mg/L	0.050	1	11/16/12 07:35	11/19/12 16:54	7440-43-9	
Chromium	ND	mg/L	0.10	1	11/16/12 07:35	11/19/12 16:54	7440-47-3	
Lead	ND	mg/L	0.50	1	11/16/12 07:35	11/19/12 16:54	7439-92-1	
Selenium	ND	mg/L	0.50	1	11/16/12 07:35	11/19/12 16:54	7782-49-2	
Silver	ND	mg/L	0.10	1	11/16/12 07:35	11/19/12 16:54	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Leachate Method/Date: EPA 1311; 11/15/12 00:00							
Mercury	ND	mg/L	0.0020	1	11/16/12 15:15	11/19/12 10:14	7439-97-6	
OA1 Volatile Pet. Hydrocarbons	Analytical Method: OA1							
Gasoline Range Organics	ND	mg/kg	1.2	1		11/20/12 11:24		
Surrogates								
4-Bromofluorobenzene (S)	100	%	78-125	1		11/20/12 11:24	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	73-135	1		11/20/12 11:24	17060-07-0	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 11/16/12 00:00							
Benzene	ND	ug/L	50.0	1		11/20/12 07:38	71-43-2	
2-Butanone (MEK)	ND	ug/L	1000	1		11/20/12 07:38	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	1		11/20/12 07:38	56-23-5	
Chlorobenzene	ND	ug/L	50.0	1		11/20/12 07:38	108-90-7	
Chloroform	ND	ug/L	200	1		11/20/12 07:38	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	1		11/20/12 07:38	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	1		11/20/12 07:38	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	1		11/20/12 07:38	127-18-4	
Trichloroethene	ND	ug/L	50.0	1		11/20/12 07:38	79-01-6	
Vinyl chloride	ND	ug/L	100	1		11/20/12 07:38	75-01-4	

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ANALYTICAL RESULTS

Project: San Juan 32-8 #30
Pace Project No.: 60133494

Sample: S-074922-111412-JK-SOLID WASTE **Lab ID: 60133494001** Collected: 11/14/12 09:00 Received: 11/15/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 11/16/12 00:00							
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	80-120	1		11/20/12 07:38	17060-07-0	
Toluene-d8 (S)	100	%	80-120	1		11/20/12 07:38	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120	1		11/20/12 07:38	460-00-4	
Dibromofluoromethane (S)	102	%	80-120	1		11/20/12 07:38	1868-53-7	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**18.3**	%	0.50	1		11/16/12 00:00		
Reactive Sulfide	Analytical Method: SW-846 7.3.4.2							
Sulfide, Reactive	ND	mg/kg	40.0	1		11/20/12 15:00		
9045 pH Soil	Analytical Method: EPA 9045							
pH at 25 Degrees C	**8.8**	Std. Units	0.10	1		11/20/12 08:58		
Flashpoint, Open Cup	Analytical Method: ASTM D92							
Flashpoint	**>210**	deg F		1		11/16/12 15:00		
733C S Reactive Cyanide	Analytical Method: SW-846 7.3.3.2							
Cyanide, Reactive	ND	mg/kg	0.025	1		11/19/12 09:16		

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ANALYTICAL RESULTS

Project: San Juan 32-8 #30
Pace Project No.: 60133494

Sample: L-074922-111412-JK-LIQ WASTE **Lab ID: 60133494002** Collected: 11/14/12 09:30 Received: 11/15/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	**0.64**	mg/L	0.50	1	11/16/12 00:00	11/16/12 19:35		
TPH-DRO (C10-C28)	**0.64**	mg/L	0.50	1	11/16/12 00:00	11/16/12 19:35		
TPH-ORO (C28-C35)	ND	mg/L	0.50	1	11/16/12 00:00	11/16/12 19:35		
Surrogates								
p-Terphenyl (S)	70	%	35-121	1	11/16/12 00:00	11/16/12 19:35	92-94-4	
n-Tetracosane (S)	73	%	35-120	1	11/16/12 00:00	11/16/12 19:35	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030/8015 Mod.							
TPH (C06-C10)	ND	mg/L	0.20	1		11/22/12 08:15		
Surrogates								
4-Bromofluorobenzene (S)	80	%.	45-130	1		11/22/12 08:15	460-00-4	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Leachate Method/Date: EPA 1311; 11/15/12 00:00							
Arsenic	ND	mg/L	0.50	1	11/16/12 07:35	11/19/12 16:59	7440-38-2	
Barium	ND	mg/L	2.5	1	11/16/12 07:35	11/19/12 16:59	7440-39-3	
Cadmium	ND	mg/L	0.050	1	11/16/12 07:35	11/19/12 16:59	7440-43-9	
Chromium	ND	mg/L	0.10	1	11/16/12 07:35	11/19/12 16:59	7440-47-3	
Lead	ND	mg/L	0.50	1	11/16/12 07:35	11/19/12 16:59	7439-92-1	
Selenium	ND	mg/L	0.50	1	11/16/12 07:35	11/19/12 16:59	7782-49-2	
Silver	ND	mg/L	0.10	1	11/16/12 07:35	11/19/12 16:59	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Leachate Method/Date: EPA 1311; 11/15/12 00:00							
Mercury	ND	mg/L	0.0020	1	11/16/12 15:15	11/19/12 10:16	7439-97-6	
8260 MSV TCLP	Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 11/16/12 00:00							
Benzene	ND	ug/L	50.0	1		11/20/12 07:53	71-43-2	
2-Butanone (MEK)	ND	ug/L	1000	1		11/20/12 07:53	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	1		11/20/12 07:53	56-23-5	
Chlorobenzene	ND	ug/L	50.0	1		11/20/12 07:53	108-90-7	
Chloroform	ND	ug/L	200	1		11/20/12 07:53	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	1		11/20/12 07:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	1		11/20/12 07:53	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	1		11/20/12 07:53	127-18-4	
Trichloroethene	ND	ug/L	50.0	1		11/20/12 07:53	79-01-6	
Vinyl chloride	ND	ug/L	100	1		11/20/12 07:53	75-01-4	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	80-120	1		11/20/12 07:53	17060-07-0	
Toluene-d8 (S)	100	%	80-120	1		11/20/12 07:53	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120	1		11/20/12 07:53	460-00-4	
Dibromofluoromethane (S)	97	%	80-120	1		11/20/12 07:53	1868-53-7	
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Gasoline Range Organics	ND	mg/L	0.50	1		11/20/12 13:18		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: San Juan 32-8 #30
Pace Project No.: 60133494

Sample: L-074922-111412-JK-LIQ WASTE **Lab ID: 60133494002** Collected: 11/14/12 09:30 Received: 11/15/12 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Surrogates								
Dibromofluoromethane (S)	104	%	80-120	1		11/20/12 13:18	1868-53-7	
Toluene-d8 (S)	94	%	80-120	1		11/20/12 13:18	2037-26-5	
4-Bromofluorobenzene (S)	97	%	80-120	1		11/20/12 13:18	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	80-120	1		11/20/12 13:18	17060-07-0	
1010 Flashpoint,Closed Cup	Analytical Method: EPA 1010							
Flashpoint	**>210**	deg F	78.0	1		11/19/12 14:00		
734S Reactive Sulfide	Analytical Method: SW-846 7.3.4.2 Modified							
Sulfide, Reactive	ND	mg/L	4.0	1		11/20/12 15:30		
9040 pH	Analytical Method: EPA 9040							
pH	**10.8**	Std. Units	0.10	1		11/20/12 09:30		H6
733C Reactive Cyanide	Analytical Method: SW-846 7.3.3.2 Modified							
Cyanide, Reactive	ND	mg/L	0.0050	1		11/19/12 09:12		

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: GCV/16024
QC Batch Method: EPA 8015 Mod Pur
Analysis Method: EPA 8015 Mod Pur
Analysis Description: 8015 Solid GCV
Associated Lab Samples: 60133494001

METHOD BLANK: 834791 Matrix: Solid
Associated Lab Samples: 60133494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C06-C10)	mg/kg	ND	1.0	11/21/12 20:28	
4-Bromofluorobenzene (S)	%.	103	30-163	11/21/12 20:28	

LABORATORY CONTROL SAMPLE: 834792

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C10)	mg/kg	10	10.9	109	87-123	
4-Bromofluorobenzene (S)	%.			102	30-163	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 834793 834794

Parameter	Units	60133327001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C10)	mg/kg	ND	7.1	7.4	7.1	8.2	100	111	15-124	14	20	
4-Bromofluorobenzene (S)	%.						111	108	30-163		20	

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: GCV/16025
QC Batch Method: EPA 5030/8015 Mod.
Analysis Method: EPA 5030/8015 Mod.
Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60133494002

METHOD BLANK: 834795 Matrix: Water
Associated Lab Samples: 60133494002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C06-C10)	mg/L	ND	0.20	11/22/12 07:50	
4-Bromofluorobenzene (S)	%.	102	45-130	11/22/12 07:50	

LABORATORY CONTROL SAMPLE: 834796

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C10)	mg/L	10	11.4	114	82-118	
4-Bromofluorobenzene (S)	%.			98	45-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 834797 834798

Parameter	Units	5072618004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C10)	mg/L	ND	10	10	7.8	10.3	78	103	40-122	27	20	R1
4-Bromofluorobenzene (S)	%.						105	113	45-130		20	

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: MERP/6836
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 60133494001, 60133494002

METHOD BLANK: 1100508 Matrix: Water
Associated Lab Samples: 60133494001, 60133494002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	11/19/12 09:59	

LABORATORY CONTROL SAMPLE: 1100509

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.005	0.0049	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1100510 1100511

Parameter	Units	60133495002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.015	.015	0.015	0.015	101	98	75-125	4	20	

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: MPRP/20531
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET TCLP
Associated Lab Samples: 60133494001, 60133494002

METHOD BLANK: 1101358 Matrix: Water
Associated Lab Samples: 60133494001, 60133494002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.50	11/19/12 16:28	
Barium	mg/L	ND	2.5	11/19/12 16:28	
Cadmium	mg/L	ND	0.050	11/19/12 16:28	
Chromium	mg/L	ND	0.10	11/19/12 16:28	
Lead	mg/L	ND	0.50	11/19/12 16:28	
Selenium	mg/L	ND	0.50	11/19/12 16:28	
Silver	mg/L	ND	0.10	11/19/12 16:28	

LABORATORY CONTROL SAMPLE: 1101359

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	1	0.98	98	80-120	
Barium	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	1	0.96	96	80-120	
Lead	mg/L	1	1.0	102	80-120	
Selenium	mg/L	1	0.99	99	80-120	
Silver	mg/L	.5	0.48	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1101360 1101361

Parameter	Units	60133267001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	10	9.9	100	99	75-125	1	20	
Barium	mg/L	ND	10	10	11.3	11.2	101	100	75-125	1	20	
Cadmium	mg/L	ND	10	10	9.8	9.7	98	97	75-125	1	20	
Chromium	mg/L	ND	10	10	9.7	9.7	97	97	75-125	0	20	
Lead	mg/L	ND	10	10	9.7	9.6	97	95	75-125	1	20	
Selenium	mg/L	ND	10	10	10.0	9.9	100	99	75-125	1	20	
Silver	mg/L	ND	5	5	4.9	4.8	97	97	75-125	1	20	

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: MSV/50266
QC Batch Method: OA1
Analysis Method: OA1
Analysis Description: OA1 Volatile Pet. Hydrocarbon
Associated Lab Samples: 60133494001

METHOD BLANK: 1101984 Matrix: Solid
Associated Lab Samples: 60133494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	1.0	11/20/12 11:08	
1,2-Dichloroethane-d4 (S)	%	100	73-135	11/20/12 11:08	
4-Bromofluorobenzene (S)	%	99	78-125	11/20/12 11:08	

LABORATORY CONTROL SAMPLE: 1101985

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	4	4.1	104	63-138	
1,2-Dichloroethane-d4 (S)	%			101	73-135	
4-Bromofluorobenzene (S)	%			100	78-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1102079 1102080

Parameter	Units	60133494001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	4.9	4.8	5.3	4.0	105	81	40-145	28	30	
1,2-Dichloroethane-d4 (S)	%						101	105	73-135			
4-Bromofluorobenzene (S)	%						98	98	78-125			

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: MSV/50259
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 60133494001, 60133494002

METHOD BLANK: 1101653 Matrix: Water
Associated Lab Samples: 60133494001, 60133494002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	11/20/12 06:20	
1,2-Dichloroethane	ug/L	ND	50.0	11/20/12 06:20	
2-Butanone (MEK)	ug/L	ND	1000	11/20/12 06:20	
Benzene	ug/L	ND	50.0	11/20/12 06:20	
Carbon tetrachloride	ug/L	ND	50.0	11/20/12 06:20	
Chlorobenzene	ug/L	ND	50.0	11/20/12 06:20	
Chloroform	ug/L	ND	200	11/20/12 06:20	
Tetrachloroethene	ug/L	ND	50.0	11/20/12 06:20	
Trichloroethene	ug/L	ND	50.0	11/20/12 06:20	
Vinyl chloride	ug/L	ND	100	11/20/12 06:20	
1,2-Dichloroethane-d4 (S)	%	100	80-120	11/20/12 06:20	
4-Bromofluorobenzene (S)	%	99	80-120	11/20/12 06:20	
Dibromofluoromethane (S)	%	102	80-120	11/20/12 06:20	
Toluene-d8 (S)	%	100	80-120	11/20/12 06:20	

LABORATORY CONTROL SAMPLE: 1101654

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	1000	1050	105	68-120	
1,2-Dichloroethane	ug/L	1000	1040	104	72-123	
2-Butanone (MEK)	ug/L	5000	5380	108	40-160	
Benzene	ug/L	1000	1020	102	74-123	
Carbon tetrachloride	ug/L	1000	991	99	74-126	
Chlorobenzene	ug/L	1000	1010	101	80-120	
Chloroform	ug/L	1000	871	87	77-120	
Tetrachloroethene	ug/L	1000	933	93	78-121	
Trichloroethene	ug/L	1000	976	98	74-120	
Vinyl chloride	ug/L	1000	1160	116	50-140	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Dibromofluoromethane (S)	%			103	80-120	
Toluene-d8 (S)	%			101	80-120	

MATRIX SPIKE SAMPLE: 1101655

Parameter	Units	60133305001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	1000	998	100	51-140	
1,2-Dichloroethane	ug/L	ND	1000	1040	104	52-146	
2-Butanone (MEK)	ug/L	ND	5000	6240	107	40-138	
Benzene	ug/L	ND	1000	1030	99	40-155	

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

MATRIX SPIKE SAMPLE: 1101655

Parameter	Units	60133305001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	ND	1000	966	97	60-154	
Chlorobenzene	ug/L	ND	1000	1020	102	54-141	
Chloroform	ug/L	ND	1000	851	85	59-138	
Tetrachloroethene	ug/L	ND	1000	928	93	54-152	
Trichloroethene	ug/L	ND	1000	963	96	51-146	
Vinyl chloride	ug/L	ND	1000	881	88	40-160	
1,2-Dichloroethane-d4 (S)	%				99	80-120	
4-Bromofluorobenzene (S)	%				99	80-120	
Dibromofluoromethane (S)	%				102	80-120	
Toluene-d8 (S)	%				101	80-120	

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: MSV/50267
QC Batch Method: EPA 8260/OA1
Analysis Method: EPA 8260/OA1
Analysis Description: 8260/OA1 UST-WATER
Associated Lab Samples: 60133494002

METHOD BLANK: 1101986 Matrix: Water
Associated Lab Samples: 60133494002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/L	ND	0.50	11/20/12 13:02	
1,2-Dichloroethane-d4 (S)	%	97	80-120	11/20/12 13:02	
4-Bromofluorobenzene (S)	%	91	80-120	11/20/12 13:02	
Dibromofluoromethane (S)	%	98	80-120	11/20/12 13:02	
Toluene-d8 (S)	%	99	80-120	11/20/12 13:02	

LABORATORY CONTROL SAMPLE: 1101987

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/L	4	3.7	94	65-136	
1,2-Dichloroethane-d4 (S)	%			97	80-120	
4-Bromofluorobenzene (S)	%			96	80-120	
Dibromofluoromethane (S)	%			100	80-120	
Toluene-d8 (S)	%			98	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: OEXT/36030
QC Batch Method: EPA 3546
Analysis Method: EPA 8015B
Analysis Description: EPA 8015B
Associated Lab Samples: 60133494001

METHOD BLANK: 1099943 Matrix: Solid
Associated Lab Samples: 60133494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/kg	ND	9.9	11/16/12 21:22	
TPH-ORO (C28-C35)	mg/kg	ND	9.9	11/16/12 21:22	
TPH-Total (C10-C32)	mg/kg	ND	9.9	11/16/12 21:22	
n-Tetracosane (S)	%	87	20-159	11/16/12 21:22	
p-Terphenyl (S)	%	85	24-147	11/16/12 21:22	

LABORATORY CONTROL SAMPLE: 1099944

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-Total (C10-C32)	mg/kg	82.9	84.5	102	64-120	
n-Tetracosane (S)	%			93	20-159	
p-Terphenyl (S)	%			85	24-147	CL

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1099945 1099946

Parameter	Units	60133494001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-DRO (C10-C28)	mg/kg	84.9			163	152				7		
TPH-ORO (C28-C35)	mg/kg	25.7			21.7	22.0				1		
TPH-Total (C10-C32)	mg/kg	98.7	101	102	180	159	80	59	10-150	12	45	
n-Tetracosane (S)	%						98	97	20-159			
p-Terphenyl (S)	%						96	94	24-147			

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: OEXT/36031
QC Batch Method: EPA 3510C
Analysis Method: EPA 8015B
Analysis Description: EPA 8015B
Associated Lab Samples: 60133494002

METHOD BLANK: 1099947 Matrix: Water
Associated Lab Samples: 60133494002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	0.50	11/16/12 19:21	
TPH-DRO (C10-C28)	mg/L	ND	0.50	11/16/12 19:21	
TPH-ORO (C28-C35)	mg/L	ND	0.50	11/16/12 19:21	
n-Tetracosane (S)	%	64	35-120	11/16/12 19:21	
p-Terphenyl (S)	%	64	35-121	11/16/12 19:21	

LABORATORY CONTROL SAMPLE: 1099948

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	25	21.3	85	56-120	
TPH-DRO (C10-C28)	mg/L		ND			
TPH-ORO (C28-C35)	mg/L		ND			
n-Tetracosane (S)	%			75	35-120	
p-Terphenyl (S)	%			74	35-121	

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: PMST/7994
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60133494001

METHOD BLANK: 1100015
Matrix: Solid
Associated Lab Samples: 60133494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	11/16/12 00:00	

SAMPLE DUPLICATE: 1100016

Parameter	Units	60133494001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.3	15.3	17	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: WET/38371
QC Batch Method: SW-846 7.3.4.2 Modified
Analysis Method: SW-846 7.3.4.2 Modified
Analysis Description: 734S Reactive Sulfide
Associated Lab Samples: 60133494002

METHOD BLANK: 1102377 Matrix: Water
Associated Lab Samples: 60133494002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Reactive	mg/L	ND	10.0	11/20/12 15:30	

LABORATORY CONTROL SAMPLE: 1102378

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/L	20	16.4	82	80-107	

MATRIX SPIKE SAMPLE: 1102379

Parameter	Units	60133494002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/L	ND	20	16.4	80	67-110	

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: WET/38372
QC Batch Method: SW-846 7.3.4.2
Analysis Method: SW-846 7.3.4.2
Analysis Description: Reactive Sulfide
Associated Lab Samples: 60133494001

METHOD BLANK: 1102386 Matrix: Solid
Associated Lab Samples: 60133494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Reactive	mg/kg	ND	100	11/20/12 15:00	

LABORATORY CONTROL SAMPLE: 1102387

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/kg	200	164	82	77-110	

MATRIX SPIKE SAMPLE: 1102388

Parameter	Units	60133494001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/kg	ND	200	164	80	67-116	

SAMPLE DUPLICATE: 1102389

Parameter	Units	10212056001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Reactive	mg/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: WET/38330
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Associated Lab Samples: 60133494002

SAMPLE DUPLICATE: 1101607

Parameter	Units	60133287001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	9.9	9.9	0	10	H6

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Attachment J

BART Test Information Sheet and Photo Log of BART Test

SRB-BART™

For water and wastewater

Sulfate-Reducing bacteria are a group of anaerobic bacteria that generate hydrogen sulfide (H_2S). This product can cause a number of significant problems in water. Problems range from "rotten egg" odors to the blackening of equipment, slime formations, and the initiation of corrosive processes. SRB microorganisms are difficult to detect because they are anaerobic and tend to grow deep down within biofilms (slimes) as a part of a microbial community. SRB may not be present in the free-flowing water over the site of the fouling.

If SRB activity is present in the BART, sulfate is reduced to H_2S, which reacts with the diffusing ferrous iron to form black iron sulfide. This sulfide commonly forms either in the base (as black precipitates) and/or around the ball (as an irregular black ring).



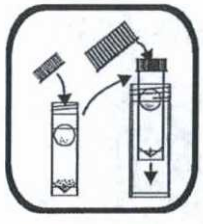
1. Remove the inner tube from the outer tube.



2. Using the outer tube from the BART, or a different sterile container, collect at least 20 mL of sample.
Note: Do not touch or contaminate the inside of the tube or lid. Use aseptic technique.



3. Fill the inner tube with sample until the level reaches the fill line.
Note: After removing the cap from the inner tube, set it down directly on a clean surface. To avoid contamination, do not invert the cap.



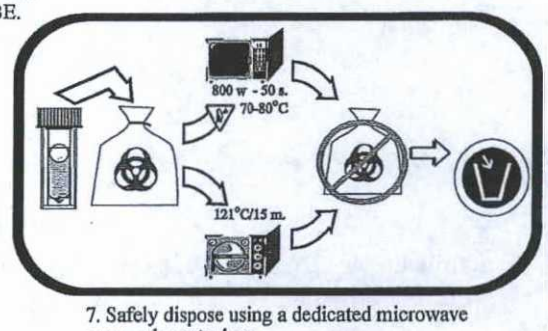
4. Tightly screw the cap back on the inner tube. Return the inner tube to the outer tube and screw the outer cap on tightly. Allow the ball to rise at its own speed.
DO NOT SHAKE OR SWIRL THE TUBE.



5. Label the outer tube with the date and sample origin.



6. Place the BART tube away from direct sunlight and allow to incubate at room temperature. Check the BART visually for reaction daily.



7. Safely dispose using a dedicated microwave oven or by autoclave.

HACH®
HACH Company
P.O. Box 389
Loveland, CO 80539-0389
Telephone: (970) 669-3050
Fax: (970) 669-2932

For Technical Assistance,
Price Information and Ordering:
In the U.S.A.
Call toll-free **800-227-4224**

In Europe, the Middle East, and Mediterranean Africa:
HACH Company, c/o Dr. Bruno Lange GmbH • Willstätterstr. 11 • D-40549 Düsseldorf, Germany
Telephone: +49/[0]211.52.88.0 • Fax: +49/[0]211.52.88.231

Certificate of Analysis

This certificate confirms that the BART™ product listed by name, lot number, and batch number has been subjected to the full range of Quality Control procedures as outlined in "User Quality Control Manual in support of the BART Biodetection Technologies" published in 2004 by Droycon Bioconcepts Inc.

BART™ Type: SRB-BART — Batch #: 0802-W,X

Release date*: Apr. 15, 2013 — Lot#: 0802-X

Shipment date: May 24, 2013 — Expiry date: April 2017

* Approval for release includes the following criteria: 1. confirmation of sterility for the vials and caps, 2. approval of the medium as being appropriately formed and acceptable, 3. is sterile, and 4. responds in a typical way to inoculation and incubation using selected defined microbial cultures. Details of these criteria are included in our Web Site.

This certificate confirms that the batch of the BART™ biodetectors listed have satisfactorily passed the QC screening procedures and were approved for release on the date given above

Certificate Number: 130524A

This certificate was issued by Droycon Bioconcepts Inc., 315 Dewdney Ave., Regina, SK., Canada, S4N 0E7 as an assurance that the product listed above has passed through the quality control procedures considered essential to the successful use of the testing device.

DBI ISO 9001:2000 Compliant

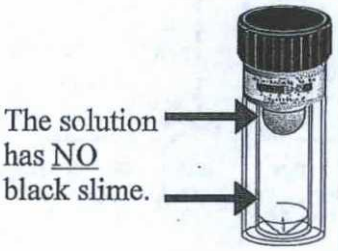
For more information, visit our web-site at:
http://www.DBI.ca

#8436

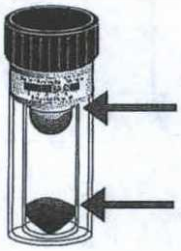
BART™ TEST FOR SRB
SULFATE REDUCING BACTERIA

Present/Absent - observe daily for 8 days.

ABSENT
(Negative - Non-aggressive)



PRESENT
(Positive - Aggressive)



1. View test each day for up to 15 days.

2. Observe any growths/color changes.

3. Compare with description(s).

*Note: Refer to page bottom for approximate population

Advanced test information.

Determination of Dominant Bacteria



BLACK only in BASE(**BB**) - Dense anaerobic SRB consortium.



BLACK only around BALL/TOP(**BT**) - Aerobic SRB consortium.

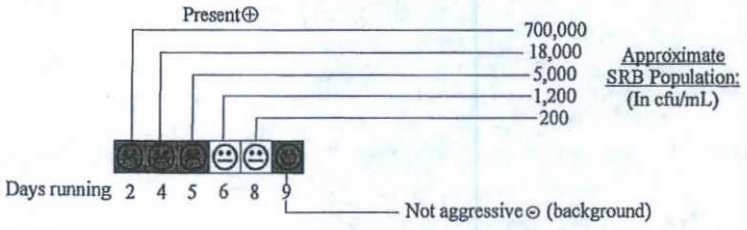


BLACK in BASE and around BALL - Combination of aerobic(**BT**) and anaerobic(**BB**) SRB.



Solution CLOUDY - Anaerobic bacteria present.

Determination of Potential SRB Population - observe daily for reaction.



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SRB-BART™ Technical Advisory

This advisory notifies users of the SRB-BART system for the detection of sulphate reducing bacteria that the standard maximum length for the monitoring of the reaction patterns is commonly ten (10) days. Operators using the SRB-BART tester for the detection of deep-seated SRB infestations in water systems associated with wells and distribution system may find it advantageous to continue observations until the fifteenth (15th) day. This is because some SRB do not exhibit reaction patterns (i.e. BT, or BB) until after other bacterial consortia have already grown within the tester (e.g. anaerobic bacteria). This delays the observation of a positive detection for the SRB. In water pipelines and biofouling water wells the time lags can be delayed until days 11 to 15. It is not possible to project the size of the SRB population but this extension of the testing period can be used to determine the presence / absence of the SRB when they are present in environments either in very low numbers or in a consortial association with other microbial species. It can be expected that where routine monitoring is being undertaken, sudden decreases in the time lags to 10 days or less can be taken to indicate that the SRB are becoming significantly more aggressive and may require corrective action (e.g. disinfection, pigging the lines etc).

Please submit any comments and concerns to: sales@dbi.ca

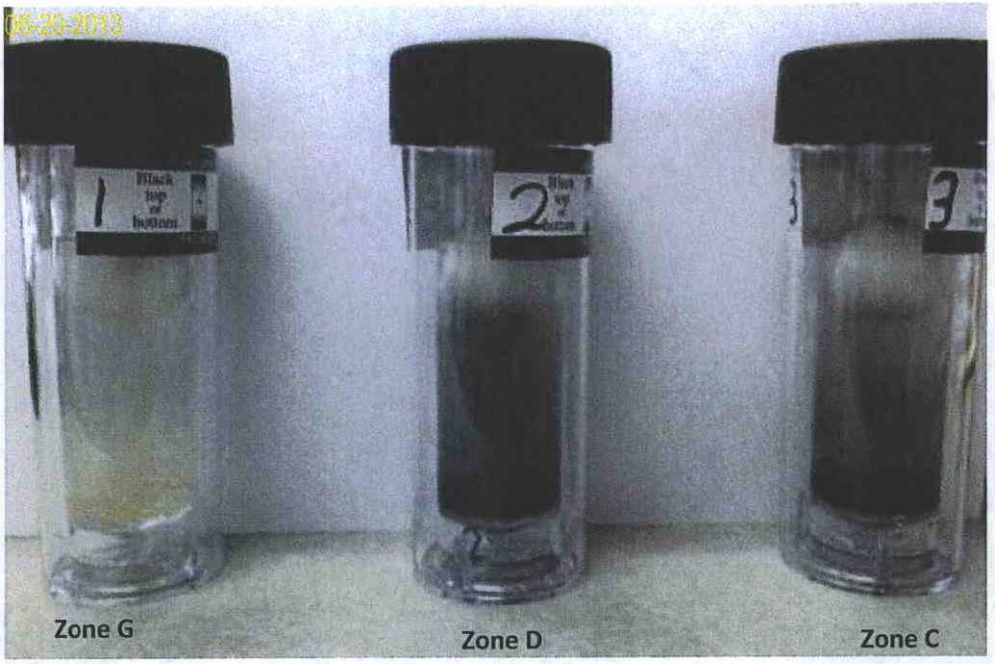

Photo 1: The results of the Biological Activity Reaction Test (BART) for the June 2013 sampling event at MW-1 Zones G, D and C indicate the presence of anaerobic SRB in Zones D and C greater than 700,000 CFU/ml. Picture was taken on June 20, 2013, two days after sample collection.

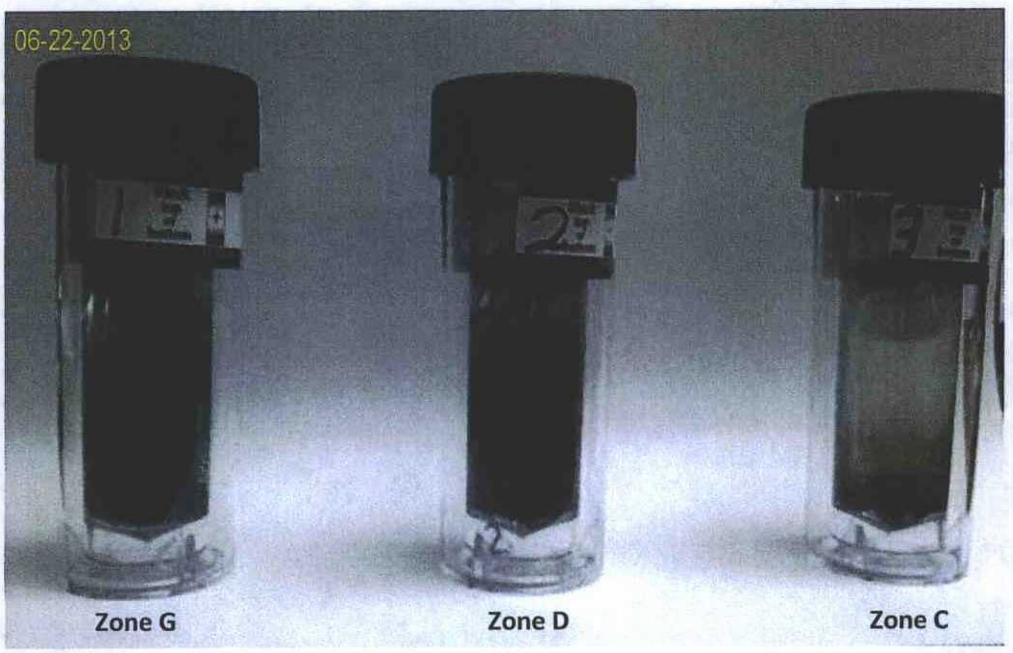

Photo 2: The results of the BART for the June 2013 sampling event at MW-1 Zones G, D and C indicate the presence of anaerobic SRB in Zone G at a concentration of 18,000 CFU/ml. Picture was taken on June 22, 2013, four days after sample collection.

SITE PHOTOGRAPHS

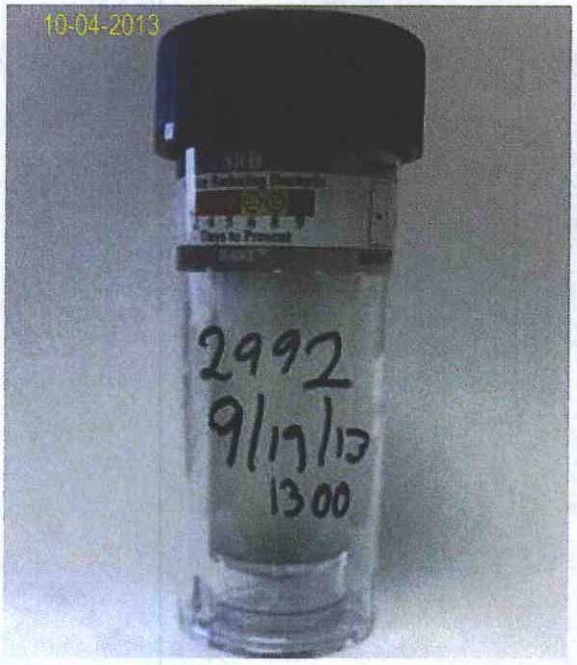

Photo 3: The results of the BART for the September 2013 sampling event at SJ 02992 indicate the presence of anaerobic SRB at a concentration of less than 200 CFU/ml. Picture was taken on October 4, 2013, fifteen days after sample collection.



Photo 4: The results of the BART for the September 2013 sampling event at SJ 03823P1 (cold faucet) indicate the presence of anaerobic SRB at a concentration of less than 200 CFU/ml. Picture was taken on September 30, 2013, eleven days after sample collection.

SITE PHOTOGRAPHS



Photo 5: The results of the BART for the September 2013 sampling event at SJ 03823P1 (hot faucet) indicate the presence of anaerobic SRB at a concentration of less than 200 CFU/ml. Picture was taken on October 4, 2013, fifteen days after sample collection.

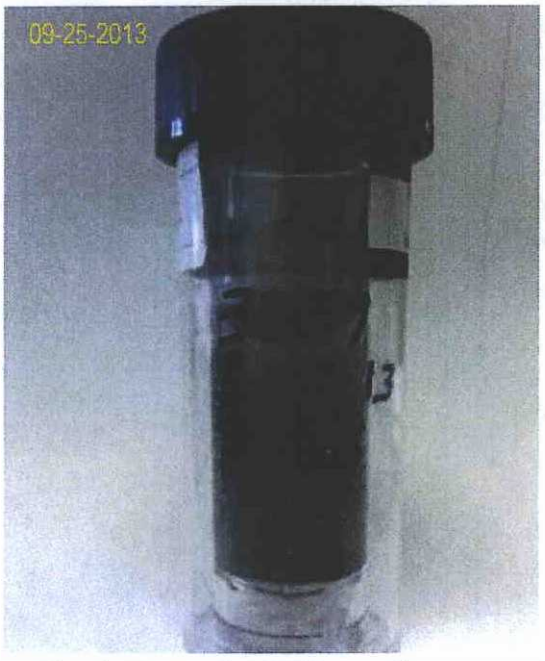

Photo 6: The results of the BART for the September 2013 sampling event at SJ 03259 indicate the presence of anaerobic SRB at a concentration of 1,200 CFU/ml. Picture was taken on September 25, 2013, six days after sample collection.

SITE PHOTOGRAPHS



Photo 7: The results of the BART for the September 2013 sampling event at MW-1 Zone G indicate the presence of anaerobic SRB at a concentration of 200 CFU/ml. Picture was taken on October 3, 2013, seven days after sample collection.



Photo 8: The results of the BART for the September 2013 sampling event at MW-1 Zone D indicate the presence of anaerobic SRB at a concentration of 1,200 CFU/ml. Picture was taken on October 2, 2013, six days after sample collection.

SITE PHOTOGRAPHS



Photo 9: The results of the BART for the October 2013 sampling event at MW-1 Zone C indicate the presence of anaerobic SRB at a concentration of 18,000 CFU/ml. Picture was taken on October 6, 2013, four days after sample collection.

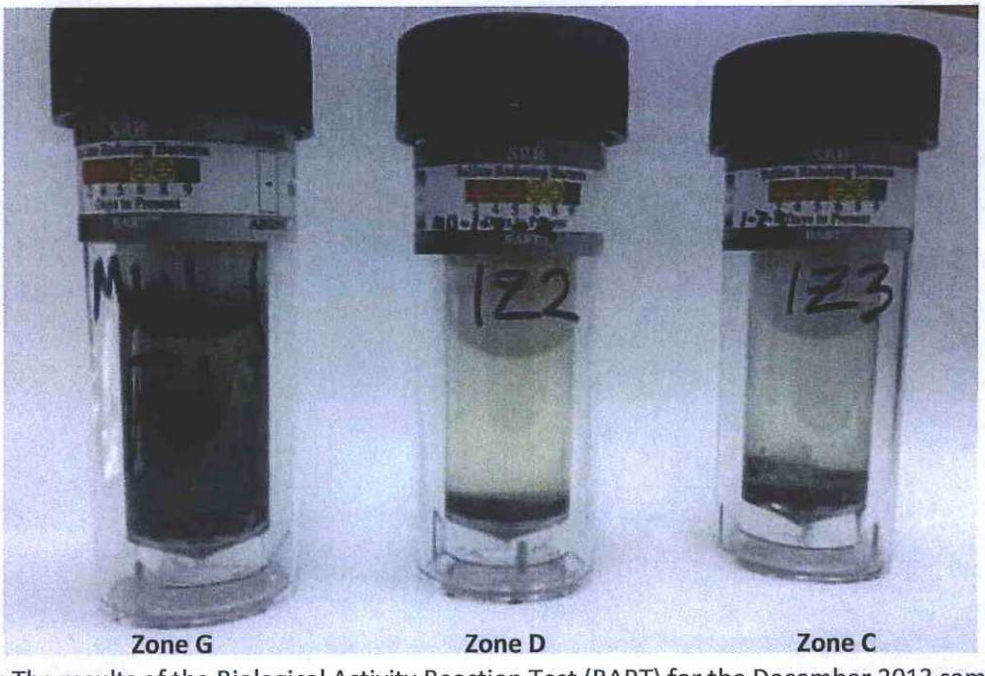

Photo 10: The results of the Biological Activity Reaction Test (BART) for the December 2013 sampling event at MW-1 indicate the presence of anaerobic SRB at concentrations of 5,000 CFU/ml in Zone G, 200 CFU/ml in Zone D, and 18,000 CFU/ml in Zone C.

SITE PHOTOGRAPHS

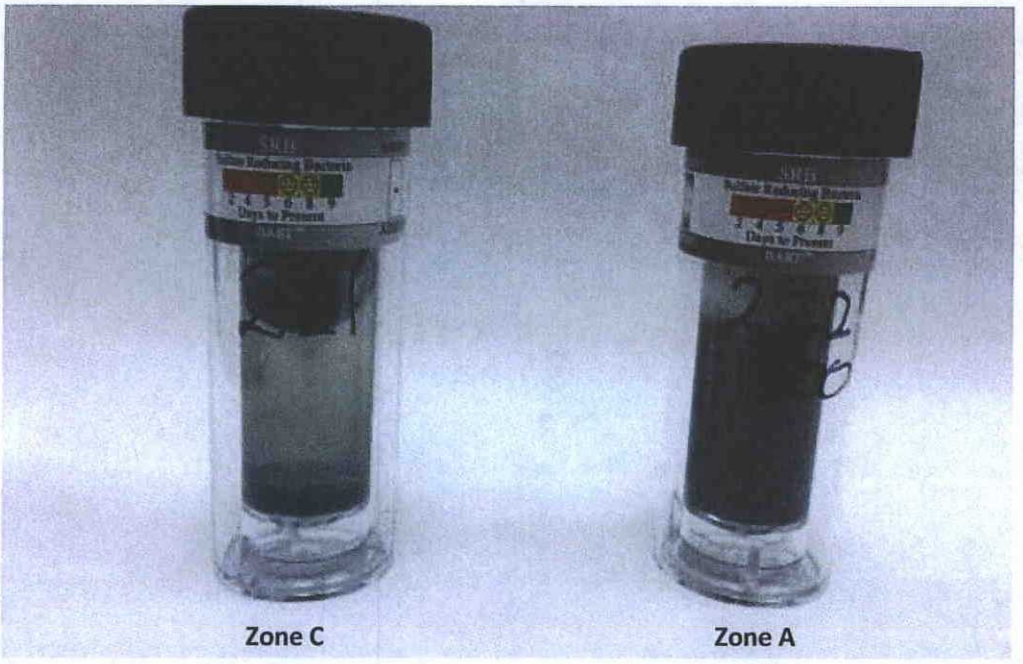

Photo 11: The results of the Biological Activity Reaction Test (BART) for the December 2013 sampling event at MW-2 indicate the presence of anaerobic SRB at concentrations less than 200 CFU/ml in Zone C and 1,200 CFU/ml in Zone A.

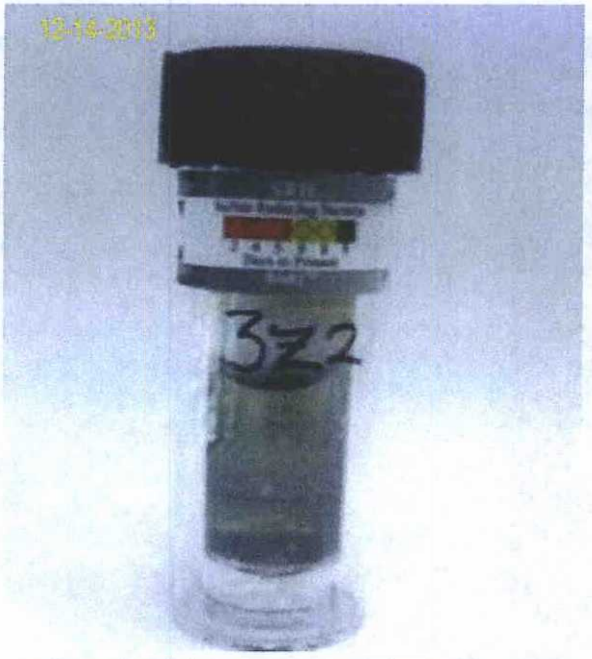

Photo 12: The results of the Biological Activity Reaction Test (BART) for the December 2013 sampling event at MW-3 indicate the presence of anaerobic SRB at a concentration less than 200 CFU/ml in Zone D. Picture was taken on December 14, 2013, nine days after sample collection.

SITE PHOTOGRAPHS

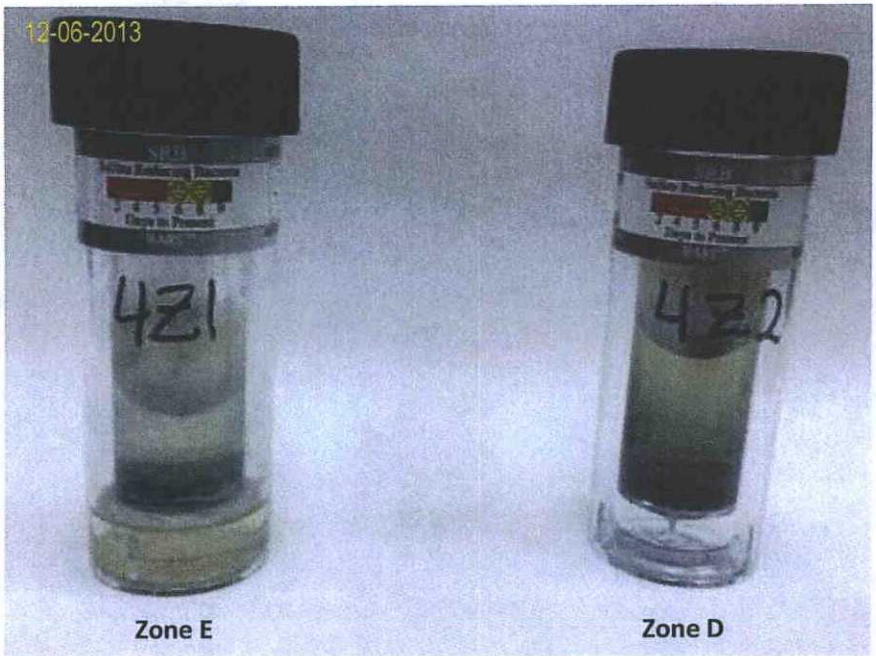

Photo 13: The results of the Biological Activity Reaction Test (BART) for the December 2013 sampling event at MW-4 indicate the presence of anaerobic SRB at concentrations greater than 700,000 CFU/ml in Zones E and D. Picture was taken on December 6, 2013, two days after sample collection.

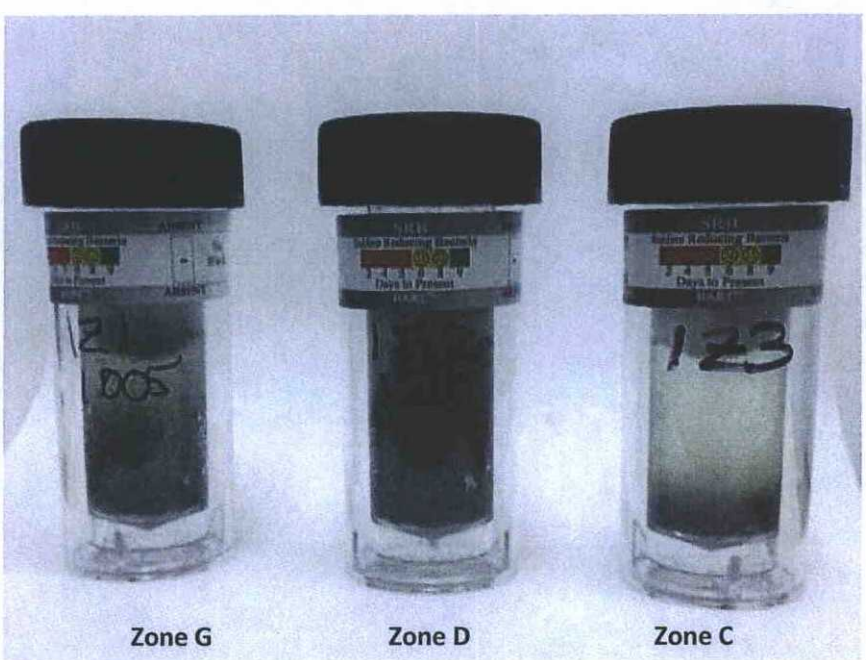

Photo 14: The results of the Biological Activity Reaction Test (BART) for the February 2014 sampling event at MW-1 indicate the presence of anaerobic SRB at concentrations of 200 CFU/ml in Zone G and 18,000 CFU/ml in Zones D and C.

SITE PHOTOGRAPHS



Photo 15: The results of the Biological Activity Reaction Test (BART) for the February 2014 sampling event at MW-2 indicate the presence of anaerobic SRB at a concentration 5,000 CFU/ml in Zone C. Picture was taken on February 24, 2014, five days after sample collection.



Photo 16: The results of the Biological Activity Reaction Test (BART) for the February 2014 sampling event at MW-3 indicate the presence of anaerobic SRB at concentrations less than 200 CFU/ml in Zone D. Picture was taken on February 28, 2014, nine days after sample collection.

SITE PHOTOGRAPHS

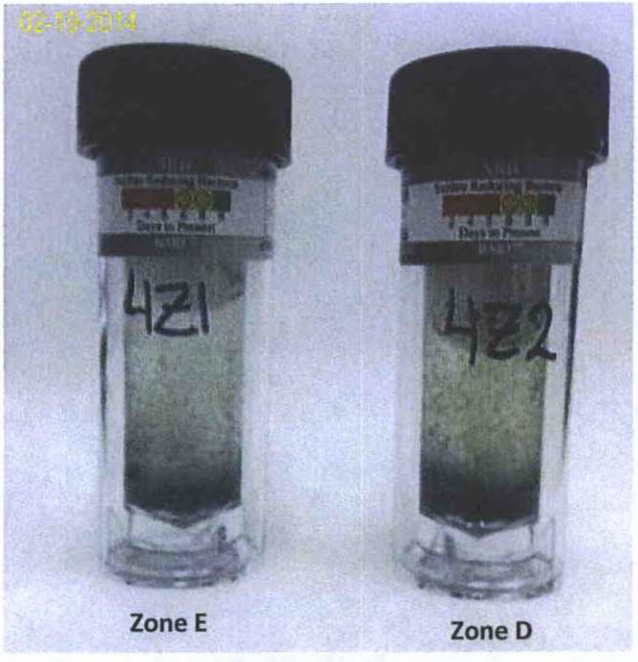

Photo 17: The results of the Biological Activity Reaction Test (BART) for the February 2014 sampling event at MW-4 indicate the presence of anaerobic SRB at concentrations greater than 700,000 CFU/ml in Zones E and D. Picture was taken on February 19, 2014, one day after sample collection.

Appendix A

Groundwater Sampling Forms

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 No. 202 JOB# 074922

SAMPLE ID: DW-074922-120111-CM-46 WELL# House #46 CR 4049

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED ~~(GALLONS)~~
12.1.11	12.1.11	09:45		1.5 quarts

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE) — Disposable

SAMPLING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE) — Disposable

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Domestic pump in place (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Domestic pump in place (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL		A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL		C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING		A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING		C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	0.45 micron for metals

FIELD MEASUREMENTS

* pump @ ~185 feet

DEPTH TO WATER	~180.00 (feet)	WELL ELEVATION	(feet)
WELL DEPTH	~200.00 (feet)	GROUNDWATER ELEVATION	(feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: none observed COLOR: Clear SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~40° WIND Y/N PRECIPITATION Y/N (IF Y TYPE)

SPECIFIC COMMENTS: Sampled @ source. Filtered. befor use @ residence

* very small volume of water available to pump. Only 1.5 quarts. Will attempt to complete sampling tomorrow after closing in well and allowing to re-charge.

36° 56.496, -107° 39.928

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE	PRINT	SIGNATURE
12.1.11	Christine Mathews	Christine Mathews

- Returned 12.2.11 to collect remainder of samples. No parameters collected due to low volume.
- No gas sample collected, well casing completely sealed & not able to access.

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 No. 202 JOB# 074922

SAMPLE ID: DW-074922-120111-CM-29 WELL# House #29

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12·1·11	12·1·11	1:50		8

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE) — disposable

SAMPLING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE) — disposable

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= domestic pump in place (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= domestic pump in place (SAMPLING DEVICE OTHER (SPECIFY))
		domestic well is 6 inch diameter			
PURGING MATERIAL	D	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	D	C - POLYPROPYLENE	X - OTHER		X= to spigot (SAMPLING MATERIAL OTHER (SPECIFY))
		- short section of clear pvc tubing connected			
PURGE TUBING	X	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PVC (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	X	C - ROPE	F - SILICONE	X - OTHER	X= PVC (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	0.45 micron for metals

FIELD MEASUREMENTS

*pump @ ~560

DEPTH TO WATER ~494.00 (feet) WELL ELEVATION (feet)

WELL DEPTH ~580.00 (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
10.54 (°C)	6.05 (std)	2.890 (g/L)	3272 (µS/cm)	182.4 (mV)	2 (gal)
11.03 (°C)	6.41 (std)	2.926 (g/L)	3305 (µS/cm)	158.4 (mV)	4 (gal)
11.18 (°C)	6.50 (std)	2.936 (g/L)	3327 (µS/cm)	151.4 (mV)	5 (gal)
11.28 (°C)	6.60 (std)	2.943 (g/L)	3343 (µS/cm)	146.8 (mV)	7.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: slight yellow to clear SHEEN Y/N No

WEATHER CONDITIONS: TEMPERATURE ~50° WINDY Y/N PRECIPITATION Y/N (IF Y TYPE) No

SPECIFIC COMMENTS: sampled @ source. Filtered before use @ residence.

36°56.740, -107°39.955 Turbidity = 3.1 ntus

- Tedlar bags for air sample collected on 12·1·11

- Summa canister for air sample collected on 12·2·11

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

12·2·11 (DATE) Christine Mathews (PRINT) (SIGNATURE)

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 No. 202 JOB# 074922

SAMPLE ID: DW-074922-120111-CM-D3 WELL# Domestic #3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12.1.11	12.1.11	1255		13

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE) Disposable

SAMPLING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE) Disposable

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Domestic pump in place (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Domestic pump in place (SAMPLING DEVICE OTHER (SPECIFY))
		domestic well is 6 inch diameter			
PURGING MATERIAL		A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL		C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING		A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING		C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	0.45 micron for metals

FIELD MEASUREMENTS

DEPTH TO WATER: Unknown (feet) WELL ELEVATION: (feet)

WELL DEPTH: ~380 to 400 (feet) GROUNDWATER ELEVATION: (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME (liters)
11.57 (°C)	7.17 (std)	0.867 (g/L)	990 (µS/cm)	191.0 (mV)	(gal)
11.30 (°C)	7.18 (std)	0.868 (g/L)	986 (µS/cm)	186.1 (mV)	27 (gal)
11.26 (°C)	7.20 (std)	0.868 (g/L)	985 (µS/cm)	173.3 (mV)	39 (gal)
11.21 (°C)	7.23 (std)	0.868 (g/L)	984 (µS/cm)	157.1 (mV)	51 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: Slight sulfur COLOR: Clear SHEEN Y/N: No

WEATHER CONDITIONS: TEMPERATURE ~50° WINDY Y/N: Yes PRECIPITATION Y/N (IF Y TYPE): No

SPECIFIC COMMENTS: It was stated that no water treatment was taking place @ the residence. Sample was collected from the faucet.

- purge started @ 12:37 - Turbidity = 0.8 ntus
- 3 liters/min purge - DO stable @ 5.08 mg/L

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE: 12.1.11 PRINT: Christine Mathews SIGNATURE: Christine Mathews

well location 36°57.177, -107°40.014

- Air sample collected on 12.2.11

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 No. 202 JOB# 074922

SAMPLE ID: PW-074922-120111-CM-202 WELL# San Juan 32-8 No. 202

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
N/A	12-1-11	1540	N/A	N/A

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT..... DEDICATED Y (N) (CIRCLE ONE) — Disposable

SAMPLING EQUIPMENT..... DEDICATED Y (N) (CIRCLE ONE) — Disposable

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	0.45 micron for metals

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slightly cloudy ODOR: none noticed COLOR: orange SHEEN Y/N No

WEATHER CONDITIONS: TEMPERATURE 44° WIND Y/N Yes PRECIPITATION Y/N (IF Y TYPE) _____

SPECIFIC COMMENTS:

- sample was collected w/ a bailer from the top of the produced water tank

36° 57.035, -107° 40.050

- Gas sample collected on 12-2-11

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

12-2-11 Christine Mathews [signature]

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 No. 202 JOB# 074922

SAMPLE ID: PW-074922-120211-CM-25 WELL# San Juan 32-8 No. 25

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
N/A	12.2.11	1630	N/A	N/A

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT..... DEDICATED Y (N) (CIRCLE ONE) Disposable

SAMPLING EQUIPMENT..... DEDICATED Y (N) (CIRCLE ONE) Disposable

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	0.45 micron for metals

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: none observed COLOR: orange SHEEN Y/(N) Yes

WEATHER CONDITIONS: TEMPERATURE 35° WIND Y/(N) Yes PRECIPITATION Y/(N) (IF Y TYPE) no

SPECIFIC COMMENTS: 36°56.674, -107°40.606

- sample was collected from flush grade tank using a bailer. layer of oil present floating on water surface. bailer used to go through oil layer and only water was placed in sample containers.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

12.2.11 Christine Mathews [signature]

DATE PRINT SIGNATURE

- Gas sample also collected on 12-2-11

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 No. 202 JOB# 074922

SAMPLE ID: PW-074922-120211-CM-204A WELL# San Juan 32-8 No. 204A

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
N/A	12.2.11	1215	N/A	N/A

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE) — Disposable

SAMPLING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE) — Disposable

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	0.45 micron for metals

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Cloudy ODOR: non observed COLOR: clear w/ black particulates SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE 30° WINDY Y/N Yes PRECIPITATION Y/(N) (IF Y TYPE) No Snow

SPECIFIC COMMENTS: 36°56.737, -107°40.042

- sample was collected from above grade tank using a bailer & rope from the top of the tank.
- Gas sample also collected 12.2.11

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

12.2.11 DATE — Christine Mathews PRINT — Christine Mathews SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 No. 202 JOB# 074922

SAMPLE ID: DW-074922-120211-CM-2566 WELL# House # 2566

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12.20.11	12.20.11	1130		~15

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE) Disposable

SAMPLING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE) Disposable

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= domestic pump in place (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= domestic pump in place (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	D	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	D	C - POLYPROPYLENE	X - OTHER		X= solid pvc stubbed to well pipe. Flexible pvc tubing also used. (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	X	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PVC (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	X	C - ROPE	F - SILICONE	X - OTHER	X= PVC (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	0.45 micron for metals

FIELD MEASUREMENTS

DEPTH TO WATER: Unknown (feet) WELL ELEVATION: (feet)

WELL DEPTH: 586 (feet) GROUNDWATER ELEVATION: (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
10.63 (°C)	6.90 (std)	1,528 (g/L)	1705 (µS/cm)	-94.4 (mV)	5 (gal)
10.74 (°C)	6.93 (std)	1,531 (g/L)	1715 (µS/cm)	-107.9 (mV)	10 (gal)
11.12 (°C)	6.98 (std)	1,533 (g/L)	1734 (µS/cm)	-118.8 (mV)	15 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: sulfur COLOR: clear SHEEN Y (N) No

WEATHER CONDITIONS: TEMPERATURE 30° WINDY Y (N) No PRECIPITATION Y (N) (IF Y TYPE) No

SPECIFIC COMMENTS:

- according to well owner, total volume ~ 25 gallons. well pressure is very high. Difficult to control flow based on how well pump is set.

36°56.872, -107°39.971

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

12.20.11 DATE | Christine Mathews PRINT | SIGNATURE

* Air sample was collected on 12.2.11

Air Sample Procedure

Air samples were collected from domestic groundwater wells by placing approximately 20 feet of clear flexible PVC tubing into the casings. The top of casing at locations D3 and 2566 were sealed to outside ambient air using duct tape and the tubing was clamped closed. Locations D3 and 2566 were allowed to sit overnight in this manner. Tedlar bags were filled the next day using a hand pump, summa canisters were filled using the built in vacuum system. Location 29 was sealed upon arrival with a PVC cap. A bolt was removed from the cap and 20 feet of tubing was inserted into the casing through the bolt-hole. The area around the tubing and another on the back side of the casing was sealed using duct tape. Tedlar bags were filled using a hand pump at this location after collection of the groundwater sample was complete. A summa canister was filled at location 29 the following day after sealing the well in the same manner. An air sample was not obtained from location 46 due to the wellhead already being sealed, and the landowners request that the cap not be removed.

Gas Sample Procedure

Gas samples were collected from production well locations by attaching clear flexible PVC tubing to a valve on the meter run. A ConocoPhillips site operator was present at each location to open the valves while the tedlar bags and summa canisters were filled and close them upon sample completion.

WELL SAMPLING FIELD INFORMATION FORM

SAMPLE ID ~~SITE/PROJECT NAME~~: GW-074922-052412-CM-02992-1 JOB# 074922

~~SAMPLE ID~~ PROJECT: Area 6 WELL# 02992

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
5-24-12	5-24-12	1410		2.00

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) ~~N~~ CM (CIRCLE ONE)

PURGING DEVICE	C	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	C	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 266.66 (feet) WELL ELEVATION . (feet)

WELL DEPTH 330.00 (feet) GROUNDWATER ELEVATION . (feet)

~390.00

	TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME	DC
1344	24.33 (°C)	6.64 (std)	1.260 (g/L)	1909 (µS/cm)	-28.9 (mV)	1 gal (gal)	28.8
1346	24.23 (°C)	~~6.65~~ 6.66 (std)	~~1.257~~ 1.255 (g/L)	1898 (µS/cm)	-32.9 (mV)	(gal)	
1349	23.70 (°C)	6.74 (std)	1.254 (g/L)	1881 (µS/cm)	-39.0 (mV)	1.25 (gal)	16.5
1353	23.55 (°C)	6.74 (std)	1.253 (g/L)	1874 (µS/cm)	-40.0 (mV)	(gal)	24.0
1356	23.45 (°C)	6.70 (std)	1.255 (g/L)	1870 (µS/cm)	-38.7 (mV)	1.5 (gal)	20.7
1359	23.08	6.72	1.255	1866	-40.5		
1402	23.18	6.72	1.252	1863	-42.3	1.75	16.5

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: clear SHEEN Y/N (N)

WEATHER CONDITIONS: TEMPERATURE 84° WIND Y/N (Y) PRECIPITATION Y/N (N) (IF Y TYPE)

SPECIFIC COMMENTS:

Air samples collected at 1515

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 5/24/12 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GW074922-052412-CM-03823P1-2 WELL# _____

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
5.24.12	5.24.12	0900	Not known	Unknown

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE		A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE		C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL		A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL		C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING		A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING		C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
16.63 (°C)	6.78 (std)	0.820 (g/L)	1060 (µS/cm)	136.9 (mV)	0.5 (gal)
15.54 (°C)	6.83 (std)	0.819 (g/L)	1032 (µS/cm)	136.4 (mV)	1.0 (gal)
15.42 (°C)	6.77 (std)	0.818 (g/L)	1028 (µS/cm)	137.0 (mV)	1.5 (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)
_____ (°C)	_____ (std)	_____ (g/L)	_____ (µS/cm)	_____ (mV)	_____ (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: None COLOR: light brown SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~70° WIND Y/N breezy PRECIPITATION Y/(N) (IF Y TYPE) _____

SPECIFIC COMMENTS:

Well drawn down prior to our arrival. As a result, water has sediment.
Samples taken from kitchen sink.

Air sample @ 0905

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

5/24/12 Christine Mathews [signature]

DATE PRINT SIGNATURE

9:45

6 15

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GW-074922-052312-CM-25-2 WELL# 25 (gas well)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
05-23-12	05-23-12	1045	none	none

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE		A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE		C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL		A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL		C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING		A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING		C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER: (feet) WELL ELEVATION: (feet)

WELL DEPTH: (feet) GROUNDWATER ELEVATION: (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: COLOR: green SHEEN Y/N Slight.

WEATHER CONDITIONS: TEMPERATURE 60° WINDY Y/N PRECIPITATION Y/N (IF Y TYPE)

SPECIFIC COMMENTS: 1.5 liters collected from seperator after attempting to collect water from wellhead. Piston on well head was raised to surface and no water was discharged.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

5/23/12 DATE | Christine Mathews PRINT | SIGNATURE

Some treatment chemicals are likely present in H2O sample. H2O was a slight green color w/ slight sheen. All samples collected except for DRO. Discussed w/ Chris Fetters about volume.
Air sample A-074922-052312-CM-25-2 @ 1200

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: PW-074922-052312-CM-202-2 WELL# 202 (gas well)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
5.23.12	5.23.12	0930		~2.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

PURGING DEVICE		A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE		C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL		A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL		C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING		A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING		C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear w/ some black particulates ODOR: none COLOR: clear SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~80° WINDY Y/N breezy PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS:

Initially water was full of black particulates — coal fines — that settle in the lines. Water mostly clear after this was purged.

Air Sample collected at 1000

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

5/23/12 Christine Mathews

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

~~SAMPLE ID:~~ well 03259 Sample ID WELL# GW-074922-052212-CM-03259-2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
5-22-12	5-22-12	1550	unknown	15

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	A	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	A	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	X	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= Vinyl Tubing PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	X	C - ROPE	F - SILICONE	X - OTHER	X= Vinyl Tubing SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER ( ) (feet) WELL ELEVATION ( ) (feet)

WELL DEPTH ( ) (feet) GROUNDWATER ELEVATION ( ) (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
14.50 (°C)	7.03 (std)	2.872 (g/L)	3505 (µS/cm)	55.7 (mV)	7 (gal)
13.46 (°C)	6.95 (std)	2.872 (g/L)	3441 (µS/cm)	58.2 (mV)	9 (gal)
13.24 (°C)	6.95 (std)	2.876 (g/L)	3422 (µS/cm)	57.9 (mV)	11 (gal)
13.06 (°C)	7.02 (std)	2.874 (g/L)	3468 (µS/cm)	52.2 (mV)	13 (gal)
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mV)	( ) (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 80° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

5-22-12 Well shut in night prior to sampling to allow for one greater volume of water.

Air Sample A-074922-052212-CM-03259-2 @ 1610

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS.

5/22/12 Christine Mathews [signature]

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GW-074922-052212-CM-02816-2 WELL# 02816

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
05-22-12 (no purge)	5-22-12	1440	unknown	none

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N N/A (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	A	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	A	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	X	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= Vinyl Tubing PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	X	C - ROPE	F - SILICONE	X - OTHER	X= Vinyl Tubing SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: clear SHEEN Y/N

WEATHER CONDITIONS: TEMPERATURE 84 WIND Y/N PRECIPITATION Y/N (IF Y TYPE)

SPECIFIC COMMENTS: No parameters taken due to history of very low well volume and unknown volume on 5-22-12. Well shut in night prior to sampling to allow greater volume. Air sample @ 1500 - A-074922-052212-CM-02816-1

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

5/22/12 Christine Mathews [signature]

DATE PRINT SIGNATURE

San Hydrogen & Oxygen

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GS-074922-052212-CM-03897PI-1 WELL# 03897PI-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
5-22-12	5-22-12	1315	unknown	35

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE) SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	A	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	A	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	X	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= Vinyl Tubing PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	X	C - ROPE	F - SILICONE	X - OTHER	X= Vinyl Tubing SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER ~400.00 (feet) WELL ELEVATION (feet)

WELL DEPTH ~800.00 (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
16.73 (°C)	7.22 (std)	5.315 (g/L)	6911 (µS/cm)	71.0 (mV)	9 (gal)
17.25 (°C)	7.22 (std)	6.399 (g/L)	8375 (µS/cm)	63.0 (mV)	15 (gal)
17.59 (°C)	7.37 (std)	6.363 (g/L)	8415 (µS/cm)	46.1 (mV)	25 (gal)
17.70 (°C)	7.38 (std)	6.341 (g/L)	8395 (µS/cm)	34.1 (mV)	35 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slight clear ODOR: none COLOR: clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 80° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

No air sample collected. well is sealed w/ no access.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 5/22/12 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GW-074922-052212-CM-3250-2 WELL# Good 3250

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
5-21-12 (90gal) 5-22-12 (12gal)	5-22-12	1035	unknown	102 gal

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	A	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	A	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	X	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= Vinyl tubing PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	X	C - ROPE	F - SILICONE	X - OTHER	X= Vinyl tubing SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
18.50 (°C)	6.27 (std)	1.460 (g/L)	1968 (µS/cm)	-76.6 (mV)	3 (gal)
12.31 (°C)	6.58 (std)	1.446 (g/L)	1687 (µS/cm)	-118.4 (mV)	7 (gal)
12.50 (°C)	6.59 (std)	1.449 (g/L)	1692 (µS/cm)	-125.4 (mV)	9 (gal)
12.30 (°C)	6.61 (std)	1.447 (g/L)	1687 (µS/cm)	-133.1 (mV)	11 (gal)
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mV)	____ (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: Sulfer/methane COLOR: clear SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE ~80 WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE) ____

SPECIFIC COMMENTS:

MS / MSD / DUP @ 1040 A-074922-052212-CM-3250-2 @ 1130

@ 1045 @ 1050

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

5/22/12 Christine Mathews [signature]

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GW-074922-101612-CM-03897P1-2 WELL# 03897P1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10 16 12	10 16 12	1010	See below	See comments below

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	A	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	A	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	X	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= vinyl tubing PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	X	C - ROPE	F - SILICONE	X - OTHER	X= vinyl tubing SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
14.25 (°C)	5.50 (std)	4.671 (g/L)	.5836 (µS/cm)	148.6 (mV)	____ (gal)
15.36 (°C)	6.17 (std)	4.697 (g/L)	.5903 (µS/cm)	133.5 (mV)	____ (gal)
15.50 (°C)	6.38 (std)	4.737 (g/L)	.5988 (µS/cm)	121.8 (mV)	____ (gal)
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mV)	____ (gal)
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mV)	____ (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: None COLOR: clear SHEEN Y/(N) ____

WEATHER CONDITIONS: TEMPERATURE ~60° WINDY Y/(N) ____ PRECIPITATION Y/(N) (IF Y TYPE) ____

SPECIFIC COMMENTS:

Mr. Olgun filled water tank prior to sampling, purging between 600 and 1000 gallons.

~330 ft of water based on NMOSE records

No air sample obtained due to sealed well. No access to head space

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

10/16/12 (DATE) Jason Plaza (PRINT) (SIGNATURE)

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GW-074922-101712-CM-02816-3 WELL# SJ 02816

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
~~10 17 12~~ 10 16 12 SAME	10 17 12	GW 1025		1.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	A	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	A	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER vinyl tubing		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING carb on steel	X	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING vinyl tubing	X	C - ROPE	F - SILICONE	X - OTHER ~~vinyl tubing~~	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
12.43 (°C)	7.09 (std)	3.597 (g/L)	4150 (µS/cm)	104.6 (mV)	(gal)
11.57 (°C)	7.09 (std)	3.603 (g/L)	4122 (µS/cm)	104.5 (mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: none SHEEN Y/N N

WEATHER CONDITIONS: TEMPERATURE 65°F WINDY Y/N Y PRECIPITATION Y/N (IF Y TYPE) N

SPECIFIC COMMENTS:

Air sampled at 1130

A-074922-101712-CM-02816-2

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

10/17/12 Christine Mattair [signature] Alfredo Medrano

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GW-074922-101612-CM-03259-3 WELL# SS03259

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10 16 12	10 16 12	GW 1200 (Air 1240)		12 gallons

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	A	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	A	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	X	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= Vinyl Tubing PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	X	C - ROPE	F - SILICONE	X - OTHER	X= Vinyl Tubing SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER ( ) (feet) WELL ELEVATION ( ) (feet)

WELL DEPTH ( ) (feet) GROUNDWATER ELEVATION ( ) (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
12.43 (°C)	6.70 (std)	2.690 (g/L)	3147 (µS/cm)	83.7 (mV)	( ) (gal)
12.52 (°C)	6.70 (std)	2.693 (g/L)	3159 (µS/cm)	82.6 (mV)	( ) (gal)
12.64 (°C)	6.73 (std)	2.695 (g/L)	3171 (µS/cm)	82.0 (mV)	( ) (gal)
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mV)	( ) (gal)
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mV)	( ) (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 65° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

GW sampled at 1200

GW Duplicate taken at 1220

Air sampled 1240 A-074922-101612-CM-03259-3

Air duplicate 1250 A-074922-101612-CM-DUP

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

10/16/12 DATE | Christine Mathews PRINT | Christine Mathews SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GW-074922-101712-CM-03823P1-3 WELL# SJ 03823P1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10 17 12	10 17 12	GW 1250		20

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	A	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	A	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	X	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= Vinyl Tubing PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	X	C - ROPE	F - SILICONE	X - OTHER	X= Vinyl Tubing SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
15.10 (°C)	6.65 (std)	0.805 (g/L)	10.10 (µS/cm)	-10.1 (mV)	20 (gal)
14.22 (°C)	6.65 (std)	0.805 (g/L)	980 (µS/cm)	-5.6 (mV)	22 (gal)
13.56 (°C)	6.61 (std)	0.803 (g/L)	966 (µS/cm)	-1.3 (mV)	23 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 60 WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

MS sampled at : 1300

MSD sampled at : 1310

Air sample at : 1335 A-074922-101712-CM-03823P1-3

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

10/17/12 Christine Mathews

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GW-074922-101812-CM-02992-2 WELL# SJ 02992

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10-18-12				

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

PURGING DEVICE	C	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	C	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL		A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL		C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING		A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING		C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 264.38 (feet) (10/19/12) WELL ELEVATION (feet)

WELL DEPTH ~330 (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

WEATHER CONDITIONS: TEMPERATURE WINDY Y/N N PRECIPITATION Y/N (IF Y TYPE) N

SPECIFIC COMMENTS:

From first tag line to skunk line

Depth of pump ~~300~~ ~310 ft

Time	Top of water
1030	264.04 ft

Time	Top of water
1320	203.92
1340	204.00

H2O to surface just prior to nitrogen cylinder being emptied due to faulty Geotech control box. No GW sample

Air Sample taken at 1420 on 10-18-12

A-074922-101812-CM-02992-2

No H2O sample on 10-18-12

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

10/18/12 Christine Matteas Christine Matteas

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 JOB# 074922

SAMPLE ID: GW-074922-101912-CM-02992-2 WELL# SJ 02992

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10-19-12	10.19.12	1415		2.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	C	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	C	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 264.38 (feet) WELL ELEVATION (feet)

WELL DEPTH ~ 330.00 (feet) GROUNDWATER ELEVATION (feet)

	TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
1401	17.16 (°C)	6.22 (std)	1.205 (g/L)	1578 (µS/cm)	-28.4 (mV)	(gal)
1404	17.06 (°C)	6.23 (std)	1.202 (g/L)	1569 (µS/cm)	-26.2 (mV)	(gal)
1407	17.03 (°C)	6.24 (std)	1.201 (g/L)	1566 (µS/cm)	-25.6 (mV)	(gal)
1410	17.00 (°C)	6.28 (std)	1.200 (g/L)	1563 (µS/cm)	-25.7 (mV)	(gal)
1413	16.98 (°C)	6.29 (std)	1.200 (g/L)	1562 (µS/cm)	-26.0 (mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: clear/none COLOR: clear SHEEN Y/N (N) no

WEATHER CONDITIONS: TEMPERATURE 65° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS: initial depth 264.38

between 100 - 200 ml per cycle

Pump off 1255 - 265.90

1310 - 265.88 on 10.19.12 265.82 * sample collected @ 200 ml per cycle @ 110psi 30D, 30E

1325 - 265.74

pump on - 1335 = 265.76, 1345 = 265.86, 1355 = 266.09, 1405 = 266.28

1415 = 266.42

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

10/19/12 DATE | Christine Mateus PRINT | Christine Mateus SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Arca 6 32-8 MW-1 JOB# 074922

SAMPLE ID: GW-074922-121012-CM-MW-1(Z1) WELL# MW-1 Zone 1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12/6 & 12/7	12/10/12	1350		2.0 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE	TEFLON/POLYPROPYLENE	
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	,45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	2.0 (gal) liters
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: none COLOR: Clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 30° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

- no parameters obtained from groundwater due to low volume of water present.
- Water observed during purging was slightly yellow in color
- Control box settings: 250psi, Drive 40 sec., Vent 15 sec.
- No H2S or LEL observed on 4 Gas Meter from H2O collected from zone 1.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

12/10/12 Christine Mathews

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 32-8 MW-1 JOB# 074922

SAMPLE ID: GW-074922-121012-CM-MW-1(22) WELL# MW-1 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12/6 & 12/7	12/10/12	1420		3.0 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	3.0 (gal) / liters
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: sulfur COLOR: slight green SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 30° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

- No parameters obtained from groundwater due to low volume produced
- Control box settings: 125-150 psi, 20 second Drive, 15 second vent
- 5.5 ppm H_2S observed from water on 4 gas meter during sampling.
- Duplicate collected @ 1430

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

12/10/12 Christine Mathews Christine Mathews

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 32-8 MW-1 JOB# 074922

SAMPLE ID: GW-074922-121012-CM-MW-1(Z3) WELL# MW-1 Zone 3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12/6 & 12/7	12/10/12	1600		3.0 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	3.0 (gal) liters
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: Sulfur COLOR: slight green SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE 30° WINDY Y/N: No PRECIPITATION Y/N (IF Y TYPE): no

SPECIFIC COMMENTS:

- No parameters obtained during sampling due to low volume of H2O produced
- Control box settings: 75-85 psi, Drive of 15 sec, vent of 15 sec.
- H2S observed @ 2.6 ppm on 4 gas meter during sampling.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 12/10/12 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 32-8 MW-1 JOB# 074922

SAMPLE ID: GW-074922-022813-CM-MW-1-Z1 WELL# MW-1 Zone 1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED ~~(GALLONS)~~ liters
2.27.13	2.28.13	1245		1.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	~~CONDUCTIVITY~~ SC	ORP	VOLUME
2/27 10.77 (°C)	6.06 (std)	2.657 (g/L)	4083 (µS/cm)	-73.3 (mV)	1.0 ~~(gal)~~ liter
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: Sulfur COLOR: Clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 40° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no - but snow on ground

SPECIFIC COMMENTS:

- black particulates observed in water during purging on 2/27. Sulfur odor observed. 4 gas meter reading indicated H2S @ 11.3 and LEL of 17%.
- Purge & Sample Control box settings: 285 psi, Drive 55 sec., Vent 15 sec.
- No parameters collected during sampling due to low volume of water

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

2/28/13 Christine Matthews [signature]

DATE PRINT SIGNATURE

* Additional Notes: water is produced from Zone 3 in short bursts followed by what seems to be vapor from the zone. Highest levels of H2S on 4 gas meter observed following bursts of vapor.

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 32-8 MW-1 JOB# 07492Z

SAMPLE ID: GW-07492Z-022813-CM-MW-1-Z2 WELL# MW-1 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED ~~(GALLONS)~~ liters
2.27.13	2.28.13	1015		1.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

	TEMPERATURE	pH	TDS	CONDUCTIVITY SC	ORP	VOLUME
2/27	11.06 (°C)	7.16 (std)	3.250 (g/L)	5000 (µS/cm)	250.8 (mV)	1.5 (gal) liters
	(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: sulfur COLOR: gray/green SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 40° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no - but snow on ground

SPECIFIC COMMENTS:

- Duplicate sample collected @ 1020
- water during purging on 2/27 was dark gray/black. Sulfur odor observed. 4 gas meter reading indicates H2S @ 8.3 ppm.
- Purge & Sample Control box settings: 190 psi, Drive 30 sec., Vent 15 sec.
- No ground water parameters collected during sampling due to low volume of water

H2S reading from 4 gas meter during sampling observed @ 100ppm max and NO LEL

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

2/28/13 DATE | Christine Mathews PRINT | Christine Mathews SIGNATURE

* Additional notes: water is produced from zone 2 in short bursts followed by what seems to be vapor from the zone. Highest levels of H2S on 4 gas meter observed following a burst of vapor during sampling.

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 32-8 MW-1 JOB# 074922

SAMPLE ID: GW-074922-022813-CM-MW-1-Z3 WELL# MW-1 Zone 3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS) liters
2.27.13	2.28.13	1115		2.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= Water100 PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Water100 SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER ( ) (feet) WELL ELEVATION ( ) (feet)

WELL DEPTH ( ) (feet) GROUNDWATER ELEVATION ( ) (feet)

	TEMPERATURE	pH	TDS	CONDUCTIVITY SC	ORP	VOLUME
2/27	8.88 (°C)	8.17 (std)	2.247 (g/L)	3457 (µS/cm)	-217.9 (mV)	2.0 (gal) liters
	( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mV)	( ) (gal)
	( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mV)	( ) (gal)
	( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mV)	( ) (gal)
	( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mV)	( ) (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: sulfur COLOR: gray/green SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 40° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no - but snow on ground

SPECIFIC COMMENTS:

- water during purging on 2/27 was dark gray/black. Sulfur odor observed. 4 gas meter reading indicates H_2S @ 4.3 ppm and LEL @ 7%
- Purge and sample control box settings: 90-110 psi, Drive 20 sec, Vent 70 sec
- NO groundwater parameters collected during sampling due to low volume of water H_2S reading from 4 gas meter during sampling observed @ 4.3 and NO LEL

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

2/28/13 Christine Mathews Christine Mathews

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 SJ 32-8 MW-1 JOB# 074922

SAMPLE ID: GW-074922-032213-CM-MW-1-Z1 WELL# MW-1 Zone 1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3-21-13	3-22-13	0950		0.75 CM Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	B	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	B	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: slight sulfur COLOR: clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 40° WINDY Y/N Yes PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

- purge & sample control box settings: 275 psi, Drive 45 sec, Vent 15 sec.
- 0ppm 0% H2S and 0ppm % LEL during purging
- No air sample collected from Zone 1

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS.

3/22/13 Christine Mathews Christine Mathews

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 SJ 32-8 MW-1 JOB# 074922

SAMPLE ID: GW-074922-032213-CM-MW-1-22 WELL# MW-1 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3.21.13	3.22.13	1140		4.0 ~~GAL~~ Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	B	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	B	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: Sulfur COLOR: Clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 40° WINDY Y/N Yes PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:
- Duplicate collected @ 1130 on 3/22/13
- Purge & Sample control box settings: 1.5 psi, 30 Drive, 15 vent
- Gas from zone 2 seems to be under pressure, bursts of gas
- Grab sample on 3/21/13 of 0.5 L H_2O gave 75 ppm H_2S & 0% LEL no hits of H_2S or LEL in breathing zone
- Air sample collected 3/22/13 @ 1125 A-074922-032213-CM-MW-1-22

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

3/22/13 DATE | Christine Mathews PRINT | Christine Mathews SIGNATURE

Additional Notes: Duplicate Air sample collected @ 1130 on 3/22/13 A-074922-032213-CM-MW-1-DUP

-Also must lower preasure to get check balls to seal then increase pressure of nitrogen again to produce more H_2O

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Area 6 SJ 32-8 MW-1 JOB# 074922

SAMPLE ID: GW-074922-032213-CM-MW-1-23 WELL# MW-1 Zone 3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
3/21/13	3/22/13	1435		1.25 Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	.45 micron for metals only

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear to cloudy ODOR: sulfur COLOR: none to white SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 40° WINDY Y/N yes PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

- purge & sample control box settings: 50 to 100 psi, Drive 20 sec, Vent 15 sec
- Grab sample from 0.5 liter on 3/21/13 above 100 ppm max H_2S and 4% LEL no H_2S or LEL detected in breathing zone.
- Gas from zone 3 seems to be under pressure and comes in bursts
- Air sample collected @ 1425 on 3/22/13 A-074922-032213-CM-MW-1-23

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

3/22/13 DATE | Christine Mathews PRINT | Christine Mathews SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: 33 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-061813-CM-MW-1-Z1 WELL# MW-1 zone 1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6/17/13	6/18/13	1045		2.25 Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E B	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	0.45 micron for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

	TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
6/17/13	22.89 (°C)	7.90 (std)	2.959 (g/L)	4559 (µS/cm)	9.52 (mg/L)	24.5 (mV)	~~2.25~~ 2.25 (gal) Liters
	(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: sulfur COLOR: clear SHEEN Y/N none
WEATHER CONDITIONS: TEMPERATURE 95 WINDY Y/N yes PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:
- Sulfur odor noticed during purging. 4 gas meter indicated H_2S @ 0.2 ppm from purge water. No LEL noticed.
- Control settings: 250 psi, drive 10 seconds, vent 8 seconds - steady flow
- no parameters collected during sampling due to low volume of water

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 6/18/13 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: SJ 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-061813-CM-MW-1-Z2 WELL# MW-1 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED ~~(GALLONS)~~ Liters
6/17/13	6/18/13	1025		4.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

PURGING DEVICE: X A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER — X= Waterloo (PURGING DEVICE OTHER (SPECIFY))

SAMPLING DEVICE: X — X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))

PURGING MATERIAL: E ~~B~~ A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER — X= (PURGING MATERIAL OTHER (SPECIFY))

SAMPLING MATERIAL: B — X= (SAMPLING MATERIAL OTHER (SPECIFY))

PURGE TUBING: E A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER — X= (PURGE TUBING OTHER (SPECIFY))

SAMPLING TUBING: B — X= (SAMPLING TUBING OTHER (SPECIFY))

FILTERING DEVICES 0.45: A A - IN-LINE DISPOSABLE; B - PRESSURE 0.45 micron for metals only.

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

6/17/13

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
23.48 (°C)	8.45 (std)	4.461 (g/L)	6862 (µS/cm)	3.08 (mg/L)	-243.3 (mV)	4.5 ~~(gal)~~ Liters
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: sulfur COLOR: clear SHEEN Y/N none

WEATHER CONDITIONS: TEMPERATURE 95° WINDY Y/N yes PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

- Duplicate for VOCs and Isobag @ 1010
- Control settings: 225 psi, 50 second drive, 25 second vent - steady flow
- Sulfur odor noticed during purging. 4 gas meter indicates H2S @ 88 ppm from purge bucket. No LEL noted.
- No parameters collected during sampling due to low volume of water

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 6/18/13 PRINT Christine Matthews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: SJ 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-061813-CM-MW-1-Z3 WELL# MW-1 Zone3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS) Liters
6/17/13	6/18/13	1155		2.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	[X]	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	[X]	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	[E]	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	[B]	B - STAINLESS STEEL C - POLYPROPYLENE	E - POLYETHYLENE X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	[E]	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	[E]	B - TYGON C - ROPE	E - POLYETHYLENE F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	[A]	A - IN-LINE DISPOSABLE	B - PRESSURE	0.45 micron for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)
WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

6/17/13

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
22.67 (°C)	8.11 (std)	2.03 (g/L)	3196 (µS/cm)	2.80 (mg/L)	-300.8 (mV)	2.5 (gal) Liters
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: sulfur COLOR: clear SHEEN Y/N none
WEATHER CONDITIONS: TEMPERATURE 95 WINDY Y/N yes PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:
- Water purged from well comes in short bursts @ pressures on control box as low as 25psi. Final settings: 75psi, Drive 15 seconds, Vent 60 seconds
- 4 gas meter indicates 5.5 ppm from H2O, no LEL.
- No parameters collected during sampling due to low water volume

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS
DATE 6/18/13 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: SJ 32-8 30 Area JOB# 074922

SAMPLE ID: GW-074922-091913-CM-3823PI-COLD WELL# 3823PI-COLD

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS) Liters
9/19/13	9/19/13	0920	Unknown	57

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	A	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	A	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	X	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= Stainless drop pipe & faucet PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	X	C - ROPE	F - SILICONE	X - OTHER	X= Stainless drop pipe & faucet SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		for metals only

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

	TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
15 min	15.73 (°C)	6.13 (std)	0.846 (g/L)	1301 (µS/cm)	7.03 (mg/L)	81.7 (mV)	45 (gal) Liter
16 min	15.69 (°C)	6.50 (std)	0.848 (g/L)	1305 (µS/cm)	5.01 (mg/L)	70.2 (mV)	48 (gal) Liter
17 min	15.68 (°C)	6.81 (std)	0.856 (g/L)	1318 (µS/cm)	4.25 (mg/L)	64.9 (mV)	51 (gal) Liter
18 min	15.68 (°C)	6.82 (std)	0.858 (g/L)	1320 (µS/cm)	3.89 (mg/L)	62.0 (mV)	54 (gal) Liter
19 min	15.68 (°C)	6.88 (std)	0.860 (g/L)	1324 (µS/cm)	3.68 (mg/L)	59.9 (mV)	57 (gal) Liter

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: clear SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE 70° WINDY Y/N: indoors PRECIPITATION Y/N (IF Y TYPE): indoors

SPECIFIC COMMENTS:

COLD RUN FOR 15 MIN @ 3L/MIN STARTING AT 0900

PARAMETERS COLLECTED EVERY MINUTE FOR 5 MIN @ 3 L/MIN

SAMPLES TAKEN AT FLOW OF 300 mL/min

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 9/19/13 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: SJ 32-8 30 Area JOB# 074922

SAMPLE ID: GW-074922-091913-CM-3823P1-HOT WELL# 3823P1-HOT

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9/19/13	9/19/13	1005	unknown	38 Litters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE: [X] A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA; X - OTHER — X= Kitchen Faucet (PURGING DEVICE OTHER (SPECIFY))

SAMPLING DEVICE: [X] C - BLADDER PUMP — X= Kitchen Faucet (SAMPLING DEVICE OTHER (SPECIFY))

PURGING MATERIAL: [ ] A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER — X= (PURGING MATERIAL OTHER (SPECIFY))

SAMPLING MATERIAL: [ ] — X= (SAMPLING MATERIAL OTHER (SPECIFY))

PURGE TUBING: [N/A] A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER — X= (PURGE TUBING OTHER (SPECIFY))

SAMPLING TUBING: [N/A] — X= (SAMPLING TUBING OTHER (SPECIFY))

FILTERING DEVICES 0.45: [A] A - IN-LINE DISPOSABLE; B - PRESSURE — for metals only

FIELD MEASUREMENTS

DEPTH TO WATER: ( ) (feet) WELL ELEVATION: ( ) (feet)

WELL DEPTH: ( ) (feet) GROUNDWATER ELEVATION: ( ) (feet)

	TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
15min	49.68 (°C)	7.69 (std)	0.918 (g/L)	1412 (µS/cm)	2.21 (mg/L)	36.6 (mV)	30 (gal) Liters
16min	50.35 (°C)	7.73 (std)	0.917 (g/L)	1411 (µS/cm)	2.27 (mg/L)	38.1 (mV)	32 (gal) Liters
17min	50.84 (°C)	7.74 (std)	0.916 (g/L)	1410 (µS/cm)	2.21 (mg/L)	39.2 (mV)	34 (gal) Liters
18min	51.34 (°C)	7.75 (std)	0.915 (g/L)	1408 (µS/cm)	2.16 (mg/L)	41.0 (mV)	36 (gal) Liters
19min	51.54 (°C)	7.75 (std)	0.915 (g/L)	1407 (µS/cm)	2.14 (mg/L)	41.3 (mV)	38 (gal) Liters

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: clear SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE 70° WINDY Y/N: indoors PRECIPITATION Y/N (IF Y TYPE): no indoors

SPECIFIC COMMENTS:

HOT RUN FOR 15 MIN @ 2 L/MIN STARTING AT 0935

Parameters collected every min for 5 min starting @ 15 min

300 mL/min during sampling

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 9/19/13 PRINT Christine Mathews SIGNATURE Christine C Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: SJ 32-8 30 Area JOB# 074922

SAMPLE ID: GW-074922-091913-GM-2992 WELL# 2992

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9/19/13	9/19/13	1300	~93.7 Unknown	2.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	C	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	C	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	0.45 micron for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER: 266.19 (feet) ended @ 267.3 WELL ELEVATION: (feet)

WELL DEPTH: ~330 (feet) GROUNDWATER ELEVATION: (feet)

	TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
1235	19.54 (°C)	7.03 (std)	1.306 (g/L)	2010 (µS/cm)	1.83 (mg/L)	-48.9 (mV)	1.2 (gal)
1240	19.45 (°C)	7.07 (std)	1.302 (g/L)	2003 (µS/cm)	1.50 (mg/L)	-56.6 (mV)	1.4 (gal)
1245	19.48 (°C)	7.00 (std)	1.301 (g/L)	2002 (µS/cm)	1.36 (mg/L)	-63.2 (mV)	1.6 (gal)
1250	19.38 (°C)	7.03 (std)	1.302 (g/L)	2002 (µS/cm)	1.29 (mg/L)	-68.6 (mV)	1.8 (gal)
1255	19.30 (°C)	7.06 (std)	1.300 (g/L)	2000 (µS/cm)	1.24 (mg/L)	-68.6 (mV)	2.0 (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: clear SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE: 60's WINDY Y/N: no PRECIPITATION Y/N (IF Y TYPE): no

SPECIFIC COMMENTS:

Low flow sampling performed with bladder pump. Well is not equiped with a pump.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE QRA PROTOCOLS

DATE 9/19/13 PRINT Christine Matthews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-091913-CM-3259 WELL# 3259

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9/19/13	9/19/13	1425	Unknown	20

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	A	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	A	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	N/A	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	N/A	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		for metals only

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)
WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

	TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
1405 (CM)	13.02 (°C)	6.85 (std)	2,708 (g/L)	4175 (µS/cm)	6.44 (mg/L)	72.2 (mV)	9 (gal)
~~1410~~							
1415	12.96 (°C)	6.89 (std)	2,745 (g/L)	4229 (µS/cm)	5.01 (mg/L)	73.3 (mV)	11 (gal)
1415 1420 (CM)	12.88 (°C)	6.95 (std)	2,804 (g/L)	4318 (µS/cm)	3.71 (mg/L)	74.7 (mV)	14 (gal)
1420	12.74 (°C)	6.97 (std)	2,810 (g/L)	4416 (µS/cm)	3.18 (mg/L)	81.7 (mV)	17 (gal)
1425	12.69 (°C)	7.01 (std)	2,891 (g/L)	4461 (µS/cm)	3.20 (mg/L)	79.4 (mV)	20 (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: clear SHEEN Y/N no
WEATHER CONDITIONS: TEMPERATURE 80's WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no
SPECIFIC COMMENTS:

Well was purged @ a volume of ~ 2.75 liters liters per minute

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 9/19/13 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-092613-CM-MW-1-21 WELL# MW-1 Zone 1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9/26/13	9/26/13	1145		5.0 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	[X]	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
SAMPLING DEVICE	[X]	B - PERISTALTIC PUMP C - BLADDER PUMP	E - PURGE PUMP F - DIPPER BOTTLE	H - WATERRA® X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	[B]	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
SAMPLING MATERIAL	[B]	B - STAINLESS STEEL C - POLYPROPYLENE	E - POLYETHYLENE X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	[E]	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
SAMPLING TUBING	[E]	B - TYGON C - ROPE	E - POLYETHYLENE F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	[A]	A - IN-LINE DISPOSABLE	B - PRESSURE		0.45 for metals only

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME	
17.94 (°C)	7.42 (std)	2,993 4605 (g/L)	4604 (µS/cm)	7.44 (mg/L)	49.7 (mV)	0.5 (gal)	liter
16.37 (°C)	7.38 (std)	3,005 (g/L)	4623 (µS/cm)	5.90 (mg/L)	27.9 (mV)	1.0 (gal)	1.5 liters
16.22 (°C)	5.69 (std)	2,997 (g/L)	4610 (µS/cm)	3.20 (mg/L)	-141.3 (mV)	3.0 (gal)	liters
16.14 (°C)	6.66 (std)	3,102 (g/L)	4772 (µS/cm)	1.84 (mg/L)	-177.5 (mV)	4.25 (gal)	
15.37 (°C)	6.81 (std)	3,103 (g/L)	4773 (µS/cm)	1.57 (mg/L)	-176.9 (mV)	5.0 (gal)	

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: sulfur COLOR: very slight yellow SHEEN Y/N: no
WEATHER CONDITIONS: TEMPERATURE: 80° WINDY Y/N: yes PRECIPITATION Y/N (IF Y TYPE): no
SPECIFIC COMMENTS: Duplicate collected @ 1205

@ 2 liters 2.3 ppm H_2S during pump cycle. No LEL
2.5 liters 18.6 ppm H_2S

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 9/26/13 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-092613-CM-MW-1-Z2 WELL# MW-1 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
9/26/13	9/26/13	1525		

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
SAMPLING DEVICE	X	B - PERISTALTIC PUMP C - BLADDER PUMP	E - PURGE PUMP F - DIPPER BOTTLE	H - WATERRA® X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
SAMPLING MATERIAL	B	B - STAINLESS STEEL C - POLYPROPYLENE	E - POLYETHYLENE X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
SAMPLING TUBING	E	B - TYGON C - ROPE	E - POLYETHYLENE F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		0.45 for metals only

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
15.62 (°C)	7.31 (std)	06 (g/L)	6639 (µS/cm)	2.96 (mg/L)	-218.7 (mV)	2.5 (gal) liters
17.74 (°C)	7.48 (std)	4.346 (g/L)	6681 (µS/cm)	0.50 (mg/L)	-270.9 (mV)	4.25 (gal) liters
17.02 (°C)	7.07 (std)	4.383 (g/L)	6744 (µS/cm)	1.06 (mg/L)	-251.8 (mV)	5.0 (gal) liters
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: sulfur COLOR: clear SHEEN Y/N none
WEATHER CONDITIONS: TEMPERATURE 80° WINDY Y/N yes PRECIPITATION Y/N (IF Y TYPE) no
SPECIFIC COMMENTS:

17.9 ppm H2S
Cycle @ 75 drive, 60 vent @ 240 psi
- wait 25 seconds into drive to open surface valve

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 9/26/13 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-100213-CM-MW-1-Z3 WELL# MW-1 Zone 3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/2/13	10/2/13	1330		3 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

PURGING DEVICE: X A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER — X= Waterloo PURGING DEVICE OTHER (SPECIFY)

SAMPLING DEVICE: X — X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)

PURGING MATERIAL: B A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER — X= PURGING MATERIAL OTHER (SPECIFY)

SAMPLING MATERIAL: B — X= SAMPLING MATERIAL OTHER (SPECIFY)

PURGE TUBING: E A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER — X= PURGE TUBING OTHER (SPECIFY)

SAMPLING TUBING: E — X= SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45: A A - IN-LINE DISPOSABLE; B - PRESSURE — for metals only

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: sulfur COLOR: clear SHEEN Y/N none

WEATHER CONDITIONS: TEMPERATURE 75° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS: sample attempt made on 9/27/13 controlle box quit working & needs repair.
- Initian air from well 5.6 ppm & 100% LEL on 9/27/13
- Returned to site with new controller on 10/2/13 18% LEL no H2S
final pump cycle 10 second Drive & 30 second rent @ 100 psi. No parameters collected.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRAFT TOOLS

DATE 10/2/13 PRINT Christine Matthews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-120313-CM-MW-2-Z1 WELL# MW-2 Zone1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12/3/13	12/3/13	1035 1105 isobag		4 5 liters befor isoflask liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		for metals only

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
9.57 (°C)	6.08 (std)	0.987 (g/L)	1518 (µS/cm)	4.05 (mg/L)	-65.4 (mV)	4 (gal) / liters
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: sulfur COLOR: lt. brown SHEEN Y/N: no
WEATHER CONDITIONS: TEMPERATURE: 30° WINDY Y/N: no PRECIPITATION Y/N (IF Y TYPE): no

SPECIFIC COMMENTS:
LEL of 4% & H_2S of 5.2 in purge bucket. No H_2S in breathing zone

Final cycle, 15 drive, 30 vent @ 225 psi. Consistent flow, no spurts until 2 liters then had 1-2 spurts

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE EPA PROTOCOLS

DATE 12/3/13 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 area JOB# 074922

SAMPLE ID: GW-074922-120313-CM-MW-2-ZZ WELL# MW-2 zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12/3/13	12/3/13	1225		4L liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		for metals only

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
10.49 (°C)	7.09 (std)	.691 (g/L)	1063 (µS/cm)	2.26 (mg/L)	-272 (mV)	3.5 (gal)
	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy, particulates ODOR: sulfur COLOR: gray SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE: 30° WINDY Y/N: no PRECIPITATION Y/N (IF Y TYPE): no

SPECIFIC COMMENTS: No H_2S readings from purge bucket using 4 gas meter. Highest LEL reading from purge bucket was 6%.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE PROTOCOLS

DATE 12/3/13 PRINT Christine Mathews SIGNATURE Christine Mathews

460

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922

SAMPLE ID: GW-074922-~~1204~~ 120313-CM-MW-4-Z1 WELL# MW-4 zone 1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED ~~(GALLONS)~~ liters
12/3/13	12/3/13	~~1558~~ 1630		6

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

PURGING DEVICE: X A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER — X= Waterloo PURGING DEVICE OTHER (SPECIFY)

SAMPLING DEVICE: X — X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)

PURGING MATERIAL: B A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER — X= PURGING MATERIAL OTHER (SPECIFY)

SAMPLING MATERIAL: B — X= SAMPLING MATERIAL OTHER (SPECIFY)

PURGE TUBING: E A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER — X= PURGE TUBING OTHER (SPECIFY)

SAMPLING TUBING: E — X= SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45: A A - IN-LINE DISPOSABLE; B - PRESSURE — for metals only

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
12.52 (°C)	6.74 (std)	2.296 (g/L)	3541 (µS/cm)	1.74 (mg/L)	-336.9 (mV)	1L ~~(gal)~~
11.92 (°C)	7.06 (std)	2.051 (g/L)	3157 (µS/cm)	1.30 (mg/L)	-301.4 (mV)	6L ~~(gal)~~
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Black Particulate ODOR: Sulfur COLOR: clear to lt gray SHEEN Y/N NO

WEATHER CONDITIONS: TEMPERATURE 34° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

Highest H_2S reading in purge bucket was 71ppm. Second reading was 56ppm. Highest LEL from bucket = 8% all measured with 4 gas meter.

Final pumping @ 260psi, vent 50seconds, Drive 40seconds

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 12/3/13 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-120413-CM-MW-4-Z2 WELL# MW-4 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12/4/13	12/4/13	0955		7

CM liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE) SAMPLING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

PURGING DEVICE: A - SUBMERSIBLE PUMP, B - PERISTALTIC PUMP, C - BLADDER PUMP, D - GAS LIFT PUMP, E - PURGE PUMP, F - DIPPER BOTTLE, G - BAILER, H - WATERRA®, X - OTHER X — X= Waterloo (PURGING DEVICE OTHER (SPECIFY))

SAMPLING DEVICE: A — X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))

PURGING MATERIAL: B — A - TEFLON, B - STAINLESS STEEL, C - POLYPROPYLENE, D - PVC, E - POLYETHYLENE, X - OTHER — X= (PURGING MATERIAL OTHER (SPECIFY))

SAMPLING MATERIAL: B — X= (SAMPLING MATERIAL OTHER (SPECIFY))

PURGE TUBING: E — A - TEFLON, B - TYGON, C - ROPE, D - POLYPROPYLENE, E - POLYETHYLENE, F - SILICONE, G - COMBINATION TEFLON/POLYPROPYLENE, X - OTHER — X= (PURGE TUBING OTHER (SPECIFY))

SAMPLING TUBING: E — X= (SAMPLING TUBING OTHER (SPECIFY))

FILTERING DEVICES 0.45: A — A - IN-LINE DISPOSABLE, B - PRESSURE — for metals only

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
8.51 (°C)	7.44 (std)	2.453 (g/L)	3775 (µS/cm)	1.04 (mg/L)	-283.4 (mV)	7 (gal) liters
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: black particulates ODOR: sulfur COLOR: clear to gray SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE 20° WINDY Y/N yes PRECIPITATION Y/N (IF Y TYPE) yes - snow

SPECIFIC COMMENTS: Highest H_2S reading in purge bucket was 15.6 ppm with 4 gas meter. Pumping PSI ranged from 150 to 225. End rent cycle was 50 seconds, end drive cycle was 45 seconds.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE DEA PROTOCOLS

DATE 12/4/13 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074902

SAMPLE ID: GW-074902-120613-CM-MW3-Z2 WELL# MW3 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12/4/13	12/4/13	1110		5L

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	B	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

	TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
1100	9.18 (°C)	7.99 (std)	2.440 (g/L)	3783 (µS/cm)	4.16 (mg/L)	-264.5 (mV)	3L (gal)
	10.47 (°C)	8.61 (std)	3.341 (g/L)	5137 (µS/cm)	3.07 (mg/L)	-207.2 (mV)	5L (gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: Sulfur COLOR: clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 20° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

Highest H2S reading from purge bucket was 30ppm with 4 gas meter, no LEL with 4 gas meter, Amnt should cycle 20 sec vent 60 sec at 200psi, after switching tank (and 40+ chains), 60 sec vent at 225psi produced a consistent stream

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE EPA PROTOCOLS

DATE 12/4/13 PRINT Christina Mathews SIGNATURE Christina Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-120513-CM-MW-1-Z1 WELL# MW-1 Zone 1
GW-074922-120513-CM-DUP

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12/5/13	12/5/13	1518		~~5~~ 6L

Duplicate @ 1520 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

PURGING DEVICE: X A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER — X= Waterloo (PURGING DEVICE OTHER (SPECIFY))

SAMPLING DEVICE: X — X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))

PURGING MATERIAL: B A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER — X= (PURGING MATERIAL OTHER (SPECIFY))

SAMPLING MATERIAL: B — X= (SAMPLING MATERIAL OTHER (SPECIFY))

PURGE TUBING: E A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER — X= (PURGE TUBING OTHER (SPECIFY))

SAMPLING TUBING: E — X= (SAMPLING TUBING OTHER (SPECIFY))

FILTERING DEVICES 0.45: A A - IN-LINE DISPOSABLE; B - PRESSURE — for metals only

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
8.62 (°C)	5.25 (std)	3.055 (g/L)	489 (µS/cm)	5.54 (mg/L)	13.5 (mV)	5L (gal) liters
8.38 (°C)	7.00 (std)	3.470 (g/L)	5339 (µS/cm)	1.79 (mg/L)	-210.3 (mV)	6L (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: slight sulfur COLOR: clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 20s WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

Water purges in solid stream. Long vent cycle and shorter drive time @ 250 psi.

Duplicate collected @ 1520

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 12/5/13 PRINT Armstrong Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-120613-CM-MW-1-Z2 WELL# MW-1 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12/6/13	12/6/13	1030		SL

(CM) liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE: X A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER — X= Waterloo PURGING DEVICE OTHER (SPECIFY)

SAMPLING DEVICE: X — X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)

PURGING MATERIAL: B A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER — X= PURGING MATERIAL OTHER (SPECIFY)

SAMPLING MATERIAL: B — X= SAMPLING MATERIAL OTHER (SPECIFY)

PURGE TUBING: E A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER — X= PURGE TUBING OTHER (SPECIFY)

SAMPLING TUBING: E — X= SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45: A A - IN-LINE DISPOSABLE; B - PRESSURE — for metals only

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
11.15 (°C)	7.62 (std)	4.755 (g/L)	7331 (µS/cm)	3.85 (mg/L)	-255.1 (mV)	SL (gal) (CM) liters
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: Sulfur COLOR: slight yellow SHEEN Y/N N

WEATHER CONDITIONS: TEMPERATURE _____ WINDY Y/N _____ PRECIPITATION Y/N (IF Y TYPE) Y snow

SPECIFIC COMMENTS: Final cycle 75 sec drive, 90 sec vent between 200 & 225 psi. Had to use valve to decrease backflow. Takes 35 sec into drive cycle until forward movement. LEL reading (30) from well but not zone

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 12/6/13 PRINT Christine Matthews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-120613-CM-MW-1-23 WELL# MW-1 zone 3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
12/6/13	12/6/13	1415		3 (CM) liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
7.36 (°C)	7.70 (std)	2.392 (g/L)	3689 (µS/cm)	2.57 (mg/L)	-240.8 (mV)	3L (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Slightly cloudy ODOR: sulfur COLOR: clear SHEEN Y/N no
WEATHER CONDITIONS: TEMPERATURE 26° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

A steady stream was never achieved. H2O drives in spurts. Best volume of H2O per cycle is argued 100 - 125 psi. Longer vent times did not seem to increase cycle output.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE QA PROTOCOLS

DATE 12/6/13 PRINT Christine Mathews SIGNATURE Christine Mathews

yellow

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922

SAMPLE ID: GW-074922-021814-BJ-MW-4 21 WELL# MW-4 Zone 1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
2/18/14	2/18/14	1035		

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE: [Y] A-SUBMERSIBLE PUMP; B-PERISTALTIC PUMP; C-BLADDER PUMP; D-GAS LIFT PUMP; E-PURGE PUMP; F-DIPPER BOTTLE; G-BAILER; H-WATERRA®; X-OTHER — X= Waterloo (PURGING DEVICE OTHER (SPECIFY))

SAMPLING DEVICE: [Y] C-BLADDER PUMP — X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))

PURGING MATERIAL: [B] A-TEFLON; B-STAINLESS STEEL; C-POLYPROPYLENE; D-PVC; E-POLYETHYLENE; X-OTHER — X= (PURGING MATERIAL OTHER (SPECIFY))

SAMPLING MATERIAL: [B] C-POLYPROPYLENE — X= (SAMPLING MATERIAL OTHER (SPECIFY))

PURGE TUBING: [E] A-TEFLON; B-TYGON; C-ROPE; D-POLYPROPYLENE; E-POLYETHYLENE; F-SILICONE; G-COMBINATION TEFLON/POLYPROPYLENE; X-OTHER — X= (PURGE TUBING OTHER (SPECIFY))

SAMPLING TUBING: [E] C-ROPE — X= (SAMPLING TUBING OTHER (SPECIFY))

FILTERING DEVICES 0.45: [A] A-IN-LINE DISPOSABLE; B-PRESSURE — metals only

FIELD MEASUREMENTS

DEPTH TO WATER ( ) (feet) WELL ELEVATION ( ) (feet)

WELL DEPTH ( ) (feet) GROUNDWATER ELEVATION ( ) (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
						1 Liter
10.61 (C)	7.91 (std)	1.691 (g/L)	2596 (µS/cm)	2.06 (mg/L)	-347.2 (mV)	~~.264~~ (gal)
10.76 (C)	8.24 (std)	1.513 (g/L)	2328 (µS/cm)	3.30 (mg/L)	-326.1 (mV)	2 L (gal)
11.51 (C)	7.91 (std)	1.997 (g/L)	3071 (µS/cm)	5.37 (mg/L)	-359.3 (mV)	3 L (gal)
11.42 (C)	8.03 (std)	2.305 (g/L)	3544 (µS/cm)	0.82 (mg/L)	-351.5 (mV)	4 L (gal)
11.71 (C)	8.00 (std)	2.395 (g/L)	3685 (µS/cm)	1.14 (mg/L)	-350.3 (mV)	5 L (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

WEATHER CONDITIONS: TEMPERATURE WINDY Y/N PRECIPITATION Y/N (IF Y TYPE)

SPECIFIC COMMENTS: H_2S - 48.0 ppm 10:25 stop work

Start Vent 30, Drive 50 @ 260 PSI

End Vent 45, Drive 60 @ 260 PSI

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE EPA PROTOCOLS

DATE 2/18/14 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922

SAMPLE ID: GW-074922-021814-BJ-MW-4-ZZ WELL# MW-4 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
2/15/14	2/18/14	1150		4.5 ~~GAL~~ liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterra PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterra SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	For metals only	

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
12.75 (°C)	8.49 (std)	3038 (g/L)	4681 (µS/cm)	(BJ) 2.23 (mg/L)	-352.4 (mV)	2.5 L (gal)
12.82 (°C)	8.89 (std)	3.120 (g/L)	4800 (µS/cm)	1.73 (mg/L)	-354.5 (mV)	3.5 L (gal)
12.94 (°C)	8.91 (std)	3.187 (g/L)	4899 (µS/cm)	1.35 (mg/L)	-356.8 (mV)	4.5 L (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

WEATHER CONDITIONS: TEMPERATURE WINDY Y/N PRECIPITATION Y/N (IF Y TYPE)

SPECIFIC COMMENTS: 1120 H_2S - Max ppm Stop work
Drive 40, Vent 45 @ 150 PSI

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 2/18/14 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 Area 30 JOB# 74922

SAMPLE ID: GW-074922-021814-BJ-MW-4-Z3 WELL# MW 4 Zone 3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
2/18/14	2/18/14			

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

PURGING DEVICE: X — A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; G - BAILER; H - WATERRA®

SAMPLING DEVICE: Y — C - BLADDER PUMP; F - DIPPER BOTTLE; X - OTHER

X= Waterloo — PURGING DEVICE OTHER (SPECIFY)

X= Waterloo — SAMPLING DEVICE OTHER (SPECIFY)

PURGING MATERIAL: B — A - TEFLON; B - STAINLESS STEEL; D - PVC; E - POLYETHYLENE

SAMPLING MATERIAL: B — C - POLYPROPYLENE; X - OTHER

X= — PURGING MATERIAL OTHER (SPECIFY)

X= — SAMPLING MATERIAL OTHER (SPECIFY)

PURGE TUBING: E — A - TEFLON; B - TYGON; D - POLYPROPYLENE; E - POLYETHYLENE; G - COMBINATION TEFLON/POLYPROPYLENE

SAMPLING TUBING: E — C - ROPE; F - SILICONE; X - OTHER

X= — PURGE TUBING OTHER (SPECIFY)

X= — SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45: A — A - IN-LINE DISPOSABLE; B - PRESSURE

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
11.31 (°C)	9.15 (std)	1.825 (g/L)	2806 (µS/cm)	6.54 (mg/L)	-262.9 (mV)	5/8 L (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: _____ ODOR: _____ COLOR: _____ SHEEN Y/N _____

WEATHER CONDITIONS: TEMPERATURE _____ WINDY Y/N _____ PRECIPITATION Y/N (IF Y TYPE) _____

SPECIFIC COMMENTS: 1215 - CH4 - 34% LEL H2S 84ppm Stop work

Drive 40 Vent 45 @ 150 PSI - off gassing 12 ounces H2O Produced

Drive 30, vent 60 @ ~~150 PSI~~ 125 PSI - off Gassing - No H2O

Drive 30, vent 60 @ 175 PSI - off gassing - 4 oz H2O Produced

Drive 20, Vent 60 @ 100 PSI - off Gassin - No H2O Produced

Drive 45, Vent 60 @ 150 PSI - off Gassing - 4 oz H2O Produced 20 oz total

Very Dark Black in Color

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 2/18/14 PRINT Christine Matthews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 Area 3D JOB# 074927

SAMPLE ID: GW-074927-021814-BT-MW-4-Z4 WELL# MW-4 Zone 4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
2/18/14	2/18/14 (AM)			

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	Y	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterra
		B - PERISTALTIC PUMP	H - PURGE PUMP	H - WATERRA®	PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterra
					SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X=
		B - STAINLESS STEEL	E - POLYETHYLENE		PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X=
					SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X=
		B - TYGON	E - POLYETHYLENE		PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X=
					SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: _____ ODOR: _____ COLOR: _____ SHEEN Y/N _____

WEATHER CONDITIONS: TEMPERATURE _____ WINDY Y/N _____ PRECIPITATION Y/N (IF Y TYPE) _____

SPECIFIC COMMENTS: Drive 45, Vent 60 @ 125 PSI - off Gassing, less than 4 oz H_2O Produced

H_2S 0.5 ppm

Drive 30, Vent 100 @ 100 PSI - off Gassing No H_2O Produced

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 2/18/14 PRINT Christine Mathias SIGNATURE Christine Mathias

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 area 30 JOB# 074922
SAMPLE ID: GW-074922-024814-CM-MW-1(ER) WELL# MW-1-2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
2/18/14	2/18/14	1210		5L (CM) liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterra PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterra SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)
WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.30 (°C)	8.53 (std)	5.53 (g/L)	8522 (µS/cm)	1.10 (mg/L)	-388.5 (mV)	4 (gal) (CM)
13.46 (°C)	8.36 (std)	5.35 (g/L)	8536 (µS/cm)	5.38 (mg/L)	-261.7 (mV)	5 (gal) (CM) liters
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: sulfur COLOR: clear SHEEN Y/N none
WEATHER CONDITIONS: TEMPERATURE 55 WINDY Y/N breezy PRECIPITATION Y/N (IF Y TYPE)
SPECIFIC COMMENTS: 20d GOM @ 200 psi

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS
DATE 2/18/14 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-021814-(M-MW-1(23) WELL# MW-1 zone 3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
2/18/14	2/18/14	1355		3 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		for metals only

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.49 (°C)	8.82 (std)	2.691 (g/L)	4145 (µS/cm)	2.46 (mg/L)	-279.6 (mV)	1 (gal) Liter
12.69 (°C)	9.07 (std)	2779 (g/L)	4274 (µS/cm)	3.01 (mg/L)	-271.2 (mV)	2 (gal)
13.78 (°C)	9.12 (std)	2787 (g/L)	4289 (µS/cm)	2.82 (mg/L)	-278.7 (mV)	3 (gal) Liters
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: sulfur COLOR: clear SHEEN Y/N no
WEATHER CONDITIONS: TEMPERATURE 55° WINDY Y/N breezy PRECIPITATION Y/N (IF Y TYPE) no
SPECIFIC COMMENTS:

ending cycle ~115 psi, for 5 second drive and 20 second vent. Sulfur odor noticed during purging.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS
DATE 2/18/14 PRINT Christine Mathes SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-021914-CM-MW-1(E1) WELL# MW-1 Zone 1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
2/19/14	2/19/14	1005		6 (CM) 5.5 (EW) liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterra PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterra SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		for metals only

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
10.21 (°C)	6.45 (std)	3.405 (g/L)	5242 (µS/cm)	4.79 (mg/L)	-211.3 (mV)	1.5 (CM) liters
10.46 (°C)	7.00 (std)	3.690 (g/L)	5678 (µS/cm)	2.58 (mg/L)	-219.1 (mV)	3 (gal)
10.21 (°C)	6.53 (std)	3.699 (g/L)	5691 (µS/cm)	2.22 (mg/L)	-217.5 (mV)	4 (gal)
10.49 (°C)	6.80 (std)	3.800 (g/L)	5847 (µS/cm)	2.49 (mg/L)	-218.4 (mV)	5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	6 (CM) (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: sulfur COLOR: clear SHEEN Y/N: no
WEATHER CONDITIONS: TEMPERATURE: 40° WINDY Y/N: no PRECIPITATION Y/N (IF Y TYPE): no
SPECIFIC COMMENTS:

Duplicate collected @ 1030

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS
DATE 2/19/14 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: WELL# MW-1 Z4 & Z5

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
2/19/14				

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE: [X] A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER
X= Waterloo — PURGING DEVICE OTHER (SPECIFY)

SAMPLING DEVICE: [X] C - BLADDER PUMP
X= Waterloo — SAMPLING DEVICE OTHER (SPECIFY)

PURGING MATERIAL: [B] A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER
X= — PURGING MATERIAL OTHER (SPECIFY)

SAMPLING MATERIAL: [B] B - STAINLESS STEEL
X= — SAMPLING MATERIAL OTHER (SPECIFY)

PURGE TUBING: [E] A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER
X= — PURGE TUBING OTHER (SPECIFY)

SAMPLING TUBING: [E] E - POLYETHYLENE
X= — SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45: [ ] A - IN-LINE DISPOSABLE; B - PRESSURE

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ____ ODOR: ____ COLOR: ____ SHEEN Y/N ____

WEATHER CONDITIONS: TEMPERATURE ____ WINDY Y/N ____ PRECIPITATION Y/N (IF Y TYPE) ____

SPECIFIC COMMENTS:

Z4 - leaking @ manifold air line. Transducer data indicates dry however
Z5 - proven dry by running 10psi through line no resistance straight bubbles.
checked between 1/10-1/15

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 2/19/14 PRINT Christine Matteo SIGNATURE Christine Matteo

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 Area 30 JOB# 074922

SAMPLE ID: GW-074922-02114-BS-MW-3-72 WELL# MW-3 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
2/19/14	2/19/14	1040		4.5 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	Y	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterlow
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterlow
					SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X=
		B - STAINLESS STEEL	E - POLYETHYLENE		PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X=
					SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X=
		B - TYGON	E - POLYETHYLENE		PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X=
					SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
8.40 (°C)	8.62 (std)	3.714 (g/L)	5714 (µS/cm)	4.43 (mg/L)	-210.8 (mV)	2.5 (L) (gal)
~~9.87~~ (°C)	8.37 (std)	3.620 (g/L)	5675 (µS/cm)	1.57 (mg/L)	-223.8 (mV)	3.5 (L) (gal)
9.55 (°C)	8.75 (std)	3.695 (g/L)	5682 (µS/cm)	2.55 (mg/L)	-215.0 (mV)	4.5 (L) (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/N

WEATHER CONDITIONS: TEMPERATURE WINDY Y/N PRECIPITATION Y/N (IF Y TYPE)

SPECIFIC COMMENTS: Drive 40, Vent 45 @ 170 psi

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 2/19/14 PRINT Christine Mathews SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922

SAMPLE ID: GW-074922-021914-CM-MW-2-Z1 WELL# MW-2 Z1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
2/19/14	2/19/14	1230		4.0 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROFYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE	for metals only	

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
11.02 (°C)	6.65 (std)	1995 (g/L)	3134 (µS/cm)	3.02 (mg/L)	-252.6 (mV)	1.5 (gal)
10.65 (°C)	8.03 (std)	2108 (g/L)	3243 (µS/cm)	3.51 (mg/L)	-255.1 (mV)	3.0 (gal)
10.88 (°C)	8.07 (std)	2103 (g/L)	3238 (µS/cm)	2.53 (mg/L)	-264.5 (mV)	4.0 (gal) liters
	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: Sulfur COLOR: gray SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 150° WINDY Y/N yes PRECIPITATION Y/N (IF Y TYPE) no

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 2/19/14 PRINT Christine Mathers SIGNATURE Christine Mathers

1200 (CM)

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: SAN Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-041414-CM-MW-3(Z2) WELL# MW 3 Zone 2

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED ~~(GALLONS)~~ liters
4/14/14	4/14/14	1630		5L

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

PURGING DEVICE: X — A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER — X= Waterloo (PURGING DEVICE OTHER (SPECIFY))

SAMPLING DEVICE: X — X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))

PURGING MATERIAL: B — A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER — X= (PURGING MATERIAL OTHER (SPECIFY))

SAMPLING MATERIAL: B — X= (SAMPLING MATERIAL OTHER (SPECIFY))

PURGE TUBING: E — A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER — X= (PURGE TUBING OTHER (SPECIFY))

SAMPLING TUBING: E — X= (SAMPLING TUBING OTHER (SPECIFY))

FILTERING DEVICES 0.45: A — A - IN-LINE DISPOSABLE; B - PRESSURE

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
12.67 (°C)	6.23 (std)	3.218 (g/L)	4931 (µS/cm)	2.16 (mg/L)	-260.7 (mV)	1 L ~~(gal)~~
11.92 (°C)	6.79 (std)	3.233 (g/L)	4974 (µS/cm)	2.11 (mg/L)	-214.4 (mV)	3 L ~~(gal)~~
11.62 (°C)	7.95 (std)	3.251 (g/L)	5002 (µS/cm)	4.20 (mg/L)	-203.3 (mV)	5 L ~~(gal)~~
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Cloudy ODOR: sulfur COLOR: clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 50° WINDY Y/N yes PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS:

Air sample collected from MW-3 @ 1415 on 4/16/14. H_2S tube taken @ 1420. Result of 0ppm H_2S. 2 strokes @ 1 min each.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 4/14/14 PRINT Christine Mattews SIGNATURE [signature]

57.4 ppm H_2S in Water

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-041414-CM-MW-2(Z1) WELL# MW-2(Z1)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
4/14/14	4/14/14	1415 / 1445		7 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	[X]	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= water/oo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	[X]	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= water/oo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	[B]	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	[B]	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	[E]	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROFYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	[E]	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	[A]	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER ( ) (feet) WELL ELEVATION ( ) (feet)
WELL DEPTH ( ) (feet) GROUNDWATER ELEVATION ( ) (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
11.62 (°C)	6.76 (std)	1.850 (g/L)	2845 (µS/cm)	1.46 (mg/L)	269.8 (mV)	5 (gal) / liters
11.29 (°C)	7.63 (std)	1.839 (g/L)	2828 (µS/cm)	4.55 (mg/L)	-236.4 (mV)	7 (gal) cm
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mg/L)	( ) (mV)	( ) (gal)
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mg/L)	( ) (mV)	( ) (gal)
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mg/L)	( ) (mV)	( ) (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: sulfur COLOR: light gray SHEEN Y/N: no
WEATHER CONDITIONS: TEMPERATURE: 50° WINDY Y/N: yes PRECIPITATION Y/N (IF Y TYPE): none
SPECIFIC COMMENTS:

17s drive, 30s vent, @ 260 - solid stream
Air sample collected from MW-2 @ 1350 on 4/16/14. H2S tube @ 1400 with result of 100ppm

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS
DATE 4/14/14 PRINT Christina Mathews SIGNATURE Christina Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-041514-CM-MW-1(Z1) WELL# MW1 . Z1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
4/15/2014	4/15/2014	1130		6L

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE: X — A - SUBMERSIBLE PUMP, B - PERISTALTIC PUMP, C - BLADDER PUMP, D - GAS LIFT PUMP, E - PURGE PUMP, F - DIPPER BOTTLE, G - BAILER, H - WATERRA®, X - OTHER — X= waterloo (PURGING DEVICE OTHER (SPECIFY))

SAMPLING DEVICE: X — X= waterloo (SAMPLING DEVICE OTHER (SPECIFY))

PURGING MATERIAL: B — A - TEFLON, B - STAINLESS STEEL, C - POLYPROPYLENE, D - PVC, E - POLYETHYLENE, X - OTHER — X= (PURGING MATERIAL OTHER (SPECIFY))

SAMPLING MATERIAL: B — X= (SAMPLING MATERIAL OTHER (SPECIFY))

PURGE TUBING: E — A - TEFLON, B - TYGON, C - ROPE, D - POLYPROPYLENE, E - POLYETHYLENE, F - SILICONE, G - COMBINATION TEFLON/POLYPROPYLENE, X - OTHER — X= (PURGE TUBING OTHER (SPECIFY))

SAMPLING TUBING: E — X= (SAMPLING TUBING OTHER (SPECIFY))

FILTERING DEVICES 0.45: A — A - IN-LINE DISPOSABLE, B - PRESSURE

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
~~12.61~~ (°C)	~~5.27~~ (std)	~~.043~~ (g/L)	~~61~~ (µS/cm)		(mg/L) (mV)	~~2L~~ (gal) GW
12.84 (°C)	6.03 (std)	3.313 (g/L)	5097 (µS/cm)	2.00 (mg/L)	-227.5 (mV)	3L ~~(gal)~~ Liters
12.78 (°C)	6.71 (std)	1.777 (g/L)	2733 (µS/cm)	9.37 (mg/L)	-189.9 (mV)	4L ~~(gal)~~ L
13.06 (°C)	6.88 (std)	3.415 (g/L)	5252 (µS/cm)	1.79 (mg/L)	-196 (mV)	5L ~~(gal)~~ L
13.35 (°C)	6.97 (std)	3.412 (g/L)	5249 (µS/cm)	~~4~~ 3.40 (mg/L)	-193.7 (mV)	6L ~~(gal)~~ L

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: Slight COLOR: Clear SHEEN Y/N N

WEATHER CONDITIONS: TEMPERATURE 60°F WINDY Y/N Y PRECIPITATION Y/N (IF Y TYPE)

SPECIFIC COMMENTS:

80s drive, 45s vent, 280 psi - solid stream

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 4/15/14 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 area JOB# 074922
SAMPLE ID: GW-074922-041514-DM-MW-1(22) WELL# MW1-22

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED ~~(GALLONS)~~ Liters
4/15/14	4/15/14	1405		5L

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	[X]	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®
SAMPLING DEVICE	[X]	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER
PURGING MATERIAL	[B]	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE	
SAMPLING MATERIAL	[B]	C - POLYPROPYLENE	X - OTHER	
PURGE TUBING	[E]	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE
SAMPLING TUBING	[E]	C - ROPE	F - SILICONE	X - OTHER
FILTERING DEVICES 0.45	[A]	A - IN-LINE DISPOSABLE	B - PRESSURE	

X= waterloo — PURGING DEVICE OTHER (SPECIFY)
X= waterloo — SAMPLING DEVICE OTHER (SPECIFY)
X= — PURGING MATERIAL OTHER (SPECIFY)
X= — SAMPLING MATERIAL OTHER (SPECIFY)
X= — PURGE TUBING OTHER (SPECIFY)
X= — SAMPLING TUBING OTHER (SPECIFY)

FIELD MEASUREMENTS

DEPTH TO WATER [ ] (feet) WELL ELEVATION [ ] (feet)
WELL DEPTH [ ] (feet) GROUNDWATER ELEVATION [ ] (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.25 (°C)	7.08 (std)	4,223 (g/L)	6497 (µS/cm)	4.09 (mg/L)	-209.9 (mV)	1.5 (gal) Liters
12.53 (°C)	8.30 (std)	4,901 (g/L)	7539 (µS/cm)	6.66 (mg/L)	-220.4 (mV)	3.0 (gal) L
11.99 (°C)	8.29 (std)	4,890 (g/L)	7524 (µS/cm)	6.51 (mg/L)	-214.9 (mV)	4.5 (gal) L
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mg/L)	( ) (mV)	( ) (gal)
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mg/L)	( ) (mV)	( ) (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ~~Cloudy~~ Clear ODOR: Slight COLOR: grayish brown SHEEN Y/N N
WEATHER CONDITIONS: TEMPERATURE 65°F WINDY Y/N Y 5-10 mph PRECIPITATION Y/N (IF Y TYPE) N
SPECIFIC COMMENTS:

Bryce Frost came by and informed us he was going to turn back on the cathodic protection unit, aground which high LEL and ~~high~~ high H2S was present

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

4/15/14 (DATE) Christine Mathews (PRINT) (SIGNATURE)

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-04/514-CM-MW-1 (23) WELL# MW1-23

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
4/15/14	4/15/14	1720		3L liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)
WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
11.69 (°C)	8.01 (std)	2,477 (g/L)	3811 (µS/cm)	1.61 (mg/L)	-228.3 (mV)	1L (gal) Liters
10.53 (°C)	8.38 (std)	2.475 (g/L)	3808 (µS/cm)	4.10 (mg/L)	-207.2 (mV)	2L (gal) L
10.50 (°C)	8.71 (std)	1.335 (g/L)	2054 (µS/cm)	5.81 (mg/L)	-212.3 (mV)	3L (gal) L

FIELD COMMENTS

SAMPLE APPEARANCE: Clear ODOR: Slight COLOR: Slightly gray SHEEN Y/N N
WEATHER CONDITIONS: TEMPERATURE 35°F WINDY Y/N Y PRECIPITATION Y/N (IF Y TYPE) N
SPECIFIC COMMENTS:
Drive 90 mont 60 psi 120

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS
DATE 4/15/14 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 Area 30 JOB# 074922
SAMPLE ID: GW-074922-041614-Cm-MW4(Z1) WELL# MW4.Z1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED ~~(GALLONS)~~ Liters
4/16/14	4/16/14	1145		6.5L

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE: X — A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER — X= waterloo (PURGING DEVICE OTHER (SPECIFY))

SAMPLING DEVICE: X — X= waterloo (SAMPLING DEVICE OTHER (SPECIFY))

PURGING MATERIAL: B — A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER — X= (PURGING MATERIAL OTHER (SPECIFY))

SAMPLING MATERIAL: B — X= (SAMPLING MATERIAL OTHER (SPECIFY))

PURGE TUBING: E — A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER — X= (PURGE TUBING OTHER (SPECIFY))

SAMPLING TUBING: E — X= (SAMPLING TUBING OTHER (SPECIFY))

FILTERING DEVICES 0.45: A — A - IN-LINE DISPOSABLE; B - PRESSURE

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.22 (°C)	7.93 (std)	1.867 (g/L)	2887 (µS/cm)	1.97 (mg/L)	-343.8 (mV)	2 TM L ~~(gal)~~ Liters
14.31 (°C)	8.01 (std)	1.906 (g/L)	2934 (µS/cm)	1.28 (mg/L)	-359.2 (mV)	3 TM L ~~(gal)~~ L
14.76 (°C)	8.16 (std)	1.947 (g/L)	2997 (µS/cm)	.57 (mg/L)	-346.0 (mV)	4 TM L ~~(gal)~~ L
12.89 (°C)	7.17 (std)	2.032 (g/L)	3126 (µS/cm)	.60 (mg/L)	-366.9 (mV)	5 TM L ~~(gal)~~ L
13.71 (°C)	7.86 (std)	2.042 (g/L)	3141 (µS/cm)	1.30 (mg/L)	-325.6 (mV)	6 TM L ~~(gal)~~ L

FIELD COMMENTS

SAMPLE APPEARANCE: Cloudy ODOR: Sulfur COLOR: greyish SHEEN Y/N very slight sheen

WEATHER CONDITIONS: TEMPERATURE 65°F WINDY Y/N N PRECIPITATION Y/N (IF Y TYPE) N

SPECIFIC COMMENTS:

100ppm or greater H_2S from H_2O

Air Sample collected @ 1445, on 4/16/14. H_2S tube @ 1450. Initial tube exceeded 20ppm w/ one stroke. Use high range tube with a result of <10ppm. @1450 zone 2 Air port sample collected. No H_2S on detector tube. Dup air sample @ 1455.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 4/16/14 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 Area 30 JOB# ~~MW-22~~ 074922
SAMPLE ID: GW-074922-041614-CM-MW-4(22) WELL# MW-22

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED ~~(GALLONS)~~ Liters
4/16/14	4/16/14	1350		4.54

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	[X]	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
SAMPLING DEVICE	[X]	B - PERISTALTIC PUMP C - BLADDER PUMP	E - PURGE PUMP F - DIPPER BOTTLE	H - WATERRA® X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	[B]	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= (PURGING MATERIAL OTHER (SPECIFY))
SAMPLING MATERIAL	[B]	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	[E]	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
SAMPLING TUBING	[E]	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	[A]	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)
WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
12.85 (°C)	8.37 (std)	2.686 (g/L)	4137 (µS/cm)	5.07 (mg/L)	-339.0 (mV)	1.54 ~~(gal)~~ liters
12.84 (°C)	7.59 (std)	2.810 (g/L)	4322 (µS/cm)	1.96 (mg/L)	-332.1 (mV)	3.04 ~~(gal)~~ L
12.60 (°C)	8.57 (std)	2.297 (g/L)	3700 (µS/cm)	3.52 (mg/L)	-334.8 (mV)	4.54 ~~(gal)~~ L
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Cloudy ODOR: sulfur Y COLOR: grey SHEEN Y/N Slight
WEATHER CONDITIONS: TEMPERATURE 63°F WINDY Y/N Y PRECIPITATION Y/N (IF Y TYPE) N
SPECIFIC COMMENTS:
40 sec drive 45 sec vent @ 150 psi

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS
DATE 4/16/14 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 JOB# 074922

SAMPLE ID: GW-074922-081814-CM WELL# MW-2 (Z1)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
8/18/14	8/18/14	1500		5 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE: [X] A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER
X= water/DO — PURGING DEVICE OTHER (SPECIFY)

SAMPLING DEVICE: [ ] A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®; X - OTHER
X= water/DO — SAMPLING DEVICE OTHER (SPECIFY)

PURGING MATERIAL: [B] A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER
X= — PURGING MATERIAL OTHER (SPECIFY)

SAMPLING MATERIAL: [B] A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X - OTHER
X= — SAMPLING MATERIAL OTHER (SPECIFY)

PURGE TUBING: [E] A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER
X= — PURGE TUBING OTHER (SPECIFY)

SAMPLING TUBING: [E] A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X - OTHER
X= — SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45: [A] A - IN-LINE DISPOSABLE; B - PRESSURE

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
16.46 (°C)	8.06 (std)	1.931 (g/L)	2969 (µS/cm)	2.62 (mg/L)	-265.5 (mV)	3 (gal)
20.20 (°C)	8.42 (std)	1.939 (g/L)	2976 (µS/cm)	0.84 (mg/L)	-320.9 (mV)	4 (gal)
14.49 (°C)	8.08 (std)	1.926 (g/L)	2962 (µS/cm)	.93 (mg/L)	-306.1 (mV)	5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: none COLOR: clear SHEEN Y/N N

WEATHER CONDITIONS: TEMPERATURE 90°F WINDY Y/N N PRECIPITATION Y/N (IF Y TYPE) N

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: SJ 32-830 Area JOB# 074922

SAMPLE ID: GW-074922-081914-CM-MW-3(22) WELL# MW-3 (22)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
8/19/14	8/19/14	1020		3 Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER

X= waterloo PURGING DEVICE OTHER (SPECIFY)

X= waterloo SAMPLING DEVICE OTHER (SPECIFY)

PURGING MATERIAL	B	A - TEFLON	D - PVC	
		B - STAINLESS STEEL	E - POLYETHYLENE	
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER	

X= PURGING MATERIAL OTHER (SPECIFY)

X= SAMPLING MATERIAL OTHER (SPECIFY)

PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE
		B - TYGON	E - POLYETHYLENE	
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER

X= PURGE TUBING OTHER (SPECIFY)

X= SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45 [A] A - IN-LINE DISPOSABLE B - PRESSURE

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	~~TDS~~ SC	~~SC~~ TDS	DO	ORP	VOLUME
15.78 (°C)	7.23 (std)	4953 (g/L)	3.217 (µS/cm)	6.51 (mg/L)	-102.4 (mV)	1 (gal) / Liter
14.64 (°C)	7.03 (std)	4978 (g/L)	3.234 (µS/cm)	1.27 (mg/L)	-263.6 (mV)	2 (gal) / Liters
13.39 (°C)	7.03 (std)	4975 (g/L)	3.234 (µS/cm)	2.42 (mg/L)	-211.8 (mV)	3 (gal) / Liters
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: sulfur COLOR: clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 85° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE PRINT SIGNATURES

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 No. 30 JOB# 074922

SAMPLE ID: GW-074922-081914-CM-MW-1(ZZ) WELL# MW-1 (ZZ)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (~~GALLONS~~) liters
08/19/14	8/19/14	1400		2

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Water100
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Water 100
					SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X=
		B - STAINLESS STEEL	E - POLYETHYLENE		PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X=
					SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X=
		B - TYGON	E - POLYETHYLENE		PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X=
					SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
16.03 (°C)	5.82 (std)	4.754 (g/L)	7317 (µS/cm)	5.11 (mg/L)	-257.2 (mV)	1 L (gal)
20.17 (°C)	5.86 (std)	4.822 (g/L)	7419 (µS/cm)	3.14 (mg/L)	-319.9 (mV)	2 L (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Cloudy ODOR: Sulfur COLOR: Light grey SHEEN Y/N N

WEATHER CONDITIONS: TEMPERATURE 90°F WINDY Y/N No PRECIPITATION Y/N (IF Y TYPE) No

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 #30 JOB# 074922

SAMPLE ID: GW-074922-081914-(m-mw-1(23) WELL# MW-1 (23)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
8/19/14	8/19/14	1615		2 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= (PURGING MATERIAL OTHER (SPECIFY))
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
20.24 (°C)	6.00 (std)	2.298 (g/L)	3535 (µS/cm)	2.27 (mg/L)	-269.9 (mV)	1 (L / gal)
19.63 (°C)	6.12 (std)	2.276 (g/L)	3501 (µS/cm)	0.69 (mg/L)	-323.9 (mV)	2 (L / gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: Sulfur COLOR: very light gray SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 90°F WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-081914-(M-MW-1(Z1) WELL# MW-1(Z1)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATH (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
8/19/14	8/19/14 (cm)	0930		5 liters
# 8/20/14	8/20/14			

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

	TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
8/19/14	18.18 (°C)	4.92 (std)	3.449 (g/L)	5302 (µS/cm)	4.03 (mg/L)	-221.5 (mV)	3 (gal)
8/20/14	17.48 (°C)	7.20 (std)	3.441 (g/L)	5295 (µS/cm)	5.18 (mg/L)	-173.2 (mV)	4 (gal)
	17.59 (°C)	7.22 (std)	3.446 (g/L)	5302 (µS/cm)	3.85 (mg/L)	-154.0 (mV)	5 (gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
	(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: sulfur COLOR: yellow to clear SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE 90° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS:

Duplicate sample for Pace and Isotech collected from MW-1(Z1)

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30area JOB# 074922

SAMPLE ID: GW-074922-082014-OM-MW-4(Z1) WELL# MW-4 (Z1)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
8/20/14	8/20/14	1210		3 Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo
					SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X=
		B - STAINLESS STEEL	E - POLYETHYLENE		PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X=
					SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X=
		B - TYGON	E - POLYETHYLENE		PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X=
					SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
15.93 (°C)	7.02 (std)	2.035 (g/L)	3131 (µS/cm)	1.61 (mg/L)	-311.4 (mV)	1 (gal) L
16.13 (°C)	7.25 (std)	2.011 (g/L)	3093 (µS/cm)	1.68 (mg/L)	-335.5 (mV)	2 (gal) L
16.40 (°C)	7.39 (std)	2.006 (g/L)	3085 (µS/cm)	1.80 (mg/L)	-323.9 (mV)	3 (gal) L
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Slightly cloudy black particulates ODOR: Sulfur COLOR: light gray SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE 75° WINDY Y/N breezy/gusty PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS: 2 liters in bursts then steady with settings @ 270 psi, 500, & 60 V

BART changed within 30 minutes

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30area JOB# 074922

SAMPLE ID: GW-074922-082014-am-MW-4 (EZ) WELL# MW 4 (EZ)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL IN CASING (GALLONS)	ACTUAL VOL. PURGED (~~GALLONS~~)
8/20/14	8/20/14	1320		3 Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Water100 (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Water100 (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
16.29 (°C)	7.23 (std)	2.634 (g/L)	4052 (µS/cm)	1.28 (mg/L)	-344.8 (mV)	1 (~~gal~~) L
15.99 (°C)	6.59 (std)	2.878 (g/L)	4427 (µS/cm)	0.68 (mg/L)	-358.4 (mV)	3 (~~gal~~) L
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mg/L)	____ (mV)	____ (~~gal~~) L
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mg/L)	____ (mV)	____ (gal)
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mg/L)	____ (mV)	____ (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Slightly Cloudy / Black particulates ODOR: sulfur COLOR: light gray SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 75 WINDY Y/N yes PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE PRINT SIGNATURE

Send Data and Invoice to

Name: Christine Mathews

Company: Conestoga-Rovers & Assoc.

Address: 6121 Indian School #200
Albuquerque, NM 87110

Phone: 505-884-0672

Fax:

Email: cmathews@craworld.com

Project: San Juan 32-8 30 Area

Location: San Juan County, NM

Sampled by: CM, KW, EJ

ISOTECH

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Carbon & hydrogen Isotopes C1 & C2	Hydrocarbons Fixed Gases SG & BTU	Stable carbon Isotope of CO_2	Comments
	A-074922-081814-CM-MW-2	8-18-14 / 1300	X	X	X	
	A-074922-081814-CM-MW-3	8-18-14 / 1445	X	X	X	
	A-074922-081814-CM-MW-4(1)	8-18-14 / 1510	X	X	X	
	A-074922-082014-CM-MW-4(2)	8-18-14 / 1050	X	X	X	
	A-074922-081814-CM-DUP1	8-18-14 / —	X	X	X	
						* Please report and bill to Alice Flanagan with Pace Lenexa, KS 913-563-1409

* Standard turnaround

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	Christine Mathews [signature]	CRA	8/22/14	1430
Received by				
Relinquished by				
Received by				
Relinquished by				
Received by				

ISOTECH®

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Send Data and Invoice to

Name: Christine Mathews
Company: Conestoga-Rovers & Assoc.
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: CM, KW, ES

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Dissolved Methane	Analyses Requested: Oxygen & Hydrogen Isotopes 2H, 18O, 16		Comments
	GW-074922-081814-CM-MW-2 (Z1)	8-18-14 1500	X	X		
	GW-074922-081814 081920-CM-MW-3 (Z2)	8-19-14 1020	X	X		
	GW-074922-081914-CM-MW-1 (Z2)	8-19-14 1400	X	X		
	GW-074922-081914-CM-MW-1 (Z3)	9-19-14 1515	X	X		
	GW-074922-082014-CM-MW-1 (Z1)	8-20-14 0930	X	X		
	GW-074922-082014-CM-MW-4 (Z1)	8-20-14 1210	X	X		
	GW-074922-082014-CM-MW-4 (Z2)	8-20-14 1320	X	X		
	GW-074922-082014-CM-DUP1	8-20-14 —	X	X		

* Please report and bill to Alice Flanagan with Pace Lenexa, KS 913-563-1409

* Standard turn around

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	Christine Mathews (Electronic Signature)	CRA	8/22/14	1430
Received by				
Relinquished by				
Received by				
Relinquished by				
Received by				

Pace Analytical™
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: | of |

Section A Required Client Information:

Company:	CRA
Address:	6121 Indian School Rd NE, Ste 200
	Albequerque, NM 87110
Email To:	cmathews@craworld.com
Phone:	503-377-3920
Fax:	(505)884-4932
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Christine Mathews
Copy To:	
Purchase Order No.:	
Project Name:	Area 6 San Juan 32-8, 30 Area
Project Number:	

Section C Invoice Information:

Attention:	Angie Baum
Company Name:	CRA
Address:	
Pace Quote Reference:	No ENFOS by Pace
Pace Project Manager:	Alice Flanagan
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NM

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260 VOC's Full List (Y/N)	6010 Metals Dissolved*	2540 TDS	300.0 Cl, Br, S, bicarbona	4500 Sulfide	8015 TPH GRO and DRO	RSK175 dissolvd methane	TO-15 Full list VOC's/TPH	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074977-081814-(ML-MW-2(Z1))	WT	G			8.18.14	1500		3	1		1					1			X	X	X	X					
2	GW-074977-081914-(ML-MW-3(Z2))	WT	G			8.19.14	1620		3	1		1					1			X	X	X	X					
3	GW-074977-081914-(ML-MW-1(Z2))	WT	G			8.19.14	1400		3	1		1					1			X	X	X	X					
4	GW-074977-081914-(ML-MW-1(Z2))	WT	G			8.19.14	1515		3	1		1					1			X	X	X	X					
5	GW-074977-082014-(ML-MW-1(Z1))	WT	G			8.20.14	0930		3	1		1					1			X	X	X	X					
6	GW-074977-082014-(ML-MW4(Z1))	WT	G			8.20.14	1210		3	1		1					1			X	X	X	X					
7	GW-074977-082014-(ML-MW-4(Z2))	WT	G			8.20.14	1370		3	1		1					1			X	X	X	X					
8	GW-074977-082014-(ML-DUP-1)	WT	G			8.20.14	—		3	1		1					1			X	X	X	X					
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
*6010 Metals Dissolved; Mg, Ca, B, K, Na, Ba, Sr	[illegible]	8.21.14	1600				
RSK175 and TO15 direct ship to Pace Minnesota							
Direct ship to Airtech (EPA15/15 and ASTMD1946)							
Direct ship to Isotech (Isotopes, fixed gases)							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Christine Mathews

SIGNATURE of SAMPLER: [illegible] DATE Signed (MM/DD/YY): 08/21/14

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 No. 30 JOB# 074922

SAMPLE ID: GW-074922-102014-CM-MW2(1) WELL# MW-2(1)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/20/14	10/20/14	1615		3 liters (CM)

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	[X]	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Water 100
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	[X]	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Water 100
					SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	[B]	A - TEFLON	D - PVC		X=
		B - STAINLESS STEEL	E - POLYETHYLENE		PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	[B]	C - POLYPROPYLENE	X - OTHER		X=
					SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	[E]	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X=
		B - TYGON	E - POLYETHYLENE		PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	[E]	C - ROPE	F - SILICONE	X - OTHER	X=
					SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	[ ]	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.79 (°C)	7.23 (std)	2.184 (g/L)	3356 (µS/cm)	1.59 (mg/L)	-249.4 (mV)	2 (gal) (CM)
13.32 (°C)	7.08 (std)	2.139 (g/L)	3290 (µS/cm)	5.97 (mg/L)	-296.7 (mV)	3 (gal) (CM)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ~~sheen~~ (CM) ODOR: black (CM) sulfur COLOR: black SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE: 60° WINDY Y/N: no PRECIPITATION Y/N (IF Y TYPE): none

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE: 10/20/14 PRINT: Christine Mathews SIGNATURE: [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-102114-CM-MW-3(22) WELL# MW-3(22)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/21/14	10/21/14	1034		3 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
12.08 (°C)	6.26 (std)	3.640 (g/L)	5601 (µS/cm)	7.03 (mg/L)	30.6 (mV)	1 (gal)
12.07 (°C)	6.31 (std)	3.675 (g/L)	5654 (µS/cm)	3.54 (mg/L)	-37.9 (mV)	2 (gal)
12.16 (°C)	6.17 (std)	3.698 (g/L)	5689 (µS/cm)	1.94 (mg/L)	-233.8 (mV)	3 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: sulfur COLOR: clear SHEEN Y/N: no
WEATHER CONDITIONS: TEMPERATURE: 65° WINDY Y/N: breezy PRECIPITATION Y/N (IF Y TYPE): none
SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/21/14 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-102114CM-MW1-Z1 WELL# MW-1 Z1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/21/14	10/21/14	1200		3

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Water 100
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Water 100
					SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X=
		B - STAINLESS STEEL	E - POLYETHYLENE		PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X=
					SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X=
		B - TYGON	E - POLYETHYLENE		PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X=
					SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.66 (°C)	5.90 (std)	3895 (g/L)	5993 (µS/cm)	8.21 (mg/L)	-218.1 (mV)	1 (gal)
15.59 (°C)	6.28 (std)	3.906 (g/L)	6008 (µS/cm)	4.15 (mg/L)	-256.8 (mV)	2 (gal)
15.45 (°C)	6.29 (std)	3.902 (g/L)	6003 (µS/cm)	1.79 (mg/L)	-246.2 (mV)	3 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Cloudy Clear (CM) ODOR: Sulfur COLOR: clear SHEEN Y/N none
WEATHER CONDITIONS: TEMPERATURE 65° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) none
SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/21/14 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: GW San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-102114-CM-MW-1(EZ) WELL# MW-1(EZ)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/21/14	10/21/14	1305		3 CM liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.10 (°C)	7.59 (std)	5.506 (g/L)	8453 (µS/cm)	11.86 (mg/L)	-276.9 (mV)	1 (gal) L
13.67 (°C)	8.11 (std)	5.237 (g/L)	8181 (µS/cm)	6.34 (mg/L)	-272.1 (mV)	3 (gal) CM L
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mg/L)	____ (mV)	____ (gal)
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mg/L)	____ (mV)	____ (gal)
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mg/L)	____ (mV)	____ (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Cloudy ODOR: Sulfur COLOR: yellow SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE: 60° WINDY Y/N: none PRECIPITATION Y/N (IF Y TYPE): none

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/21/14 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: _____ JOB# 074922

SAMPLE ID: GW-074922-1021-CM-MW1-Z3 WELL# MW-1.Z3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL IN CASING (GALLONS)	ACTUAL VOL PURGED (GALLONS)
10/21/14	10/21/14	1500		2 Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	[X]	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	[X]	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterflow SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	[B]	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	[B]	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	[E]	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	[E]	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	[ ]	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.10 (°C)	8.14 (std)	2.633 (g/L)	4041 (µS/cm)	4.21 (mg/L)	-245.6 (mV)	1 (gal)
14.35 (°C)	8.42 (std)	2595 (g/L)	3994 (µS/cm)	4.31 (mg/L)	-273.6 (mV)	2 (gal)
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mg/L)	( ) (mV)	( ) (gal)
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mg/L)	( ) (mV)	( ) (gal)
( ) (°C)	( ) (std)	( ) (g/L)	( ) (µS/cm)	( ) (mg/L)	( ) (mV)	( ) (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slightly cloudy ODOR: sulfur COLOR: yellow/clear SHEEN Y/N: no

WEATHER CONDITIONS: TEMPERATURE: 60° WINDY Y/N: no PRECIPITATION Y/N (IF Y TYPE): none

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/21/14 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922

SAMPLE ID: GW-074922-102214-CM-MW-4(21) WELL# MW-4(21)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/22/14	10/22/14	1230		4 (CM) Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
15.03 (°C)	7.65 (std)	2.252 (g/L)	3464 (µS/cm)	3.14 (mg/L)	-321.9 (mV)	1 (L) (CM)
14.79 (°C)	7.25 (std)	2.252 (g/L)	3464 (µS/cm)	2.87 (mg/L)	-346.9 (mV)	2 (L) (CM)
14.25 (°C)	7.73 (std)	2.399 (g/L)	3692 (µS/cm)	1.46 (mg/L)	-342.9 (mV)	4 (L) (CM)
14.25 (°C) (CM)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: sulfur COLOR: light gray SHEEN Y/N none

WEATHER CONDITIONS: TEMPERATURE 65° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/22/14 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-102214-CM-MW-4(22) WELL# MW-4(22)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/22/14	10/22/14	1405		3 Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)
WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.92 (°C)	7.45 (std)	4931.89 (g/L)	4905 (µS/cm)	2.38 (mg/L)	-336.9 (mV)	1 (gal) CM L
15.75 (°C)	7.70 (std)	3.365 (g/L)	5176 (µS/cm)	1.64 (mg/L)	-356.1 (mV)	2 (gal) CM L
16.06 (°C)	7.75 (std)	3.400 (g/L)	5230 (µS/cm)	1.01 (mg/L)	-408.3 (mV)	3 (gal) CM L
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slightly cloudy ODOR: Sulfur COLOR: gray SHEEN Y/N no
WEATHER CONDITIONS: TEMPERATURE 65° WINDY Y/N breezy PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS:
Vent 30 Drive 13 250 psi
a liter of H2O @ a time befor
a blow out.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/22/14 PRINT Christine Mathews SIGNATURE [signature]

500

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 No. 30 JOB# 074922

SAMPLE ID: GW-074922-102014-CM-MW2Z1 WELL# MW-2(1)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/20/14	10/20/14	1615		3 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED Y N (CIRCLE ONE)

PURGING DEVICE: X — A - SUBMERSIBLE PUMP, B - PERISTALTIC PUMP, D - GAS LIFT PUMP, E - PURGE PUMP, G - BAILER, H - WATERRA®

X= Water 100 — PURGING DEVICE OTHER (SPECIFY)

SAMPLING DEVICE: X — C - BLADDER PUMP, F - DIPPER BOTTLE, X - OTHER

X= Water 100 — SAMPLING DEVICE OTHER (SPECIFY)

PURGING MATERIAL: B — A - TEFLON, B - STAINLESS STEEL, D - PVC, E - POLYETHYLENE

X= — PURGING MATERIAL OTHER (SPECIFY)

SAMPLING MATERIAL: B — C - POLYPROPYLENE, X - OTHER

X= — SAMPLING MATERIAL OTHER (SPECIFY)

PURGE TUBING: E — A - TEFLON, B - TYGON, D - POLYPROPYLENE, E - POLYETHYLENE, G - COMBINATION TEFLON/POLYPROPYLENE

X= — PURGE TUBING OTHER (SPECIFY)

SAMPLING TUBING: E — C - ROPE, F - SILICONE, X - OTHER

X= — SAMPLING TUBING OTHER (SPECIFY)

FILTERING DEVICES 0.45: A - IN-LINE DISPOSABLE, B - PRESSURE

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)

WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.79 (°C)	7.23 (std)	2.184 (g/L)	3356 (µS/cm)	1.59 (mg/L)	-249.4 (mV)	2 (gal)
13.32 (°C)	7.08 (std)	2.139 (g/L)	3290 (µS/cm)	5.97 (mg/L)	-296.7 (mV)	3 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ~~sulphur~~ ODOR: black sulfur COLOR: black SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 60° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/20/14 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-102114-CM-MW-3(22) WELL# MW-3 (22)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/21/14	10/21/14	1034		3 liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= water loo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= water loo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)
WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
~~10~~ 12.08 (°C)	6.26 (std)	3.640 (g/L)	5601 (µS/cm)	7.03 (mg/L)	30.6 (mV)	1 (gal)
12.07 (°C)	6.31 (std)	3.675 (g/L)	5654 (µS/cm)	3.54 (mg/L)	-37.9 (mV)	2 (gal)
12.16 (°C)	6.17 (std)	3.698 (g/L)	5689 (µS/cm)	1.94 (mg/L)	-233.8 (mV)	3 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: sulfur COLOR: clear SHEEN Y/N: no
WEATHER CONDITIONS: TEMPERATURE: 65° WINDY Y/N: breezy PRECIPITATION Y/N (IF Y TYPE): none
SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/21/14 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: EW-074922-102114cm-MW1-Z1 WELL# MW-1 Z1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/21/14	10/21/14	1200		3

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Water 100
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Water 100
					SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X=
		B - STAINLESS STEEL	E - POLYETHYLENE		PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X=
					SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X=
		B - TYGON	E - POLYETHYLENE		PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X=
					SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
13.66 (°C)	5.90 (std)	3895 (g/L)	5993 (µS/cm)	8.21 (mg/L)	218.1 (mV)	1 (gal)
15.59 (°C)	6.28 (std)	3.906 (g/L)	6008 (µS/cm)	4.15 (mg/L)	256.8 (mV)	2 (gal)
15.45 (°C)	6.29 (std)	3.902 (g/L)	6003 (µS/cm)	1.79 (mg/L)	246.2 (mV)	3 (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ~~clear~~ cm ODOR: Sulfur COLOR: clear SHEEN Y/N none
WEATHER CONDITIONS: TEMPERATURE 65° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) none
SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/21/14 PRINT Christine Mathews SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-102114-CM-MW-1(E2) WELL# MW-1(E2)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/21/14	10/21/14	1305		3 gal liters

FURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterloo SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.10 (°C)	7.59 (std)	5.506 (g/L)	8453 (µS/cm)	11.86 (mg/L)	-276.9 (mV)	1 (gal)
13.67 (°C)	8.11 (std)	5.237 (g/L)	8181 (µS/cm)	6.34 (mg/L)	-272.1 (mV)	3 (gal)
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mg/L)	____ (mV)	____ (gal)
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mg/L)	____ (mV)	____ (gal)
____ (°C)	____ (std)	____ (g/L)	____ (µS/cm)	____ (mg/L)	____ (mV)	____ (gal)

FIELD COMMENTS

SAMPLE APPEARANCE: Cloudy ODOR: Sulfur COLOR: yellow SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 60° WINDY Y/N none PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/21/14 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: _____ JOB# 074922

SAMPLE ID: GW-074922-1021-CM-MW1-Z3 WELL# MW-1.Z3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/21/14	10/21/14	1500		2 Liters (CM)

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	[X]	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= Waterloo
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	[X]	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= Waterflow
					SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	[B]	A - TEFLON	D - PVC		X=
		B - STAINLESS STEEL	E - POLYETHYLENE		PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	[B]	C - POLYPROPYLENE	X - OTHER		X=
					SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	[E]	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X=
		B - TYGON	E - POLYETHYLENE		PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	[E]	C - ROPE	F - SILICONE	X - OTHER	X=
					SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45	[ ]	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER _____ (feet) WELL ELEVATION _____ (feet)

WELL DEPTH _____ (feet) GROUNDWATER ELEVATION _____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.10 (°C)	8.16 (std)	2.633 (g/L)	4041 (µS/cm)	4.21 (mg/L)	-245.6 (mV)	1 (gal) (W)
14.35 (°C)	8.42 (std)	2595 (g/L)	3994 (µS/cm)	4.31 (mg/L)	-273.6 (mV)	2 (gal) (CM)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slightly cloudy ODOR: sulfur COLOR: yellow/clear SHEEN Y/N no

WEATHER CONDITIONS: TEMPERATURE 60° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS: _____

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/21/14 PRINT Christine Mathuss SIGNATURE [signature]

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922

SAMPLE ID: GW-074922-10224-(M-MW-4(21) WELL# MW-4(21)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/22/14	10/22/14	1230		4 (CM) Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER ____ (feet) WELL ELEVATION ____ (feet)

WELL DEPTH ____ (feet) GROUNDWATER ELEVATION ____ (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
15.03 (°C)	7.65 (std)	2.252 (g/L)	3461 (µS/cm)	3.14 (mg/L)	-321.9 (mV)	1 (L) (CM)
14.79 (°C)	7.25 (std)	2.252 (g/L)	3464 (µS/cm)	2.87 (mg/L)	-346.9 (mV)	2 (L) (CM)
14.25 (°C)	7.73 (std)	2.399 (g/L)	3692 (µS/cm)	1.46 (mg/L)	-342.9 (mV)	4 (L) (CM)
14.25 (°C) (CM)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: sulfur COLOR: light gray SHEEN Y/N none

WEATHER CONDITIONS: TEMPERATURE 65° WINDY Y/N no PRECIPITATION Y/N (IF Y TYPE) none

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/22/14 PRINT Christine Mathews SIGNATURE Christine Mathews

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: San Juan 32-8 30 Area JOB# 074922
SAMPLE ID: GW-074922-102214-CM-MW-4(22) WELL# MW-4(22)

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
10/22/14	10/22/14	1405		3 CM Liters

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)
SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	X	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= waterloo (PURGING DEVICE OTHER (SPECIFY))
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	X	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= waterloo (SAMPLING DEVICE OTHER (SPECIFY))
PURGING MATERIAL	B	A - TEFLON	D - PVC		X= (PURGING MATERIAL OTHER (SPECIFY))
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	B	C - POLYPROPYLENE	X - OTHER		X= (SAMPLING MATERIAL OTHER (SPECIFY))
PURGE TUBING	E	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= (PURGE TUBING OTHER (SPECIFY))
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	E	C - ROPE	F - SILICONE	X - OTHER	X= (SAMPLING TUBING OTHER (SPECIFY))
FILTERING DEVICES 0.45	N/A	A - IN-LINE DISPOSABLE	B - PRESSURE		

FIELD MEASUREMENTS

DEPTH TO WATER (feet) WELL ELEVATION (feet)
WELL DEPTH (feet) GROUNDWATER ELEVATION (feet)

TEMPERATURE	pH	TDS	SC	DO	ORP	VOLUME
14.92 (°C)	7.45 (std)	4.93 (g/L)	4905 (µS/cm)	2.38 (mg/L)	-336.9 (mV)	1 (gal) CM L
15.75 (°C)	7.70 (std)	3.365 (g/L)	5176 (µS/cm)	1.64 (mg/L)	-356.1 (mV)	2 (gal) CM L
16.06 (°C)	7.75 (std)	3.400 (g/L)	5230 (µS/cm)	1.01 (mg/L)	-408.3 (mV)	3 (gal) CM L
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mg/L)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: slightly cloudy ODOR: Sulfur COLOR: gray SHEEN Y/N no
WEATHER CONDITIONS: TEMPERATURE 65° WINDY Y/N breezy PRECIPITATION Y/N (IF Y TYPE) none
SPECIFIC COMMENTS:

Vent, 30, Drive 13, 250 psi
a liter of H2O @ a time before
a blow out.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE 10/22/14 PRINT Christine Mathews SIGNATURE

Appendix B

Laboratory Analytical Reports

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 26, 2012

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on December 12, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa
Cassie Brown, COP Conestoga-Rovers & Associa
Joshua Kirchner, COP Conestoga-Rovers & Associa
Hector Narez, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 12-019-0
Illinois Certification #: 002885
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-12-3
Utah Certification #: KS000212012-2

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SAMPLE SUMMARY

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60135194001	GW-074922-121012-CM-MW-1 (Z1)	Water	12/10/12 13:50	12/12/12 08:40
60135194002	GW-074922-121012-CM-MW-1 (Z2)	Water	12/10/12 14:20	12/12/12 08:40
60135194003	GW-074922-121012-CM-MW-1 (Z3)	Water	12/10/12 16:00	12/12/12 08:40
60135194004	GW-074922-121012-CM-MW-1 (DUP)	Water	12/10/12 14:30	12/12/12 08:40
60135194005	GW-074922-121112-CM-MW-1 (Z3)	Water	12/11/12 11:00	12/12/12 08:40

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SAMPLE ANALYTE COUNT

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60135194001	GW-074922-121012-CM-MW-1 (Z1)	EPA 8015B	NAW	3	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 6010	JGP, SMW	5	PASI-K
		EPA 5030B/8260	PRG	70	PASI-K
		SM 2320B	DJR	2	PASI-K
		SM 2540C	AJM	1	PASI-K
		SM 4500-S-2 F	SEL	1	PASI-K
		EPA 300.0	AJM	3	PASI-K
60135194002	GW-074922-121012-CM-MW-1 (Z2)	EPA 8015B	NAW	3	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 6010	JGP, SMW	5	PASI-K
		EPA 5030B/8260	PRG	70	PASI-K
		SM 2320B	DJR	2	PASI-K
		SM 2540C	AJM	1	PASI-K
		SM 4500-S-2 F	SEL	1	PASI-K
		EPA 300.0	AJM	3	PASI-K
60135194003	GW-074922-121012-CM-MW-1 (Z3)	EPA 8015B	NAW	3	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 5030B/8260	PRG	70	PASI-K
		SM 2320B	DJR	2	PASI-K
		SM 2540C	AJM	1	PASI-K
		SM 4500-S-2 F	SEL	1	PASI-K
		EPA 300.0	AJM	3	PASI-K
60135194004	GW-074922-121012-CM-MW-1 (DUP)	EPA 5030B/8260	PRG	70	PASI-K
60135194005	GW-074922-121112-CM-MW-1 (Z3)	EPA 6010	SMW	5	PASI-K

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PROJECT NARRATIVE

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 26, 2012

General Information:
3 samples were analyzed for EPA 8015B. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C 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.

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: GCSV/13693

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

Additional Comments:

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PROJECT NARRATIVE

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Method: **EPA 5030B/8015B**
Description: Gasoline Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 26, 2012

General Information:
3 samples were analyzed for EPA 5030B/8015B. 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: GCV/4169

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

Additional Comments:

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PROJECT NARRATIVE

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 26, 2012

General Information:
3 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

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.

Additional Comments:

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PROJECT NARRATIVE

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 26, 2012

General Information:
4 samples were analyzed for EPA 5030B/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.

QC Batch: MSV/50902

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 1117012)
  - Isopropylbenzene (Cumene)

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

QC Batch: MSV/50872

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

QC Batch: MSV/50902

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

Additional Comments:

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PROJECT NARRATIVE

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 26, 2012

General Information:
3 samples were analyzed for SM 2320B. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 26, 2012

General Information:
3 samples were analyzed for SM 2540C. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Method: **SM 4500-S-2 F**
Description: 4500S2F Sulfide, Iodometric
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 26, 2012

General Information:
3 samples were analyzed for SM 4500-S-2 F. 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.

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.

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

Additional Comments:

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Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 26, 2012

General Information:
3 samples were analyzed for EPA 300.0. 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.

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.

Additional Comments:

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

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (Z1) **Lab ID: 60135194001** Collected: 12/10/12 13:50 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	ND	mg/L	0.50	0.16	1	12/12/12 00:00	12/17/12 17:00		
Surrogates									
p-Terphenyl (S)	71	%	35-121		1	12/12/12 00:00	12/17/12 17:00	92-94-4	
n-Tetracosane (S)	69	%	35-120		1	12/12/12 00:00	12/17/12 17:00	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50	0.12	1		12/13/12 19:01		
Surrogates									
4-Bromofluorobenzene (S)	89	%	70-130		1		12/13/12 19:01	460-00-4	
Preservation pH	**1.0**				1		12/13/12 19:01		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**242**	ug/L	100	1.8	1	12/18/12 16:00	12/21/12 19:04	7440-42-8	
Calcium, Dissolved	**429000**	ug/L	100	35.8	1	12/18/12 16:00	12/21/12 19:04	7440-70-2	
Magnesium, Dissolved	**10800**	ug/L	50.0	17.2	1	12/18/12 16:00	12/21/12 19:04	7439-95-4	
Potassium, Dissolved	**15700**	ug/L	500	64.1	1	12/18/12 16:00	12/21/12 19:04	7440-09-7	
Sodium, Dissolved	**813000**	ug/L	10000	802	20	12/18/12 16:00	12/26/12 09:46	7440-23-5	M6
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	1.1	1		12/18/12 17:45	67-64-1	
Benzene	ND	ug/L	1.0	0.098	1		12/18/12 17:45	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.14	1		12/18/12 17:45	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.35	1		12/18/12 17:45	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.13	1		12/18/12 17:45	75-27-4	
Bromoform	ND	ug/L	1.0	0.13	1		12/18/12 17:45	75-25-2	
Bromomethane	ND	ug/L	5.0	0.17	1		12/18/12 17:45	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	3.2	1		12/18/12 17:45	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.047	1		12/18/12 17:45	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.075	1		12/18/12 17:45	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.46	1		12/18/12 17:45	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.060	1		12/18/12 17:45	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.097	1		12/18/12 17:45	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.12	1		12/18/12 17:45	108-90-7	
Chloroethane	ND	ug/L	1.0	0.27	1		12/18/12 17:45	75-00-3	
Chloroform	**4.5**	ug/L	1.0	0.13	1		12/18/12 17:45	67-66-3	
Chloromethane	ND	ug/L	1.0	0.076	1		12/18/12 17:45	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.062	1		12/18/12 17:45	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.12	1		12/18/12 17:45	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.80	1		12/18/12 17:45	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.18	1		12/18/12 17:45	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.18	1		12/18/12 17:45	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		12/18/12 17:45	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.15	1		12/18/12 17:45	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.18	1		12/18/12 17:45	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.092	1		12/18/12 17:45	106-46-7	

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (Z1) **Lab ID: 60135194001** Collected: 12/10/12 13:50 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.097	1		12/18/12 17:45	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.18	1		12/18/12 17:45	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		12/18/12 17:45	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.31	1		12/18/12 17:45	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.18	1		12/18/12 17:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.15	1		12/18/12 17:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.23	1		12/18/12 17:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		12/18/12 17:45	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.16	1		12/18/12 17:45	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.38	1		12/18/12 17:45	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.049	1		12/18/12 17:45	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.079	1		12/18/12 17:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/18/12 17:45	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.23	1		12/18/12 17:45	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.22	1		12/18/12 17:45	87-68-3	
2-Hexanone	ND	ug/L	10.0	2.4	1		12/18/12 17:45	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.11	1		12/18/12 17:45	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.11	1		12/18/12 17:45	99-87-6	
Methylene chloride	**3.6**	ug/L	1.0	0.24	1		12/18/12 17:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.46	1		12/18/12 17:45	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.083	1		12/18/12 17:45	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.11	1		12/18/12 17:45	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.088	1		12/18/12 17:45	103-65-1	
Styrene	ND	ug/L	1.0	0.14	1		12/18/12 17:45	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.21	1		12/18/12 17:45	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.086	1		12/18/12 17:45	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.13	1		12/18/12 17:45	127-18-4	
Toluene	**1.0**	ug/L	1.0	0.15	1		12/18/12 17:45	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.22	1		12/18/12 17:45	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.12	1		12/18/12 17:45	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.071	1		12/18/12 17:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.15	1		12/18/12 17:45	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.12	1		12/18/12 17:45	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.067	1		12/18/12 17:45	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.32	1		12/18/12 17:45	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.068	1		12/18/12 17:45	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.076	1		12/18/12 17:45	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.12	1		12/18/12 17:45	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.41	1		12/18/12 17:45	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		12/18/12 17:45	460-00-4	
Dibromofluoromethane (S)	96	%	80-120		1		12/18/12 17:45	1868-53-7	
1,2-Dichloroethane-d4 (S)	103	%	80-120		1		12/18/12 17:45	17060-07-0	
Toluene-d8 (S)	104	%	80-120		1		12/18/12 17:45	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		12/18/12 17:45		

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (Z1) **Lab ID: 60135194001** Collected: 12/10/12 13:50 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**93.7**	mg/L	20.0	1.2	1		12/17/12 09:23		
Alkalinity, Total as CaCO3	**93.7**	mg/L	20.0	1.2	1		12/17/12 09:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**3930**	mg/L	5.0	5.0	1		12/13/12 12:47		
4500S2F Sulfide, Iodometric	Analytical Method: SM 4500-S-2 F								
Sulfide	ND	mg/L	0.50	0.24	1		12/17/12 16:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	**1.4**	mg/L	1.0	0.059	1		12/13/12 11:53	24959-67-9	
Chloride	**135**	mg/L	10.0	5.0	10		12/13/12 22:02	16887-00-6	
Sulfate	**2700**	mg/L	500	170	500		12/13/12 22:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (Z2) **Lab ID: 60135194002** Collected: 12/10/12 14:20 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	**5.3**	mg/L	0.50	0.16	1	12/12/12 00:00	12/17/12 17:07		
Surrogates									
p-Terphenyl (S)	56	%	35-121		1	12/12/12 00:00	12/17/12 17:07	92-94-4	
n-Tetracosane (S)	48	%	35-120		1	12/12/12 00:00	12/17/12 17:07	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50	0.12	1		12/13/12 19:23		
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		1		12/13/12 19:23	460-00-4	
Preservation pH	**1.0**				1		12/13/12 19:23		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**156**	ug/L	100	1.8	1	12/18/12 16:00	12/21/12 19:18	7440-42-8	
Calcium, Dissolved	**287000**	ug/L	100	35.8	1	12/18/12 16:00	12/21/12 19:18	7440-70-2	
Magnesium, Dissolved	**8440**	ug/L	50.0	17.2	1	12/18/12 16:00	12/21/12 19:18	7439-95-4	
Potassium, Dissolved	**14700**	ug/L	500	64.1	1	12/18/12 16:00	12/21/12 19:18	7440-09-7	
Sodium, Dissolved	**580000**	ug/L	5000	401	10	12/18/12 16:00	12/26/12 10:00	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**91.4**	ug/L	50.0	5.5	5		12/19/12 12:19	67-64-1	
Benzene	ND	ug/L	5.0	0.49	5		12/19/12 12:19	71-43-2	
Bromobenzene	ND	ug/L	5.0	0.70	5		12/19/12 12:19	108-86-1	
Bromochloromethane	ND	ug/L	5.0	1.8	5		12/19/12 12:19	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	0.65	5		12/19/12 12:19	75-27-4	
Bromoform	ND	ug/L	5.0	0.65	5		12/19/12 12:19	75-25-2	
Bromomethane	ND	ug/L	25.0	0.85	5		12/19/12 12:19	74-83-9	
2-Butanone (MEK)	**1020**	ug/L	50.0	16.0	5		12/19/12 12:19	78-93-3	
n-Butylbenzene	ND	ug/L	5.0	0.24	5		12/19/12 12:19	104-51-8	
sec-Butylbenzene	ND	ug/L	5.0	0.38	5		12/19/12 12:19	135-98-8	
tert-Butylbenzene	ND	ug/L	5.0	2.3	5		12/19/12 12:19	98-06-6	
Carbon disulfide	ND	ug/L	25.0	0.30	5		12/19/12 12:19	75-15-0	
Carbon tetrachloride	ND	ug/L	5.0	0.48	5		12/19/12 12:19	56-23-5	
Chlorobenzene	ND	ug/L	5.0	0.60	5		12/19/12 12:19	108-90-7	
Chloroethane	ND	ug/L	5.0	1.4	5		12/19/12 12:19	75-00-3	
Chloroform	**8.5**	ug/L	5.0	0.65	5		12/19/12 12:19	67-66-3	
Chloromethane	ND	ug/L	5.0	0.38	5		12/19/12 12:19	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	0.31	5		12/19/12 12:19	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	0.60	5		12/19/12 12:19	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	12.5	4.0	5		12/19/12 12:19	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	0.90	5		12/19/12 12:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	0.90	5		12/19/12 12:19	106-93-4	
Dibromomethane	ND	ug/L	5.0	1.0	5		12/19/12 12:19	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	0.75	5		12/19/12 12:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.90	5		12/19/12 12:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	0.46	5		12/19/12 12:19	106-46-7	

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (Z2) **Lab ID: 60135194002** Collected: 12/10/12 14:20 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	5.0	0.48	5		12/19/12 12:19	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	0.90	5		12/19/12 12:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	0.60	5		12/19/12 12:19	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	5.0	1.6	5		12/19/12 12:19	540-59-0	
1,1-Dichloroethene	ND	ug/L	5.0	0.90	5		12/19/12 12:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	0.75	5		12/19/12 12:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1.2	5		12/19/12 12:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	0.70	5		12/19/12 12:19	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	0.80	5		12/19/12 12:19	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	1.9	5		12/19/12 12:19	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.24	5		12/19/12 12:19	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	0.40	5		12/19/12 12:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	0.65	5		12/19/12 12:19	10061-02-6	
Ethylbenzene	ND	ug/L	5.0	1.2	5		12/19/12 12:19	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	1.1	5		12/19/12 12:19	87-68-3	
2-Hexanone	ND	ug/L	50.0	12.0	5		12/19/12 12:19	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	5.0	0.55	5		12/19/12 12:19	98-82-8	L3
p-Isopropyltoluene	ND	ug/L	5.0	0.55	5		12/19/12 12:19	99-87-6	
Methylene chloride	ND	ug/L	5.0	1.2	5		12/19/12 12:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	50.0	2.3	5		12/19/12 12:19	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.0	0.42	5		12/19/12 12:19	1634-04-4	
Naphthalene	ND	ug/L	50.0	0.55	5		12/19/12 12:19	91-20-3	
n-Propylbenzene	ND	ug/L	5.0	0.44	5		12/19/12 12:19	103-65-1	
Styrene	ND	ug/L	5.0	0.70	5		12/19/12 12:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	1.0	5		12/19/12 12:19	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	0.43	5		12/19/12 12:19	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	0.65	5		12/19/12 12:19	127-18-4	
Toluene	ND	ug/L	5.0	0.75	5		12/19/12 12:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	1.1	5		12/19/12 12:19	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	0.60	5		12/19/12 12:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	5.0	0.36	5		12/19/12 12:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	0.75	5		12/19/12 12:19	79-00-5	
Trichloroethene	ND	ug/L	5.0	0.60	5		12/19/12 12:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	0.34	5		12/19/12 12:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	12.5	1.6	5		12/19/12 12:19	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	5.0	0.34	5		12/19/12 12:19	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	5.0	0.38	5		12/19/12 12:19	108-67-8	
Vinyl chloride	ND	ug/L	5.0	0.60	5		12/19/12 12:19	75-01-4	
Xylene (Total)	ND	ug/L	15.0	2.0	5		12/19/12 12:19	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		5		12/19/12 12:19	460-00-4	
Dibromofluoromethane (S)	97	%	80-120		5		12/19/12 12:19	1868-53-7	
1,2-Dichloroethane-d4 (S)	107	%	80-120		5		12/19/12 12:19	17060-07-0	
Toluene-d8 (S)	109	%	80-120		5		12/19/12 12:19	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	5		12/19/12 12:19		

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (Z2) **Lab ID: 60135194002** Collected: 12/10/12 14:20 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**345**	mg/L	20.0	1.2	1		12/17/12 09:28		
Alkalinity, Total as CaCO3	**345**	mg/L	20.0	1.2	1		12/17/12 09:28		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**2690**	mg/L	5.0	5.0	1		12/13/12 12:47		
4500S2F Sulfide, Iodometric	Analytical Method: SM 4500-S-2 F								
Sulfide	**5.6**	mg/L	0.50	0.24	1		12/17/12 16:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	**1.0**	mg/L	1.0	0.059	1		12/13/12 23:29	24959-67-9	
Chloride	**67.0**	mg/L	5.0	2.5	5		12/13/12 23:46	16887-00-6	
Sulfate	**1360**	mg/L	100	34.0	100		12/14/12 00:04	14808-79-8	

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (Z3) **Lab ID: 60135194003** Collected: 12/10/12 16:00 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	**1.4**	mg/L	0.50	0.16	1	12/12/12 00:00	12/17/12 17:15		
Surrogates									
p-Terphenyl (S)	84	%	35-121		1	12/12/12 00:00	12/17/12 17:15	92-94-4	
n-Tetracosane (S)	81	%	35-120		1	12/12/12 00:00	12/17/12 17:15	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50	0.12	1		12/13/12 19:44		
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		12/13/12 19:44	460-00-4	
Preservation pH	**1.0**				1		12/13/12 19:44		
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**29.9**	ug/L	10.0	1.1	1		12/18/12 18:14	67-64-1	
Benzene	ND	ug/L	1.0	0.098	1		12/18/12 18:14	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.14	1		12/18/12 18:14	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.35	1		12/18/12 18:14	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.13	1		12/18/12 18:14	75-27-4	
Bromoform	ND	ug/L	1.0	0.13	1		12/18/12 18:14	75-25-2	
Bromomethane	ND	ug/L	5.0	0.17	1		12/18/12 18:14	74-83-9	
2-Butanone (MEK)	**15.5**	ug/L	10.0	3.2	1		12/18/12 18:14	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.047	1		12/18/12 18:14	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.075	1		12/18/12 18:14	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.46	1		12/18/12 18:14	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.060	1		12/18/12 18:14	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.097	1		12/18/12 18:14	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.12	1		12/18/12 18:14	108-90-7	
Chloroethane	ND	ug/L	1.0	0.27	1		12/18/12 18:14	75-00-3	
Chloroform	**5.6**	ug/L	1.0	0.13	1		12/18/12 18:14	67-66-3	
Chloromethane	ND	ug/L	1.0	0.076	1		12/18/12 18:14	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.062	1		12/18/12 18:14	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.12	1		12/18/12 18:14	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.80	1		12/18/12 18:14	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.18	1		12/18/12 18:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.18	1		12/18/12 18:14	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		12/18/12 18:14	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.15	1		12/18/12 18:14	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.18	1		12/18/12 18:14	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.092	1		12/18/12 18:14	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.097	1		12/18/12 18:14	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.18	1		12/18/12 18:14	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		12/18/12 18:14	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.31	1		12/18/12 18:14	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.18	1		12/18/12 18:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.15	1		12/18/12 18:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.23	1		12/18/12 18:14	156-60-5	

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (Z3) **Lab ID: 60135194003** Collected: 12/10/12 16:00 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		12/18/12 18:14	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.16	1		12/18/12 18:14	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.38	1		12/18/12 18:14	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.049	1		12/18/12 18:14	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.079	1		12/18/12 18:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/18/12 18:14	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.23	1		12/18/12 18:14	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.22	1		12/18/12 18:14	87-68-3	
2-Hexanone	ND	ug/L	10.0	2.4	1		12/18/12 18:14	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.11	1		12/18/12 18:14	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.11	1		12/18/12 18:14	99-87-6	
Methylene chloride	**3.1**	ug/L	1.0	0.24	1		12/18/12 18:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.46	1		12/18/12 18:14	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.083	1		12/18/12 18:14	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.11	1		12/18/12 18:14	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.088	1		12/18/12 18:14	103-65-1	
Styrene	ND	ug/L	1.0	0.14	1		12/18/12 18:14	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.21	1		12/18/12 18:14	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.086	1		12/18/12 18:14	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.13	1		12/18/12 18:14	127-18-4	
Toluene	ND	ug/L	1.0	0.15	1		12/18/12 18:14	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.22	1		12/18/12 18:14	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.12	1		12/18/12 18:14	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.071	1		12/18/12 18:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.15	1		12/18/12 18:14	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.12	1		12/18/12 18:14	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.067	1		12/18/12 18:14	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.32	1		12/18/12 18:14	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.068	1		12/18/12 18:14	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.076	1		12/18/12 18:14	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.12	1		12/18/12 18:14	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.41	1		12/18/12 18:14	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		12/18/12 18:14	460-00-4	
Dibromofluoromethane (S)	102	%	80-120		1		12/18/12 18:14	1868-53-7	
1,2-Dichloroethane-d4 (S)	107	%	80-120		1		12/18/12 18:14	17060-07-0	
Toluene-d8 (S)	107	%	80-120		1		12/18/12 18:14	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		12/18/12 18:14		
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**294**	mg/L	20.0	1.2	1		12/17/12 09:43		
Alkalinity, Total as CaCO3	**294**	mg/L	20.0	1.2	1		12/17/12 09:43		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**2420**	mg/L	5.0	5.0	1		12/13/12 12:47		

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (Z3) **Lab ID: 60135194003** Collected: 12/10/12 16:00 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide, Iodometric	Analytical Method: SM 4500-S-2 F								
Sulfide	**8.8**	mg/L	0.50	0.24	1		12/17/12 16:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	**1.1**	mg/L	1.0	0.059	1		12/13/12 14:12	24959-67-9	
Chloride	**140**	mg/L	10.0	5.0	10		12/15/12 00:57	16887-00-6	
Sulfate	**1040**	mg/L	100	34.0	100		12/14/12 00:39	14808-79-8	

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (DUP) **Lab ID: 60135194004** Collected: 12/10/12 14:30 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**117**	ug/L	50.0	5.5	5		12/19/12 12:33	67-64-1	
Benzene	ND	ug/L	5.0	0.49	5		12/19/12 12:33	71-43-2	
Bromobenzene	ND	ug/L	5.0	0.70	5		12/19/12 12:33	108-86-1	
Bromochloromethane	ND	ug/L	5.0	1.8	5		12/19/12 12:33	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	0.65	5		12/19/12 12:33	75-27-4	
Bromoform	ND	ug/L	5.0	0.65	5		12/19/12 12:33	75-25-2	
Bromomethane	ND	ug/L	25.0	0.85	5		12/19/12 12:33	74-83-9	
2-Butanone (MEK)	**1170**	ug/L	50.0	16.0	5		12/19/12 12:33	78-93-3	
n-Butylbenzene	ND	ug/L	5.0	0.24	5		12/19/12 12:33	104-51-8	
sec-Butylbenzene	ND	ug/L	5.0	0.38	5		12/19/12 12:33	135-98-8	
tert-Butylbenzene	ND	ug/L	5.0	2.3	5		12/19/12 12:33	98-06-6	
Carbon disulfide	ND	ug/L	25.0	0.30	5		12/19/12 12:33	75-15-0	
Carbon tetrachloride	ND	ug/L	5.0	0.48	5		12/19/12 12:33	56-23-5	
Chlorobenzene	ND	ug/L	5.0	0.60	5		12/19/12 12:33	108-90-7	
Chloroethane	ND	ug/L	5.0	1.4	5		12/19/12 12:33	75-00-3	
Chloroform	**20.4**	ug/L	5.0	0.65	5		12/19/12 12:33	67-66-3	
Chloromethane	ND	ug/L	5.0	0.38	5		12/19/12 12:33	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	0.31	5		12/19/12 12:33	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	0.60	5		12/19/12 12:33	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	12.5	4.0	5		12/19/12 12:33	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	0.90	5		12/19/12 12:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	0.90	5		12/19/12 12:33	106-93-4	
Dibromomethane	ND	ug/L	5.0	1.0	5		12/19/12 12:33	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	0.75	5		12/19/12 12:33	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.90	5		12/19/12 12:33	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	0.46	5		12/19/12 12:33	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	0.48	5		12/19/12 12:33	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	0.90	5		12/19/12 12:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	0.60	5		12/19/12 12:33	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	5.0	1.6	5		12/19/12 12:33	540-59-0	
1,1-Dichloroethene	ND	ug/L	5.0	0.90	5		12/19/12 12:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	0.75	5		12/19/12 12:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1.2	5		12/19/12 12:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	0.70	5		12/19/12 12:33	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	0.80	5		12/19/12 12:33	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	1.9	5		12/19/12 12:33	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.24	5		12/19/12 12:33	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	0.40	5		12/19/12 12:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	0.65	5		12/19/12 12:33	10061-02-6	
Ethylbenzene	ND	ug/L	5.0	1.2	5		12/19/12 12:33	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	1.1	5		12/19/12 12:33	87-68-3	
2-Hexanone	ND	ug/L	50.0	12.0	5		12/19/12 12:33	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	5.0	0.55	5		12/19/12 12:33	98-82-8	L3
p-Isopropyltoluene	ND	ug/L	5.0	0.55	5		12/19/12 12:33	99-87-6	
Methylene chloride	**8.5**	ug/L	5.0	1.2	5		12/19/12 12:33	75-09-2	

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121012-CM-MW-1 (DUP) **Lab ID: 60135194004** Collected: 12/10/12 14:30 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
4-Methyl-2-pentanone (MIBK)	ND	ug/L	50.0	2.3	5		12/19/12 12:33	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.0	0.42	5		12/19/12 12:33	1634-04-4	
Naphthalene	ND	ug/L	50.0	0.55	5		12/19/12 12:33	91-20-3	
n-Propylbenzene	ND	ug/L	5.0	0.44	5		12/19/12 12:33	103-65-1	
Styrene	ND	ug/L	5.0	0.70	5		12/19/12 12:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	1.0	5		12/19/12 12:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	0.43	5		12/19/12 12:33	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	0.65	5		12/19/12 12:33	127-18-4	
Toluene	ND	ug/L	5.0	0.75	5		12/19/12 12:33	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	1.1	5		12/19/12 12:33	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	0.60	5		12/19/12 12:33	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	5.0	0.36	5		12/19/12 12:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	0.75	5		12/19/12 12:33	79-00-5	
Trichloroethene	ND	ug/L	5.0	0.60	5		12/19/12 12:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	0.34	5		12/19/12 12:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	12.5	1.6	5		12/19/12 12:33	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	5.0	0.34	5		12/19/12 12:33	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	5.0	0.38	5		12/19/12 12:33	108-67-8	
Vinyl chloride	ND	ug/L	5.0	0.60	5		12/19/12 12:33	75-01-4	
Xylene (Total)	ND	ug/L	15.0	2.0	5		12/19/12 12:33	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	80-120		5		12/19/12 12:33	460-00-4	
Dibromofluoromethane (S)	100	%	80-120		5		12/19/12 12:33	1868-53-7	
1,2-Dichloroethane-d4 (S)	108	%	80-120		5		12/19/12 12:33	17060-07-0	
Toluene-d8 (S)	105	%	80-120		5		12/19/12 12:33	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	5		12/19/12 12:33		

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ANALYTICAL RESULTS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Sample: GW-074922-121112-CM-MW-1 (Z3) **Lab ID: 60135194005** Collected: 12/11/12 11:00 Received: 12/12/12 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**144**	ug/L	100	1.8	1	12/18/12 16:00	12/21/12 19:21	7440-42-8	
Calcium, Dissolved	**189000**	ug/L	100	35.8	1	12/18/12 16:00	12/21/12 19:21	7440-70-2	
Magnesium, Dissolved	**6810**	ug/L	50.0	17.2	1	12/18/12 16:00	12/21/12 19:21	7439-95-4	
Potassium, Dissolved	**13900**	ug/L	500	64.1	1	12/18/12 16:00	12/21/12 19:21	7440-09-7	
Sodium, Dissolved	**473000**	ug/L	500	40.1	1	12/18/12 16:00	12/21/12 19:21	7440-23-5	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

QC Batch: GCV/4169 Analysis Method: EPA 5030B/8015B
QC Batch Method: EPA 5030B/8015B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60135194001, 60135194002, 60135194003

METHOD BLANK: 1114049 Matrix: Water
Associated Lab Samples: 60135194001, 60135194002, 60135194003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	12/13/12 17:56	
4-Bromofluorobenzene (S)	%	97	70-130	12/13/12 17:56	

LABORATORY CONTROL SAMPLE: 1114050

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	0.99	99	70-130	
4-Bromofluorobenzene (S)	%			95	70-130	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

QC Batch: MPRP/20895 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60135194001, 60135194002, 60135194005

METHOD BLANK: 1116710 Matrix: Water
Associated Lab Samples: 60135194001, 60135194002, 60135194005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron, Dissolved	ug/L	ND	100	12/21/12 18:57	
Calcium, Dissolved	ug/L	ND	100	12/21/12 18:57	
Magnesium, Dissolved	ug/L	ND	50.0	12/21/12 18:57	
Potassium, Dissolved	ug/L	ND	500	12/21/12 18:57	
Sodium, Dissolved	ug/L	ND	500	12/26/12 09:40	

LABORATORY CONTROL SAMPLE: 1116711

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron, Dissolved	ug/L	1000	964	96	80-120	
Calcium, Dissolved	ug/L	10000	9910	99	80-120	
Magnesium, Dissolved	ug/L	10000	9610	96	80-120	
Potassium, Dissolved	ug/L	10000	10400	104	80-120	
Sodium, Dissolved	ug/L	10000	10400	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1116712 1116713

Parameter	Units	60135194001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron, Dissolved	ug/L	242	1000	1000	1240	1240	100	99	75-125	0	20	
Calcium, Dissolved	ug/L	429000	10000	10000	441000	438000	122	87	75-125	1	20	
Magnesium, Dissolved	ug/L	10800	10000	10000	19700	19900	89	90	75-125	1	20	
Potassium, Dissolved	ug/L	15700	10000	10000	26800	27100	111	114	75-125	1	20	
Sodium, Dissolved	ug/L	813000	10000	10000	830000	814000	164	8	75-125	2	20	M6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

QC Batch: MSV/50872
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60135194001, 60135194003

METHOD BLANK: 1116473
Matrix: Water
Associated Lab Samples: 60135194001, 60135194003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/18/12 15:35	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/18/12 15:35	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/18/12 15:35	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/18/12 15:35	
1,1-Dichloroethane	ug/L	ND	1.0	12/18/12 15:35	
1,1-Dichloroethene	ug/L	ND	1.0	12/18/12 15:35	
1,1-Dichloropropene	ug/L	ND	1.0	12/18/12 15:35	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	12/18/12 15:35	
1,2,3-Trichloropropane	ug/L	ND	2.5	12/18/12 15:35	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	12/18/12 15:35	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	12/18/12 15:35	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	12/18/12 15:35	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/18/12 15:35	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/18/12 15:35	
1,2-Dichloroethane	ug/L	ND	1.0	12/18/12 15:35	
1,2-Dichloroethene (Total)	ug/L	ND	1.0	12/18/12 15:35	
1,2-Dichloropropane	ug/L	ND	1.0	12/18/12 15:35	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	12/18/12 15:35	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/18/12 15:35	
1,3-Dichloropropane	ug/L	ND	1.0	12/18/12 15:35	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/18/12 15:35	
2,2-Dichloropropane	ug/L	ND	1.0	12/18/12 15:35	
2-Butanone (MEK)	ug/L	ND	10.0	12/18/12 15:35	
2-Chlorotoluene	ug/L	ND	1.0	12/18/12 15:35	
2-Hexanone	ug/L	ND	10.0	12/18/12 15:35	
4-Chlorotoluene	ug/L	ND	1.0	12/18/12 15:35	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	12/18/12 15:35	
Acetone	ug/L	ND	10.0	12/18/12 15:35	
Benzene	ug/L	ND	1.0	12/18/12 15:35	
Bromobenzene	ug/L	ND	1.0	12/18/12 15:35	
Bromochloromethane	ug/L	ND	1.0	12/18/12 15:35	
Bromodichloromethane	ug/L	ND	1.0	12/18/12 15:35	
Bromoform	ug/L	ND	1.0	12/18/12 15:35	
Bromomethane	ug/L	ND	5.0	12/18/12 15:35	
Carbon disulfide	ug/L	ND	5.0	12/18/12 15:35	
Carbon tetrachloride	ug/L	ND	1.0	12/18/12 15:35	
Chlorobenzene	ug/L	ND	1.0	12/18/12 15:35	
Chloroethane	ug/L	ND	1.0	12/18/12 15:35	
Chloroform	ug/L	ND	1.0	12/18/12 15:35	
Chloromethane	ug/L	ND	1.0	12/18/12 15:35	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/18/12 15:35	
cis-1,3-Dichloropropene	ug/L	ND	1.0	12/18/12 15:35	
Dibromochloromethane	ug/L	ND	1.0	12/18/12 15:35	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

METHOD BLANK: 1116473 Matrix: Water

Associated Lab Samples: 60135194001, 60135194003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	12/18/12 15:35	
Dichlorodifluoromethane	ug/L	ND	1.0	12/18/12 15:35	
Ethylbenzene	ug/L	ND	1.0	12/18/12 15:35	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	12/18/12 15:35	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/18/12 15:35	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/18/12 15:35	
Methylene chloride	ug/L	ND	1.0	12/18/12 15:35	
n-Butylbenzene	ug/L	ND	1.0	12/18/12 15:35	
n-Propylbenzene	ug/L	ND	1.0	12/18/12 15:35	
Naphthalene	ug/L	ND	10.0	12/18/12 15:35	
p-Isopropyltoluene	ug/L	ND	1.0	12/18/12 15:35	
sec-Butylbenzene	ug/L	ND	1.0	12/18/12 15:35	
Styrene	ug/L	ND	1.0	12/18/12 15:35	
tert-Butylbenzene	ug/L	ND	1.0	12/18/12 15:35	
Tetrachloroethene	ug/L	ND	1.0	12/18/12 15:35	
Toluene	ug/L	ND	1.0	12/18/12 15:35	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/18/12 15:35	
trans-1,3-Dichloropropene	ug/L	ND	1.0	12/18/12 15:35	
Trichloroethene	ug/L	ND	1.0	12/18/12 15:35	
Trichlorofluoromethane	ug/L	ND	1.0	12/18/12 15:35	
Vinyl chloride	ug/L	ND	1.0	12/18/12 15:35	
Xylene (Total)	ug/L	ND	3.0	12/18/12 15:35	
1,2-Dichloroethane-d4 (S)	%	103	80-120	12/18/12 15:35	
4-Bromofluorobenzene (S)	%	99	80-120	12/18/12 15:35	
Dibromofluoromethane (S)	%	100	80-120	12/18/12 15:35	
Toluene-d8 (S)	%	105	80-120	12/18/12 15:35	

LABORATORY CONTROL SAMPLE: 1116474

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	22.5	113	79-121	
1,1,1-Trichloroethane	ug/L	20	21.7	109	76-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.0	95	71-121	
1,1,2-Trichloroethane	ug/L	20	20.1	100	78-120	
1,1-Dichloroethane	ug/L	20	19.2	96	74-120	
1,1-Dichloroethene	ug/L	20	21.6	108	68-120	
1,1-Dichloropropene	ug/L	20	21.4	107	78-120	
1,2,3-Trichlorobenzene	ug/L	20	20.5	103	70-129	
1,2,3-Trichloropropane	ug/L	20	20.7	104	74-121	
1,2,4-Trichlorobenzene	ug/L	20	21.5	108	76-123	
1,2,4-Trimethylbenzene	ug/L	20	22.5	113	76-121	
1,2-Dibromo-3-chloropropane	ug/L	20	19.6	98	65-124	
1,2-Dibromoethane (EDB)	ug/L	20	21.7	108	76-125	
1,2-Dichlorobenzene	ug/L	20	21.9	109	80-120	
1,2-Dichloroethane	ug/L	20	19.9	99	72-123	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

LABORATORY CONTROL SAMPLE: 1116474

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethene (Total)	ug/L	40	40.2	100	78-120	
1,2-Dichloropropane	ug/L	20	19.7	99	78-120	
1,3,5-Trimethylbenzene	ug/L	20	22.7	113	75-120	
1,3-Dichlorobenzene	ug/L	20	21.2	106	79-120	
1,3-Dichloropropane	ug/L	20	20.5	102	75-120	
1,4-Dichlorobenzene	ug/L	20	22.0	110	80-120	
2,2-Dichloropropane	ug/L	20	18.7	94	54-132	
2-Butanone (MEK)	ug/L	100	88.5	88	40-160	
2-Chlorotoluene	ug/L	20	22.0	110	78-120	
2-Hexanone	ug/L	100	95.8	96	40-160	
4-Chlorotoluene	ug/L	20	21.2	106	79-120	
4-Methyl-2-pentanone (MIBK)	ug/L	100	92.0	92	65-126	
Acetone	ug/L	100	79.1	79	40-160	
Benzene	ug/L	20	20.0	100	74-123	
Bromobenzene	ug/L	20	22.3	112	79-120	
Bromochloromethane	ug/L	20	21.2	106	75-120	
Bromodichloromethane	ug/L	20	19.9	99	74-120	
Bromoform	ug/L	20	20.1	100	70-123	
Bromomethane	ug/L	20	15.2	76	40-158	
Carbon disulfide	ug/L	20	18.2	91	67-135	
Carbon tetrachloride	ug/L	20	21.6	108	74-126	
Chlorobenzene	ug/L	20	22.0	110	80-120	
Chloroethane	ug/L	20	20.5	102	60-144	
Chloroform	ug/L	20	19.9	99	77-120	
Chloromethane	ug/L	20	14.8	74	40-142	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	70-120	
cis-1,3-Dichloropropene	ug/L	20	18.5	93	73-121	
Dibromochloromethane	ug/L	20	21.6	108	77-122	
Dibromomethane	ug/L	20	18.6	93	76-120	
Dichlorodifluoromethane	ug/L	20	15.7	79	40-160	
Ethylbenzene	ug/L	20	22.1	111	76-123	
Hexachloro-1,3-butadiene	ug/L	20	20.3	102	72-124	
Isopropylbenzene (Cumene)	ug/L	20	24.7	123	80-126	
Methyl-tert-butyl ether	ug/L	20	20.5	103	67-125	
Methylene chloride	ug/L	20	19.6	98	72-127	
n-Butylbenzene	ug/L	20	21.6	108	76-125	
n-Propylbenzene	ug/L	20	22.2	111	77-120	
Naphthalene	ug/L	20	19.5	97	63-128	
p-Isopropyltoluene	ug/L	20	22.1	111	77-121	
sec-Butylbenzene	ug/L	20	22.9	114	77-122	
Styrene	ug/L	20	22.0	110	79-120	
tert-Butylbenzene	ug/L	20	23.4	117	75-124	
Tetrachloroethene	ug/L	20	21.9	109	78-121	
Toluene	ug/L	20	22.5	112	75-123	
trans-1,2-Dichloroethene	ug/L	20	19.6	98	80-129	
trans-1,3-Dichloropropene	ug/L	20	20.8	104	77-122	
Trichloroethene	ug/L	20	20.5	103	74-120	
Trichlorofluoromethane	ug/L	20	21.3	106	69-122	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

LABORATORY CONTROL SAMPLE: 1116474

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vinyl chloride	ug/L	20	18.7	94	50-140	
Xylene (Total)	ug/L	60	66.7	111	76-123	
1,2-Dichloroethane-d4 (S)	%			103	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Dibromofluoromethane (S)	%			100	80-120	
Toluene-d8 (S)	%			106	80-120	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

QC Batch: MSV/50902
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60135194002, 60135194004

METHOD BLANK: 1117011
Matrix: Water
Associated Lab Samples: 60135194002, 60135194004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/19/12 10:38	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/19/12 10:38	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/19/12 10:38	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/19/12 10:38	
1,1-Dichloroethane	ug/L	ND	1.0	12/19/12 10:38	
1,1-Dichloroethene	ug/L	ND	1.0	12/19/12 10:38	
1,1-Dichloropropene	ug/L	ND	1.0	12/19/12 10:38	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	12/19/12 10:38	
1,2,3-Trichloropropane	ug/L	ND	2.5	12/19/12 10:38	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	12/19/12 10:38	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	12/19/12 10:38	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	12/19/12 10:38	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/19/12 10:38	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/19/12 10:38	
1,2-Dichloroethane	ug/L	ND	1.0	12/19/12 10:38	
1,2-Dichloroethene (Total)	ug/L	ND	1.0	12/19/12 10:38	
1,2-Dichloropropane	ug/L	ND	1.0	12/19/12 10:38	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	12/19/12 10:38	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/19/12 10:38	
1,3-Dichloropropane	ug/L	ND	1.0	12/19/12 10:38	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/19/12 10:38	
2,2-Dichloropropane	ug/L	ND	1.0	12/19/12 10:38	
2-Butanone (MEK)	ug/L	ND	10.0	12/19/12 10:38	
2-Chlorotoluene	ug/L	ND	1.0	12/19/12 10:38	
2-Hexanone	ug/L	ND	10.0	12/19/12 10:38	
4-Chlorotoluene	ug/L	ND	1.0	12/19/12 10:38	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	12/19/12 10:38	
Acetone	ug/L	ND	10.0	12/19/12 10:38	
Benzene	ug/L	ND	1.0	12/19/12 10:38	
Bromobenzene	ug/L	ND	1.0	12/19/12 10:38	
Bromochloromethane	ug/L	ND	1.0	12/19/12 10:38	
Bromodichloromethane	ug/L	ND	1.0	12/19/12 10:38	
Bromoform	ug/L	ND	1.0	12/19/12 10:38	
Bromomethane	ug/L	ND	5.0	12/19/12 10:38	
Carbon disulfide	ug/L	ND	5.0	12/19/12 10:38	
Carbon tetrachloride	ug/L	ND	1.0	12/19/12 10:38	
Chlorobenzene	ug/L	ND	1.0	12/19/12 10:38	
Chloroethane	ug/L	ND	1.0	12/19/12 10:38	
Chloroform	ug/L	ND	1.0	12/19/12 10:38	
Chloromethane	ug/L	ND	1.0	12/19/12 10:38	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/19/12 10:38	
cis-1,3-Dichloropropene	ug/L	ND	1.0	12/19/12 10:38	
Dibromochloromethane	ug/L	ND	1.0	12/19/12 10:38	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

METHOD BLANK: 1117011 Matrix: Water

Associated Lab Samples: 60135194002, 60135194004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	12/19/12 10:38	
Dichlorodifluoromethane	ug/L	ND	1.0	12/19/12 10:38	
Ethylbenzene	ug/L	ND	1.0	12/19/12 10:38	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	12/19/12 10:38	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/19/12 10:38	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/19/12 10:38	
Methylene chloride	ug/L	ND	1.0	12/19/12 10:38	
n-Butylbenzene	ug/L	ND	1.0	12/19/12 10:38	
n-Propylbenzene	ug/L	ND	1.0	12/19/12 10:38	
Naphthalene	ug/L	ND	10.0	12/19/12 10:38	
p-Isopropyltoluene	ug/L	ND	1.0	12/19/12 10:38	
sec-Butylbenzene	ug/L	ND	1.0	12/19/12 10:38	
Styrene	ug/L	ND	1.0	12/19/12 10:38	
tert-Butylbenzene	ug/L	ND	1.0	12/19/12 10:38	
Tetrachloroethene	ug/L	ND	1.0	12/19/12 10:38	
Toluene	ug/L	ND	1.0	12/19/12 10:38	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/19/12 10:38	
trans-1,3-Dichloropropene	ug/L	ND	1.0	12/19/12 10:38	
Trichloroethene	ug/L	ND	1.0	12/19/12 10:38	
Trichlorofluoromethane	ug/L	ND	1.0	12/19/12 10:38	
Vinyl chloride	ug/L	ND	1.0	12/19/12 10:38	
Xylene (Total)	ug/L	ND	3.0	12/19/12 10:38	
1,2-Dichloroethane-d4 (S)	%	101	80-120	12/19/12 10:38	
4-Bromofluorobenzene (S)	%	101	80-120	12/19/12 10:38	
Dibromofluoromethane (S)	%	101	80-120	12/19/12 10:38	
Toluene-d8 (S)	%	107	80-120	12/19/12 10:38	

LABORATORY CONTROL SAMPLE: 1117012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	23.5	117	79-121	
1,1,1-Trichloroethane	ug/L	20	22.2	111	76-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.8	104	71-121	
1,1,2-Trichloroethane	ug/L	20	21.6	108	78-120	
1,1-Dichloroethane	ug/L	20	19.4	97	74-120	
1,1-Dichloroethene	ug/L	20	21.8	109	68-120	
1,1-Dichloropropene	ug/L	20	22.9	114	78-120	
1,2,3-Trichlorobenzene	ug/L	20	23.2	116	70-129	
1,2,3-Trichloropropane	ug/L	20	22.7	113	74-121	
1,2,4-Trichlorobenzene	ug/L	20	23.5	118	76-123	
1,2,4-Trimethylbenzene	ug/L	20	23.6	118	76-121	
1,2-Dibromo-3-chloropropane	ug/L	20	19.7	98	65-124	
1,2-Dibromoethane (EDB)	ug/L	20	22.4	112	76-125	
1,2-Dichlorobenzene	ug/L	20	23.8	119	80-120	
1,2-Dichloroethane	ug/L	20	20.4	102	72-123	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

LABORATORY CONTROL SAMPLE: 1117012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethene (Total)	ug/L	40	41.3	103	78-120	
1,2-Dichloropropane	ug/L	20	20.1	100	78-120	
1,3,5-Trimethylbenzene	ug/L	20	23.7	119	75-120	
1,3-Dichlorobenzene	ug/L	20	22.8	114	79-120	
1,3-Dichloropropane	ug/L	20	21.9	109	75-120	
1,4-Dichlorobenzene	ug/L	20	23.4	117	80-120	
2,2-Dichloropropane	ug/L	20	21.9	110	54-132	
2-Butanone (MEK)	ug/L	100	91.0	91	40-160	
2-Chlorotoluene	ug/L	20	23.0	115	78-120	
2-Hexanone	ug/L	100	104	104	40-160	
4-Chlorotoluene	ug/L	20	22.7	113	79-120	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.5	97	65-126	
Acetone	ug/L	100	84.2	84	40-160	
Benzene	ug/L	20	20.5	103	74-123	
Bromobenzene	ug/L	20	22.5	112	79-120	
Bromochloromethane	ug/L	20	22.5	112	75-120	
Bromodichloromethane	ug/L	20	20.1	101	74-120	
Bromoform	ug/L	20	20.6	103	70-123	
Bromomethane	ug/L	20	15.5	77	40-158	
Carbon disulfide	ug/L	20	19.2	96	67-135	
Carbon tetrachloride	ug/L	20	23.8	119	74-126	
Chlorobenzene	ug/L	20	22.5	113	80-120	
Chloroethane	ug/L	20	21.6	108	60-144	
Chloroform	ug/L	20	21.1	105	77-120	
Chloromethane	ug/L	20	16.6	83	40-142	
cis-1,2-Dichloroethene	ug/L	20	21.0	105	70-120	
cis-1,3-Dichloropropene	ug/L	20	19.1	95	73-121	
Dibromochloromethane	ug/L	20	23.5	118	77-122	
Dibromomethane	ug/L	20	18.9	95	76-120	
Dichlorodifluoromethane	ug/L	20	19.2	96	40-160	
Ethylbenzene	ug/L	20	23.3	117	76-123	
Hexachloro-1,3-butadiene	ug/L	20	23.1	116	72-124	
Isopropylbenzene (Cumene)	ug/L	20	25.7	128	80-126	L0
Methyl-tert-butyl ether	ug/L	20	20.8	104	67-125	
Methylene chloride	ug/L	20	20.1	100	72-127	
n-Butylbenzene	ug/L	20	23.9	120	76-125	
n-Propylbenzene	ug/L	20	23.4	117	77-120	
Naphthalene	ug/L	20	22.6	113	63-128	
p-Isopropyltoluene	ug/L	20	23.2	116	77-121	
sec-Butylbenzene	ug/L	20	23.9	120	77-122	
Styrene	ug/L	20	23.5	118	79-120	
tert-Butylbenzene	ug/L	20	23.3	117	75-124	
Tetrachloroethene	ug/L	20	23.3	117	78-121	
Toluene	ug/L	20	23.5	117	75-123	
trans-1,2-Dichloroethene	ug/L	20	20.3	102	80-129	
trans-1,3-Dichloropropene	ug/L	20	22.8	114	77-122	
Trichloroethene	ug/L	20	20.0	100	74-120	
Trichlorofluoromethane	ug/L	20	21.8	109	69-122	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

LABORATORY CONTROL SAMPLE: 1117012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vinyl chloride	ug/L	20	20.6	103	50-140	
Xylene (Total)	ug/L	60	69.8	116	76-123	
1,2-Dichloroethane-d4 (S)	%			105	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Dibromofluoromethane (S)	%			101	80-120	
Toluene-d8 (S)	%			108	80-120	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

QC Batch: OEXT/36423 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B
Associated Lab Samples: 60135194001, 60135194002, 60135194003

METHOD BLANK: 1113516 Matrix: Water
Associated Lab Samples: 60135194001, 60135194002, 60135194003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	0.50	12/17/12 16:38	
n-Tetracosane (S)	%	64	35-120	12/17/12 16:38	
p-Terphenyl (S)	%	68	35-121	12/17/12 16:38	

LABORATORY CONTROL SAMPLE: 1113517

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	5	3.4	69	56-120	
n-Tetracosane (S)	%			59	35-120	
p-Terphenyl (S)	%			65	35-121	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

QC Batch: WET/38817 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60135194001, 60135194002, 60135194003

METHOD BLANK: 1115662 Matrix: Water
Associated Lab Samples: 60135194001, 60135194002, 60135194003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	12/17/12 08:50	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	12/17/12 08:50	

LABORATORY CONTROL SAMPLE: 1115663

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	488	98		

SAMPLE DUPLICATE: 1115664

Parameter	Units	60134927004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	183	179	3	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	183	179	3	10	

SAMPLE DUPLICATE: 1115665

Parameter	Units	60135302004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	175	178	1	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	175	178	1	10	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

QC Batch: WET/38772 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60135194001, 60135194002, 60135194003

METHOD BLANK: 1113678 Matrix: Water
Associated Lab Samples: 60135194001, 60135194002, 60135194003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	12/13/12 12:42	

SAMPLE DUPLICATE: 1113679

Parameter	Units	60135125001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	651	638	2	17	

SAMPLE DUPLICATE: 1113680

Parameter	Units	60135125002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	661	660	0	17	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

QC Batch: WET/38838 Analysis Method: SM 4500-S-2 F
QC Batch Method: SM 4500-S-2 F Analysis Description: 4500S2F Sulfide, Iodometric
Associated Lab Samples: 60135194001, 60135194002, 60135194003

METHOD BLANK: 1116044 Matrix: Water
Associated Lab Samples: 60135194001, 60135194002, 60135194003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.50	12/17/12 16:00	

LABORATORY CONTROL SAMPLE: 1116045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	10	9.8	98	80-120	

MATRIX SPIKE SAMPLE: 1116046

Parameter	Units	60135136002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	ND	20	19.6	96	75-125	

SAMPLE DUPLICATE: 1116047

Parameter	Units	60135194001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide	mg/L	ND	.4J		15	

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

QC Batch: WETA/22878 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60135194001, 60135194002, 60135194003

METHOD BLANK: 1113698 Matrix: Water
Associated Lab Samples: 60135194001, 60135194002, 60135194003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	12/13/12 10:43	
Chloride	mg/L	ND	1.0	12/13/12 10:43	
Sulfate	mg/L	ND	1.0	12/13/12 10:43	

LABORATORY CONTROL SAMPLE: 1113699

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	5.3	105	90-110	
Chloride	mg/L	5	5.1	102	90-110	
Sulfate	mg/L	5	5.4	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1113700 1113701

Parameter	Units	60135189001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Bromide	mg/L	ND	250	250	253	248	94	92	75-119	2	10	
Chloride	mg/L	365	250	250	600	594	94	92	64-118	1	12	
Sulfate	mg/L	67.3	250	250	304	304	95	95	61-119	0	10	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

QC Batch: WETA/22895
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60135194003

METHOD BLANK: 1114581 Matrix: Water
Associated Lab Samples: 60135194003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/14/12 19:23	

METHOD BLANK: 1115797 Matrix: Water
Associated Lab Samples: 60135194003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/17/12 12:47	

LABORATORY CONTROL SAMPLE: 1114582

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 1115798

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1114583 1114584

Parameter	Units	60135296010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.7	5	5	7.8	7.9	102	103	64-118	1	12	

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QUALIFIERS

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: OEXT/36423

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: GCV/4169

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/50872

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/50902

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Area 6 / SJ 32-8
Pace Project No.: 60135194

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60135194001	GW-074922-121012-CM-MW-1 (Z1)	EPA 3510C	OEXT/36423	EPA 8015B	GCSV/13693
60135194002	GW-074922-121012-CM-MW-1 (Z2)	EPA 3510C	OEXT/36423	EPA 8015B	GCSV/13693
60135194003	GW-074922-121012-CM-MW-1 (Z3)	EPA 3510C	OEXT/36423	EPA 8015B	GCSV/13693
60135194001	GW-074922-121012-CM-MW-1 (Z1)	EPA 5030B/8015B	GCV/4169		
60135194002	GW-074922-121012-CM-MW-1 (Z2)	EPA 5030B/8015B	GCV/4169		
60135194003	GW-074922-121012-CM-MW-1 (Z3)	EPA 5030B/8015B	GCV/4169		
60135194001	GW-074922-121012-CM-MW-1 (Z1)	EPA 3010	MPRP/20895	EPA 6010	ICP/16941
60135194002	GW-074922-121012-CM-MW-1 (Z2)	EPA 3010	MPRP/20895	EPA 6010	ICP/16941
60135194005	GW-074922-121112-CM-MW-1 (Z3)	EPA 3010	MPRP/20895	EPA 6010	ICP/16941
60135194001	GW-074922-121012-CM-MW-1 (Z1)	EPA 5030B/8260	MSV/50872		
60135194002	GW-074922-121012-CM-MW-1 (Z2)	EPA 5030B/8260	MSV/50902		
60135194003	GW-074922-121012-CM-MW-1 (Z3)	EPA 5030B/8260	MSV/50872		
60135194004	GW-074922-121012-CM-MW-1 (DUP)	EPA 5030B/8260	MSV/50902		
60135194001	GW-074922-121012-CM-MW-1 (Z1)	SM 2320B	WET/38817		
60135194002	GW-074922-121012-CM-MW-1 (Z2)	SM 2320B	WET/38817		
60135194003	GW-074922-121012-CM-MW-1 (Z3)	SM 2320B	WET/38817		
60135194001	GW-074922-121012-CM-MW-1 (Z1)	SM 2540C	WET/38772		
60135194002	GW-074922-121012-CM-MW-1 (Z2)	SM 2540C	WET/38772		
60135194003	GW-074922-121012-CM-MW-1 (Z3)	SM 2540C	WET/38772		
60135194001	GW-074922-121012-CM-MW-1 (Z1)	SM 4500-S-2 F	WET/38838		
60135194002	GW-074922-121012-CM-MW-1 (Z2)	SM 4500-S-2 F	WET/38838		
60135194003	GW-074922-121012-CM-MW-1 (Z3)	SM 4500-S-2 F	WET/38838		
60135194001	GW-074922-121012-CM-MW-1 (Z1)	EPA 300.0	WETA/22878		
60135194002	GW-074922-121012-CM-MW-1 (Z2)	EPA 300.0	WETA/22878		
60135194003	GW-074922-121012-CM-MW-1 (Z3)	EPA 300.0	WETA/22878		
60135194003	GW-074922-121012-CM-MW-1 (Z3)	EPA 300.0	WETA/22895		

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SSO

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	322822	Job #:	20109
Sample Name/Number:	GW-074922-121012-CM-MW1 (Z1)		
Company:	Pace Analytical		
Date Sampled:	12/10/2012		
Container:	IsoBag		
Field/Site Name:	074922/Area 6/SJ32-8		
Location:	San Juan, NM		
Formation/Depth:			
Sampling Point:			
Date Received:	12/12/2012	Date Reported:	12/20/2012

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	na			
Hydrogen	nd			
Argon	1.02			
Oxygen	21.90			
Nitrogen	75.86			
Carbon Dioxide	0.88			
Methane	0.337			
Ethane	0.0049			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-98.0	-12.70

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.53
Concentration of methane in water = 0.30 cc/L ; 0.20 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	322823	Job #:	20109
Sample Name/Number:	GW-074922-121012-CM-MW1 (Z2)		
Company:	Pace Analytical		
Date Sampled:	12/10/2012		
Container:	IsoBag		
Field/Site Name:	074922/Area 6/SJ32-8		
Location:	San Juan, NM		
Formation/Depth:			
Sampling Point:			
Date Received:	12/12/2012	Date Reported:	12/20/2012

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	0.0134			
Hydrogen	0.727			
Argon	0.133			
Oxygen	1.20			
Nitrogen	95.53			
Carbon Dioxide	1.95			
Methane	0.444			
Ethane	0.0063			
Ethylene	nd			
Propane	0.0003			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-93.4	-12.24

Remarks:
Concentration of methane in water = 1.5 cc/L ; 1.0 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	322824	Job #:	20109
Sample Name/Number:	GW-074922-121012-CM-MW1 (Z3)		
Company:	Pace Analytical		
Date Sampled:	12/10/2012		
Container:	IsoBag		
Field/Site Name:	074922/Area 6/SJ32-8		
Location:	San Juan, NM		
Formation/Depth:			
Sampling Point:			
Date Received:	12/12/2012	Date Reported:	12/20/2012

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	0.0060			
Hydrogen	0.0165			
Argon	0.0784			
Oxygen	1.52			
Nitrogen	97.63			
Carbon Dioxide	0.61			
Methane	0.141			
Ethane	0.0024			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-92.1	-12.04

Remarks:
Concentration of methane in water = 0.86 cc/L ; 0.57 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH

Send Data and Invoice to

Name: Christine Matheus
Company: CRA
Address: 6121 Indian School #200 Albuquerque, NM 87110
Phone: (505) 884-0672
Fax:
Email: CMatheus@craworld.com

Project: 074922/Area6/SJ32-8
Location: San Juan, NM
Sampled by: C. Matheus / J. Kirchner

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

60135194

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: δD and δ18O of water	Analyses Requested: Dissolved Methane Isotopes (Isobag)		Comments
	GW-074922-121012-CM-MW-1(Z1)	12/10/12	X	X		
	GW-074922-121012-CM-MW-1(Z2)	12/10/12	X	X		
	GW-074922-121012-CM-MW-1(Z3)	12/10/12	X	X		

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	[signature] / CRA	CRA	12/11/12	1430
Received by	[signature]	Isotech	12/12/12	0900
Relinquished by				
Received by				
Relinquished by				
Received by				

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March 15, 2013

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: AREA 6
Pace Project No.: 60139026

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory between February 20, 2013 and March 01, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa
Cassie Brown, COP Conestoga-Rovers & Associa
Jason Ploss, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: AREA 6
Pace Project No.: 60139026

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 12-019-0
Illinois Certification #: 002885
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-12-3
Utah Certification #: KS000212012-2
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: AREA 6
Pace Project No.: 60139026

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60139026001	Isobags	Water	02/20/13 11:00	02/20/13 11:15
60139540001	GW-074922-022813-CM-MW-1-Z2	Water	02/28/13 10:15	03/01/13 09:00
60139540003	GW-074922-022813-CM-MW-1-Z1	Water	02/28/13 12:45	03/01/13 09:00
60139540004	GW-074922-022813-CM-MW-1-DUP	Water	02/28/13 10:20	03/01/13 09:00
60139540005	TB-074922-022813-CM-001	Water	02/28/13 00:00	03/01/13 09:00
60139540002	GW-074922-022813-CM-MW-1-Z3	Water	02/28/13 11:15	03/01/13 09:00

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SAMPLE ANALYTE COUNT

Project: AREA 6
Pace Project No.: 60139026

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60139540001	GW-074922-022813-CM-MW-1-Z2	EPA 8015B	JDH	3	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 6010	TJT	5	PASI-K
		EPA 5030B/8260	PRG	70	PASI-K
		EPA 8260/OA1	RNS	1	PASI-K
		SM 2320B	DJR	2	PASI-K
		SM 2540C	NDL	1	PASI-K
		SM 4500-S-2 D	AJM	1	PASI-K
		EPA 300.0	AJM	3	PASI-K
60139540003	GW-074922-022813-CM-MW-1-Z1	EPA 8015B	JDH	3	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 6010	TJT	5	PASI-K
		EPA 5030B/8260	PRG	70	PASI-K
		EPA 8260/OA1	RNS	1	PASI-K
		SM 2320B	DJR	2	PASI-K
		SM 2540C	NDL	1	PASI-K
		SM 4500-S-2 D	AJM	1	PASI-K
		EPA 300.0	AJM	3	PASI-K
60139540004	GW-074922-022813-CM-MW-1-DUP	EPA 5030B/8260	PRG	70	PASI-K
		EPA 8260/OA1	RNS	1	PASI-K
60139540005	TB-074922-022813-CM-001	EPA 5030B/8260	PRG	70	PASI-K
60139540002	GW-074922-022813-CM-MW-1-Z3	EPA 8015B	JDH	3	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 6010	TJT	5	PASI-K
		EPA 5030B/8260	PRG	70	PASI-K
		EPA 8260/OA1	RNS	1	PASI-K
		SM 2320B	DJR	2	PASI-K
		SM 2540C	NDL	1	PASI-K
		SM 4500-S-2 D	AJM	1	PASI-K
		EPA 300.0	AJM	3	PASI-K

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-Z2 **Lab ID: 60139540001** Collected: 02/28/13 10:15 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	**0.88**	mg/L	0.50	1	03/05/13 00:00	03/08/13 17:05		
Surrogates								
p-Terphenyl (S)	91	%	35-121	1	03/05/13 00:00	03/08/13 17:05	92-94-4	
n-Tetracosane (S)	88	%	35-120	1	03/05/13 00:00	03/08/13 17:05	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		03/14/13 10:38		
Surrogates								
4-Bromofluorobenzene (S)	89	%	65-123	1		03/14/13 10:38	460-00-4	CU
Preservation pH	**1.0**			1		03/14/13 10:38		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron, Dissolved	**282**	ug/L	100	1	03/11/13 12:00	03/12/13 11:50	7440-42-8	
Calcium, Dissolved	**471000**	ug/L	100	1	03/11/13 12:00	03/12/13 11:50	7440-70-2	M1
Magnesium, Dissolved	**11800**	ug/L	50.0	1	03/11/13 12:00	03/12/13 11:50	7439-95-4	
Potassium, Dissolved	**17200**	ug/L	500	1	03/11/13 12:00	03/12/13 11:50	7440-09-7	M1
Sodium, Dissolved	**1000000**	ug/L	2500	5	03/11/13 12:00	03/13/13 10:34	7440-23-5	M1
8260 MSV	Analytical Method: EPA 5030B/8260							
Acetone	**552**	ug/L	50.0	5		03/06/13 12:09	67-64-1	
Benzene	ND	ug/L	5.0	5		03/06/13 12:09	71-43-2	
Bromobenzene	ND	ug/L	5.0	5		03/06/13 12:09	108-86-1	
Bromochloromethane	ND	ug/L	5.0	5		03/06/13 12:09	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	5		03/06/13 12:09	75-27-4	
Bromoform	ND	ug/L	5.0	5		03/06/13 12:09	75-25-2	
Bromomethane	ND	ug/L	25.0	5		03/06/13 12:09	74-83-9	
2-Butanone (MEK)	**1290**	ug/L	50.0	5		03/06/13 12:09	78-93-3	
n-Butylbenzene	ND	ug/L	5.0	5		03/06/13 12:09	104-51-8	
sec-Butylbenzene	ND	ug/L	5.0	5		03/06/13 12:09	135-98-8	
tert-Butylbenzene	ND	ug/L	5.0	5		03/06/13 12:09	98-06-6	
Carbon disulfide	ND	ug/L	25.0	5		03/06/13 12:09	75-15-0	
Carbon tetrachloride	ND	ug/L	5.0	5		03/06/13 12:09	56-23-5	
Chlorobenzene	ND	ug/L	5.0	5		03/06/13 12:09	108-90-7	
Chloroethane	ND	ug/L	5.0	5		03/06/13 12:09	75-00-3	
Chloroform	ND	ug/L	5.0	5		03/06/13 12:09	67-66-3	
Chloromethane	ND	ug/L	5.0	5		03/06/13 12:09	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	5		03/06/13 12:09	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	5		03/06/13 12:09	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	12.5	5		03/06/13 12:09	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	5		03/06/13 12:09	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	5		03/06/13 12:09	106-93-4	
Dibromomethane	ND	ug/L	5.0	5		03/06/13 12:09	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	5		03/06/13 12:09	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	5		03/06/13 12:09	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	5		03/06/13 12:09	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	5		03/06/13 12:09	75-71-8	

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-Z2 **Lab ID: 60139540001** Collected: 02/28/13 10:15 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1-Dichloroethane	ND	ug/L	5.0	5		03/06/13 12:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	5		03/06/13 12:09	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	5.0	5		03/06/13 12:09	540-59-0	
1,1-Dichloroethene	ND	ug/L	5.0	5		03/06/13 12:09	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	5		03/06/13 12:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	5		03/06/13 12:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	5		03/06/13 12:09	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	5		03/06/13 12:09	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	5		03/06/13 12:09	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	5		03/06/13 12:09	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	5		03/06/13 12:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	5		03/06/13 12:09	10061-02-6	
Ethylbenzene	ND	ug/L	5.0	5		03/06/13 12:09	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	5		03/06/13 12:09	87-68-3	
2-Hexanone	ND	ug/L	50.0	5		03/06/13 12:09	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	5.0	5		03/06/13 12:09	98-82-8	
p-Isopropyltoluene	ND	ug/L	5.0	5		03/06/13 12:09	99-87-6	
Methylene chloride	**48.2**	ug/L	5.0	5		03/06/13 12:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	50.0	5		03/06/13 12:09	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.0	5		03/06/13 12:09	1634-04-4	
Naphthalene	ND	ug/L	50.0	5		03/06/13 12:09	91-20-3	
n-Propylbenzene	ND	ug/L	5.0	5		03/06/13 12:09	103-65-1	
Styrene	ND	ug/L	5.0	5		03/06/13 12:09	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	5		03/06/13 12:09	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	5		03/06/13 12:09	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	5		03/06/13 12:09	127-18-4	
Toluene	ND	ug/L	5.0	5		03/06/13 12:09	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	5		03/06/13 12:09	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	5		03/06/13 12:09	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	5.0	5		03/06/13 12:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	5		03/06/13 12:09	79-00-5	
Trichloroethene	ND	ug/L	5.0	5		03/06/13 12:09	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	5		03/06/13 12:09	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	12.5	5		03/06/13 12:09	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	5.0	5		03/06/13 12:09	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	5.0	5		03/06/13 12:09	108-67-8	
Vinyl chloride	ND	ug/L	5.0	5		03/06/13 12:09	75-01-4	
Xylene (Total)	ND	ug/L	15.0	5		03/06/13 12:09	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100	%	80-120	5		03/06/13 12:09	460-00-4	
Dibromofluoromethane (S)	105	%	80-120	5		03/06/13 12:09	1868-53-7	
1,2-Dichloroethane-d4 (S)	103	%	80-120	5		03/06/13 12:09	17060-07-0	
Toluene-d8 (S)	99	%	80-120	5		03/06/13 12:09	2037-26-5	
Preservation pH	**1.0**		0.10	5		03/06/13 12:09		

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-Z2 **Lab ID: 60139540001** Collected: 02/28/13 10:15 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Gasoline Range Organics	ND	mg/L	0.50	1		03/14/13 13:07		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**675**	mg/L	20.0	1		03/05/13 09:01		
Alkalinity, Total as CaCO3	**711**	mg/L	20.0	1		03/05/13 09:01		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4630**	mg/L	5.0	1		03/05/13 10:21		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**15.1**	mg/L	0.50	1		03/05/13 12:20	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/13 12:29	24959-67-9	
Chloride	**128**	mg/L	10.0	10		03/05/13 18:05	16887-00-6	
Sulfate	**2220**	mg/L	200	200		03/05/13 18:23	14808-79-8	

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Lenexa, KS 66219
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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-Z1 **Lab ID: 60139540003** Collected: 02/28/13 12:45 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	**0.58**	mg/L	0.50	1	03/05/13 00:00	03/08/13 17:19		
Surrogates								
p-Terphenyl (S)	84	%	35-121	1	03/05/13 00:00	03/08/13 17:19	92-94-4	
n-Tetracosane (S)	82	%	35-120	1	03/05/13 00:00	03/08/13 17:19	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		03/14/13 11:22		
Surrogates								
4-Bromofluorobenzene (S)	93	%	65-123	1		03/14/13 11:22	460-00-4	CU
Preservation pH	**1.0**			1		03/14/13 11:22		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron, Dissolved	**246**	ug/L	100	1	03/11/13 12:00	03/12/13 12:01	7440-42-8	
Calcium, Dissolved	**487000**	ug/L	100	1	03/11/13 12:00	03/12/13 12:01	7440-70-2	
Magnesium, Dissolved	**13100**	ug/L	50.0	1	03/11/13 12:00	03/12/13 12:01	7439-95-4	
Potassium, Dissolved	**18800**	ug/L	500	1	03/11/13 12:00	03/12/13 12:01	7440-09-7	
Sodium, Dissolved	**786000**	ug/L	2500	5	03/11/13 12:00	03/13/13 10:47	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260							
Acetone	**256**	ug/L	10.0	1		03/06/13 12:38	67-64-1	
Benzene	ND	ug/L	1.0	1		03/06/13 12:38	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		03/06/13 12:38	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		03/06/13 12:38	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		03/06/13 12:38	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/06/13 12:38	75-25-2	
Bromomethane	ND	ug/L	5.0	1		03/06/13 12:38	74-83-9	
2-Butanone (MEK)	**65.8**	ug/L	10.0	1		03/06/13 12:38	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		03/06/13 12:38	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		03/06/13 12:38	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		03/06/13 12:38	98-06-6	
Carbon disulfide	ND	ug/L	5.0	1		03/06/13 12:38	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		03/06/13 12:38	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/06/13 12:38	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/06/13 12:38	75-00-3	
Chloroform	**5.9**	ug/L	1.0	1		03/06/13 12:38	67-66-3	
Chloromethane	ND	ug/L	1.0	1		03/06/13 12:38	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		03/06/13 12:38	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		03/06/13 12:38	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		03/06/13 12:38	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		03/06/13 12:38	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		03/06/13 12:38	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		03/06/13 12:38	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		03/06/13 12:38	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		03/06/13 12:38	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		03/06/13 12:38	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		03/06/13 12:38	75-71-8	

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-Z1 **Lab ID: 60139540003** Collected: 02/28/13 12:45 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1-Dichloroethane	ND	ug/L	1.0	1		03/06/13 12:38	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/06/13 12:38	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	1		03/06/13 12:38	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/06/13 12:38	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/06/13 12:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/06/13 12:38	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/06/13 12:38	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		03/06/13 12:38	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		03/06/13 12:38	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		03/06/13 12:38	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/06/13 12:38	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/06/13 12:38	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		03/06/13 12:38	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		03/06/13 12:38	87-68-3	
2-Hexanone	ND	ug/L	10.0	1		03/06/13 12:38	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		03/06/13 12:38	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		03/06/13 12:38	99-87-6	
Methylene chloride	**4.5**	ug/L	1.0	1		03/06/13 12:38	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		03/06/13 12:38	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		03/06/13 12:38	1634-04-4	
Naphthalene	ND	ug/L	10.0	1		03/06/13 12:38	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		03/06/13 12:38	103-65-1	
Styrene	ND	ug/L	1.0	1		03/06/13 12:38	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		03/06/13 12:38	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/06/13 12:38	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		03/06/13 12:38	127-18-4	
Toluene	ND	ug/L	1.0	1		03/06/13 12:38	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		03/06/13 12:38	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		03/06/13 12:38	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/06/13 12:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/06/13 12:38	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/06/13 12:38	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		03/06/13 12:38	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		03/06/13 12:38	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		03/06/13 12:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		03/06/13 12:38	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		03/06/13 12:38	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		03/06/13 12:38	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100	%	80-120	1		03/06/13 12:38	460-00-4	
Dibromofluoromethane (S)	99	%	80-120	1		03/06/13 12:38	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	80-120	1		03/06/13 12:38	17060-07-0	
Toluene-d8 (S)	97	%	80-120	1		03/06/13 12:38	2037-26-5	
Preservation pH	**1.0**		0.10	1		03/06/13 12:38		

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-Z1 **Lab ID: 60139540003** Collected: 02/28/13 12:45 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Gasoline Range Organics	ND	mg/L	0.50	1		03/14/13 13:40		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**502**	mg/L	20.0	1		03/05/13 09:15		
Alkalinity, Total as CaCO3	**502**	mg/L	20.0	1		03/05/13 09:15		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3770**	mg/L	5.0	1		03/05/13 10:22		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**2.2**	mg/L	0.10	1		03/05/13 12:17	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/13 13:22	24959-67-9	
Chloride	**82.3**	mg/L	10.0	10		03/05/13 20:26	16887-00-6	
Sulfate	**2010**	mg/L	200	200		03/05/13 20:44	14808-79-8	

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-DUP **Lab ID: 60139540004** Collected: 02/28/13 10:20 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Acetone	**536**	ug/L	50.0	5		03/06/13 12:52	67-64-1	
Benzene	ND	ug/L	5.0	5		03/06/13 12:52	71-43-2	
Bromobenzene	ND	ug/L	5.0	5		03/06/13 12:52	108-86-1	
Bromochloromethane	ND	ug/L	5.0	5		03/06/13 12:52	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	5		03/06/13 12:52	75-27-4	
Bromoform	ND	ug/L	5.0	5		03/06/13 12:52	75-25-2	
Bromomethane	ND	ug/L	25.0	5		03/06/13 12:52	74-83-9	
2-Butanone (MEK)	**1130**	ug/L	50.0	5		03/06/13 12:52	78-93-3	
n-Butylbenzene	ND	ug/L	5.0	5		03/06/13 12:52	104-51-8	
sec-Butylbenzene	ND	ug/L	5.0	5		03/06/13 12:52	135-98-8	
tert-Butylbenzene	ND	ug/L	5.0	5		03/06/13 12:52	98-06-6	
Carbon disulfide	ND	ug/L	25.0	5		03/06/13 12:52	75-15-0	
Carbon tetrachloride	ND	ug/L	5.0	5		03/06/13 12:52	56-23-5	
Chlorobenzene	ND	ug/L	5.0	5		03/06/13 12:52	108-90-7	
Chloroethane	ND	ug/L	5.0	5		03/06/13 12:52	75-00-3	
Chloroform	ND	ug/L	5.0	5		03/06/13 12:52	67-66-3	
Chloromethane	ND	ug/L	5.0	5		03/06/13 12:52	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	5		03/06/13 12:52	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	5		03/06/13 12:52	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	12.5	5		03/06/13 12:52	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	5		03/06/13 12:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	5		03/06/13 12:52	106-93-4	
Dibromomethane	ND	ug/L	5.0	5		03/06/13 12:52	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	5		03/06/13 12:52	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	5		03/06/13 12:52	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	5		03/06/13 12:52	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	5		03/06/13 12:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	5		03/06/13 12:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	5		03/06/13 12:52	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	5.0	5		03/06/13 12:52	540-59-0	
1,1-Dichloroethene	ND	ug/L	5.0	5		03/06/13 12:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	5		03/06/13 12:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	5		03/06/13 12:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	5		03/06/13 12:52	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	5		03/06/13 12:52	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	5		03/06/13 12:52	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	5		03/06/13 12:52	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	5		03/06/13 12:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	5		03/06/13 12:52	10061-02-6	
Ethylbenzene	ND	ug/L	5.0	5		03/06/13 12:52	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	5		03/06/13 12:52	87-68-3	
2-Hexanone	ND	ug/L	50.0	5		03/06/13 12:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	5.0	5		03/06/13 12:52	98-82-8	
p-Isopropyltoluene	ND	ug/L	5.0	5		03/06/13 12:52	99-87-6	
Methylene chloride	**7.7**	ug/L	5.0	5		03/06/13 12:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	50.0	5		03/06/13 12:52	108-10-1	

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-DUP **Lab ID: 60139540004** Collected: 02/28/13 10:20 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Methyl-tert-butyl ether	ND	ug/L	5.0	5		03/06/13 12:52	1634-04-4	
Naphthalene	ND	ug/L	50.0	5		03/06/13 12:52	91-20-3	
n-Propylbenzene	ND	ug/L	5.0	5		03/06/13 12:52	103-65-1	
Styrene	ND	ug/L	5.0	5		03/06/13 12:52	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	5		03/06/13 12:52	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	5		03/06/13 12:52	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	5		03/06/13 12:52	127-18-4	
Toluene	ND	ug/L	5.0	5		03/06/13 12:52	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	5		03/06/13 12:52	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	5		03/06/13 12:52	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	5.0	5		03/06/13 12:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	5		03/06/13 12:52	79-00-5	
Trichloroethene	ND	ug/L	5.0	5		03/06/13 12:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	5		03/06/13 12:52	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	12.5	5		03/06/13 12:52	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	5.0	5		03/06/13 12:52	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	5.0	5		03/06/13 12:52	108-67-8	
Vinyl chloride	ND	ug/L	5.0	5		03/06/13 12:52	75-01-4	
Xylene (Total)	ND	ug/L	15.0	5		03/06/13 12:52	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101	%	80-120	5		03/06/13 12:52	460-00-4	
Dibromofluoromethane (S)	102	%	80-120	5		03/06/13 12:52	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	80-120	5		03/06/13 12:52	17060-07-0	
Toluene-d8 (S)	96	%	80-120	5		03/06/13 12:52	2037-26-5	
Preservation pH	**1.0**		0.10	5		03/06/13 12:52		
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Gasoline Range Organics	ND	mg/L	0.50	1		03/14/13 13:57		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: TB-074922-022813-CM-001 **Lab ID: 60139540005** Collected: 02/28/13 00:00 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Acetone	**69.6**	ug/L	10.0	1		03/06/13 13:07	67-64-1	
Benzene	ND	ug/L	1.0	1		03/06/13 13:07	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		03/06/13 13:07	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		03/06/13 13:07	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		03/06/13 13:07	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/06/13 13:07	75-25-2	
Bromomethane	ND	ug/L	5.0	1		03/06/13 13:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		03/06/13 13:07	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		03/06/13 13:07	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		03/06/13 13:07	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		03/06/13 13:07	98-06-6	
Carbon disulfide	ND	ug/L	5.0	1		03/06/13 13:07	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		03/06/13 13:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/06/13 13:07	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/06/13 13:07	75-00-3	
Chloroform	ND	ug/L	1.0	1		03/06/13 13:07	67-66-3	
Chloromethane	ND	ug/L	1.0	1		03/06/13 13:07	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		03/06/13 13:07	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		03/06/13 13:07	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		03/06/13 13:07	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		03/06/13 13:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		03/06/13 13:07	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		03/06/13 13:07	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		03/06/13 13:07	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		03/06/13 13:07	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		03/06/13 13:07	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		03/06/13 13:07	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		03/06/13 13:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/06/13 13:07	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	1		03/06/13 13:07	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/06/13 13:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/06/13 13:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/06/13 13:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/06/13 13:07	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		03/06/13 13:07	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		03/06/13 13:07	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		03/06/13 13:07	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/06/13 13:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/06/13 13:07	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		03/06/13 13:07	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		03/06/13 13:07	87-68-3	
2-Hexanone	ND	ug/L	10.0	1		03/06/13 13:07	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		03/06/13 13:07	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		03/06/13 13:07	99-87-6	
Methylene chloride	ND	ug/L	1.0	1		03/06/13 13:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		03/06/13 13:07	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		03/06/13 13:07	1634-04-4	

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: TB-074922-022813-CM-001 **Lab ID: 60139540005** Collected: 02/28/13 00:00 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Naphthalene	ND	ug/L	10.0	1		03/06/13 13:07	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		03/06/13 13:07	103-65-1	
Styrene	ND	ug/L	1.0	1		03/06/13 13:07	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		03/06/13 13:07	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/06/13 13:07	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		03/06/13 13:07	127-18-4	
Toluene	ND	ug/L	1.0	1		03/06/13 13:07	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		03/06/13 13:07	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		03/06/13 13:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/06/13 13:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/06/13 13:07	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/06/13 13:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		03/06/13 13:07	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		03/06/13 13:07	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		03/06/13 13:07	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		03/06/13 13:07	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		03/06/13 13:07	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		03/06/13 13:07	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	98	%	80-120	1		03/06/13 13:07	460-00-4	
Dibromofluoromethane (S)	104	%	80-120	1		03/06/13 13:07	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	80-120	1		03/06/13 13:07	17060-07-0	
Toluene-d8 (S)	98	%	80-120	1		03/06/13 13:07	2037-26-5	
Preservation pH	**1.0**		0.10	1		03/06/13 13:07		

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-Z3 **Lab ID: 60139540002** Collected: 02/28/13 11:15 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	**0.98**	mg/L	0.50	1	03/05/13 00:00	03/08/13 17:12		
Surrogates								
p-Terphenyl (S)	82	%	35-121	1	03/05/13 00:00	03/08/13 17:12	92-94-4	
n-Tetracosane (S)	80	%	35-120	1	03/05/13 00:00	03/08/13 17:12	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		03/14/13 11:00		
Surrogates								
4-Bromofluorobenzene (S)	133	%	65-123	1		03/14/13 11:00	460-00-4	CU,S3
Preservation pH	**1.0**			1		03/14/13 11:00		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron, Dissolved	**170**	ug/L	100	1	03/11/13 12:00	03/12/13 11:59	7440-42-8	
Calcium, Dissolved	**332000**	ug/L	100	1	03/11/13 12:00	03/12/13 11:59	7440-70-2	
Magnesium, Dissolved	**10800**	ug/L	50.0	1	03/11/13 12:00	03/12/13 11:59	7439-95-4	
Potassium, Dissolved	**18200**	ug/L	500	1	03/11/13 12:00	03/12/13 11:59	7440-09-7	
Sodium, Dissolved	**608000**	ug/L	2500	5	03/11/13 12:00	03/13/13 10:45	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260							
Acetone	**189**	ug/L	10.0	1		03/06/13 12:24	67-64-1	
Benzene	ND	ug/L	1.0	1		03/06/13 12:24	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		03/06/13 12:24	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		03/06/13 12:24	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		03/06/13 12:24	75-27-4	
Bromoform	ND	ug/L	1.0	1		03/06/13 12:24	75-25-2	
Bromomethane	ND	ug/L	5.0	1		03/06/13 12:24	74-83-9	
2-Butanone (MEK)	**609**	ug/L	10.0	1		03/06/13 12:24	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		03/06/13 12:24	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		03/06/13 12:24	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		03/06/13 12:24	98-06-6	
Carbon disulfide	ND	ug/L	5.0	1		03/06/13 12:24	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		03/06/13 12:24	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		03/06/13 12:24	108-90-7	
Chloroethane	ND	ug/L	1.0	1		03/06/13 12:24	75-00-3	
Chloroform	**1.8**	ug/L	1.0	1		03/06/13 12:24	67-66-3	
Chloromethane	ND	ug/L	1.0	1		03/06/13 12:24	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		03/06/13 12:24	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		03/06/13 12:24	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		03/06/13 12:24	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		03/06/13 12:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		03/06/13 12:24	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		03/06/13 12:24	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		03/06/13 12:24	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		03/06/13 12:24	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		03/06/13 12:24	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		03/06/13 12:24	75-71-8	

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-Z3 **Lab ID: 60139540002** Collected: 02/28/13 11:15 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1-Dichloroethane	ND	ug/L	1.0	1		03/06/13 12:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		03/06/13 12:24	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	1		03/06/13 12:24	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		03/06/13 12:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		03/06/13 12:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		03/06/13 12:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		03/06/13 12:24	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		03/06/13 12:24	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		03/06/13 12:24	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		03/06/13 12:24	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		03/06/13 12:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		03/06/13 12:24	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		03/06/13 12:24	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		03/06/13 12:24	87-68-3	
2-Hexanone	ND	ug/L	10.0	1		03/06/13 12:24	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		03/06/13 12:24	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		03/06/13 12:24	99-87-6	
Methylene chloride	**14.3**	ug/L	1.0	1		03/06/13 12:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		03/06/13 12:24	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		03/06/13 12:24	1634-04-4	
Naphthalene	ND	ug/L	10.0	1		03/06/13 12:24	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		03/06/13 12:24	103-65-1	
Styrene	ND	ug/L	1.0	1		03/06/13 12:24	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		03/06/13 12:24	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		03/06/13 12:24	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		03/06/13 12:24	127-18-4	
Toluene	**1.2**	ug/L	1.0	1		03/06/13 12:24	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		03/06/13 12:24	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		03/06/13 12:24	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		03/06/13 12:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		03/06/13 12:24	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		03/06/13 12:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		03/06/13 12:24	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		03/06/13 12:24	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		03/06/13 12:24	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		03/06/13 12:24	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		03/06/13 12:24	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		03/06/13 12:24	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100	%	80-120	1		03/06/13 12:24	460-00-4	
Dibromofluoromethane (S)	102	%	80-120	1		03/06/13 12:24	1868-53-7	
1,2-Dichloroethane-d4 (S)	106	%	80-120	1		03/06/13 12:24	17060-07-0	
Toluene-d8 (S)	96	%	80-120	1		03/06/13 12:24	2037-26-5	
Preservation pH	**1.0**		0.10	1		03/06/13 12:24		

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ANALYTICAL RESULTS

Project: AREA 6
Pace Project No.: 60139026

Sample: GW-074922-022813-CM-MW-1-Z3 **Lab ID: 60139540002** Collected: 02/28/13 11:15 Received: 03/01/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Gasoline Range Organics	ND	mg/L	0.50	1		03/14/13 13:23		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**746**	mg/L	20.0	1		03/05/13 09:09		
Alkalinity, Total as CaCO3	**746**	mg/L	20.0	1		03/05/13 09:09		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3110**	mg/L	5.0	1		03/05/13 10:22		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**2.5**	mg/L	0.25	1		03/05/13 12:17	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/13 13:04	24959-67-9	
Chloride	**143**	mg/L	10.0	10		03/05/13 19:51	16887-00-6	
Sulfate	**864**	mg/L	100	100		03/05/13 20:09	14808-79-8	

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

QC Batch: GCV/4225 Analysis Method: EPA 5030B/8015B
QC Batch Method: EPA 5030B/8015B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60139540001, 60139540002, 60139540003

METHOD BLANK: 1152820 Matrix: Water
Associated Lab Samples: 60139540001, 60139540002, 60139540003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	03/14/13 09:54	
4-Bromofluorobenzene (S)	%	103	65-123	03/14/13 09:54	CU

LABORATORY CONTROL SAMPLE: 1152821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	0.95	95	67-134	
4-Bromofluorobenzene (S)	%			133	65-123	CH,S0

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

QC Batch: MPRP/21788 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60139540001, 60139540002, 60139540003

METHOD BLANK: 1151138 Matrix: Water
Associated Lab Samples: 60139540001, 60139540002, 60139540003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron, Dissolved	ug/L	ND	100	03/12/13 15:45	
Calcium, Dissolved	ug/L	ND	100	03/12/13 15:45	
Magnesium, Dissolved	ug/L	ND	50.0	03/12/13 15:45	
Potassium, Dissolved	ug/L	ND	500	03/12/13 15:45	
Sodium, Dissolved	ug/L	ND	500	03/12/13 15:45	

LABORATORY CONTROL SAMPLE: 1151139

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron, Dissolved	ug/L	1000	997	100	80-120	
Calcium, Dissolved	ug/L	10000	9780	98	80-120	
Magnesium, Dissolved	ug/L	10000	10300	103	80-120	
Potassium, Dissolved	ug/L	10000	9470	95	80-120	
Sodium, Dissolved	ug/L	10000	9540	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1151140 1151141

Parameter	Units	60139540001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron, Dissolved	ug/L	282	1000	1000	1330	1310	105	103	75-125	1	20	
Calcium, Dissolved	ug/L	471000	10000	10000	478000	468000	71	-23	75-125	2	20	M1
Magnesium, Dissolved	ug/L	11800	10000	10000	21500	21200	97	93	75-125	2	20	
Potassium, Dissolved	ug/L	17200	10000	10000	30000	29400	128	122	75-125	2	20	1e,M1
Sodium, Dissolved	ug/L	1000000	10000	10000	1030000	1000000	280	-40	75-125	3	20	M1

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

QC Batch: MSV/52170 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60139540001, 60139540002, 60139540003, 60139540004, 60139540005

METHOD BLANK: 1148553 Matrix: Water
Associated Lab Samples: 60139540001, 60139540002, 60139540003, 60139540004, 60139540005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	03/06/13 10:25	
1,1,1-Trichloroethane	ug/L	ND	1.0	03/06/13 10:25	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	03/06/13 10:25	
1,1,2-Trichloroethane	ug/L	ND	1.0	03/06/13 10:25	
1,1-Dichloroethane	ug/L	ND	1.0	03/06/13 10:25	
1,1-Dichloroethene	ug/L	ND	1.0	03/06/13 10:25	
1,1-Dichloropropene	ug/L	ND	1.0	03/06/13 10:25	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	03/06/13 10:25	
1,2,3-Trichloropropane	ug/L	ND	2.5	03/06/13 10:25	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	03/06/13 10:25	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	03/06/13 10:25	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	03/06/13 10:25	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	03/06/13 10:25	
1,2-Dichlorobenzene	ug/L	ND	1.0	03/06/13 10:25	
1,2-Dichloroethane	ug/L	ND	1.0	03/06/13 10:25	
1,2-Dichloroethene (Total)	ug/L	ND	1.0	03/06/13 10:25	
1,2-Dichloropropane	ug/L	ND	1.0	03/06/13 10:25	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	03/06/13 10:25	
1,3-Dichlorobenzene	ug/L	ND	1.0	03/06/13 10:25	
1,3-Dichloropropane	ug/L	ND	1.0	03/06/13 10:25	
1,4-Dichlorobenzene	ug/L	ND	1.0	03/06/13 10:25	
2,2-Dichloropropane	ug/L	ND	1.0	03/06/13 10:25	
2-Butanone (MEK)	ug/L	ND	10.0	03/06/13 10:25	
2-Chlorotoluene	ug/L	ND	1.0	03/06/13 10:25	
2-Hexanone	ug/L	ND	10.0	03/06/13 10:25	
4-Chlorotoluene	ug/L	ND	1.0	03/06/13 10:25	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	03/06/13 10:25	
Acetone	ug/L	ND	10.0	03/06/13 10:25	
Benzene	ug/L	ND	1.0	03/06/13 10:25	
Bromobenzene	ug/L	ND	1.0	03/06/13 10:25	
Bromochloromethane	ug/L	ND	1.0	03/06/13 10:25	
Bromodichloromethane	ug/L	ND	1.0	03/06/13 10:25	
Bromoform	ug/L	ND	1.0	03/06/13 10:25	
Bromomethane	ug/L	ND	5.0	03/06/13 10:25	
Carbon disulfide	ug/L	ND	5.0	03/06/13 10:25	
Carbon tetrachloride	ug/L	ND	1.0	03/06/13 10:25	
Chlorobenzene	ug/L	ND	1.0	03/06/13 10:25	
Chloroethane	ug/L	ND	1.0	03/06/13 10:25	
Chloroform	ug/L	ND	1.0	03/06/13 10:25	
Chloromethane	ug/L	ND	1.0	03/06/13 10:25	
cis-1,2-Dichloroethene	ug/L	ND	1.0	03/06/13 10:25	
cis-1,3-Dichloropropene	ug/L	ND	1.0	03/06/13 10:25	
Dibromochloromethane	ug/L	ND	1.0	03/06/13 10:25	

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

METHOD BLANK: 1148553 Matrix: Water

Associated Lab Samples: 60139540001, 60139540002, 60139540003, 60139540004, 60139540005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	03/06/13 10:25	
Dichlorodifluoromethane	ug/L	ND	1.0	03/06/13 10:25	
Ethylbenzene	ug/L	ND	1.0	03/06/13 10:25	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	03/06/13 10:25	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	03/06/13 10:25	
Methyl-tert-butyl ether	ug/L	ND	1.0	03/06/13 10:25	
Methylene chloride	ug/L	ND	1.0	03/06/13 10:25	
n-Butylbenzene	ug/L	ND	1.0	03/06/13 10:25	
n-Propylbenzene	ug/L	ND	1.0	03/06/13 10:25	
Naphthalene	ug/L	ND	10.0	03/06/13 10:25	
p-Isopropyltoluene	ug/L	ND	1.0	03/06/13 10:25	
sec-Butylbenzene	ug/L	ND	1.0	03/06/13 10:25	
Styrene	ug/L	ND	1.0	03/06/13 10:25	
tert-Butylbenzene	ug/L	ND	1.0	03/06/13 10:25	
Tetrachloroethene	ug/L	ND	1.0	03/06/13 10:25	
Toluene	ug/L	ND	1.0	03/06/13 10:25	
trans-1,2-Dichloroethene	ug/L	ND	1.0	03/06/13 10:25	
trans-1,3-Dichloropropene	ug/L	ND	1.0	03/06/13 10:25	
Trichloroethene	ug/L	ND	1.0	03/06/13 10:25	
Trichlorofluoromethane	ug/L	ND	1.0	03/06/13 10:25	
Vinyl chloride	ug/L	ND	1.0	03/06/13 10:25	
Xylene (Total)	ug/L	ND	3.0	03/06/13 10:25	
1,2-Dichloroethane-d4 (S)	%	100	80-120	03/06/13 10:25	
4-Bromofluorobenzene (S)	%	101	80-120	03/06/13 10:25	
Dibromofluoromethane (S)	%	101	80-120	03/06/13 10:25	
Toluene-d8 (S)	%	97	80-120	03/06/13 10:25	

LABORATORY CONTROL SAMPLE: 1148554

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.6	108	79-121	
1,1,1-Trichloroethane	ug/L	20	21.6	108	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	20.2	101	73-120	
1,1,2-Trichloroethane	ug/L	20	19.7	99	76-120	
1,1-Dichloroethane	ug/L	20	19.2	96	73-120	
1,1-Dichloroethene	ug/L	20	21.2	106	70-127	
1,1-Dichloropropene	ug/L	20	21.5	108	79-124	
1,2,3-Trichlorobenzene	ug/L	20	19.9	99	68-130	
1,2,3-Trichloropropane	ug/L	20	18.7	94	72-124	
1,2,4-Trichlorobenzene	ug/L	20	20.3	101	73-125	
1,2,4-Trimethylbenzene	ug/L	20	20.4	102	76-120	
1,2-Dibromo-3-chloropropane	ug/L	20	19.3	96	68-126	
1,2-Dibromoethane (EDB)	ug/L	20	23.1	115	79-121	
1,2-Dichlorobenzene	ug/L	20	20.8	104	79-120	
1,2-Dichloroethane	ug/L	20	21.5	107	72-122	

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

LABORATORY CONTROL SAMPLE: 1148554

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethene (Total)	ug/L	40	40.6	102	77-120	
1,2-Dichloropropane	ug/L	20	21.7	108	77-120	
1,3,5-Trimethylbenzene	ug/L	20	20.1	100	75-120	
1,3-Dichlorobenzene	ug/L	20	20.1	101	80-120	
1,3-Dichloropropane	ug/L	20	20.3	102	76-120	
1,4-Dichlorobenzene	ug/L	20	20.0	100	80-120	
2,2-Dichloropropane	ug/L	20	20.6	103	52-135	
2-Butanone (MEK)	ug/L	100	115	115	69-124	
2-Chlorotoluene	ug/L	20	19.5	97	78-120	
2-Hexanone	ug/L	100	110	110	70-125	
4-Chlorotoluene	ug/L	20	19.7	99	80-120	
4-Methyl-2-pentanone (MIBK)	ug/L	100	115	115	72-123	
Acetone	ug/L	100	104	104	60-126	
Benzene	ug/L	20	21.5	107	73-122	
Bromobenzene	ug/L	20	20.2	101	79-120	
Bromochloromethane	ug/L	20	19.2	96	76-125	
Bromodichloromethane	ug/L	20	21.5	107	73-120	
Bromoform	ug/L	20	20.8	104	74-120	
Bromomethane	ug/L	20	15.7	78	40-146	
Carbon disulfide	ug/L	20	17.8	89	62-125	
Carbon tetrachloride	ug/L	20	21.1	105	73-125	
Chlorobenzene	ug/L	20	21.2	106	80-120	
Chloroethane	ug/L	20	19.6	98	56-159	
Chloroform	ug/L	20	21.1	106	76-120	
Chloromethane	ug/L	20	13.4	67	40-148	
cis-1,2-Dichloroethene	ug/L	20	20.9	104	69-120	
cis-1,3-Dichloropropene	ug/L	20	22.0	110	76-120	
Dibromochloromethane	ug/L	20	21.6	108	79-121	
Dibromomethane	ug/L	20	22.7	114	77-120	
Dichlorodifluoromethane	ug/L	20	13.0	65	40-141	
Ethylbenzene	ug/L	20	21.1	105	76-123	
Hexachloro-1,3-butadiene	ug/L	20	19.1	96	69-125	
Isopropylbenzene (Cumene)	ug/L	20	22.4	112	80-130	
Methyl-tert-butyl ether	ug/L	20	21.7	108	67-128	
Methylene chloride	ug/L	20	20.8	104	71-123	
n-Butylbenzene	ug/L	20	19.5	98	77-124	
n-Propylbenzene	ug/L	20	19.4	97	78-120	
Naphthalene	ug/L	20	20.0	100	64-127	
p-Isopropyltoluene	ug/L	20	19.8	99	78-120	
sec-Butylbenzene	ug/L	20	20.1	100	77-122	
Styrene	ug/L	20	20.7	103	79-120	
tert-Butylbenzene	ug/L	20	19.7	99	76-123	
Tetrachloroethene	ug/L	20	20.6	103	79-122	
Toluene	ug/L	20	20.7	103	76-122	
trans-1,2-Dichloroethene	ug/L	20	19.7	99	78-126	
trans-1,3-Dichloropropene	ug/L	20	21.9	110	79-124	
Trichloroethene	ug/L	20	20.0	100	76-120	
Trichlorofluoromethane	ug/L	20	17.4	87	69-133	

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

LABORATORY CONTROL SAMPLE: 1148554

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vinyl chloride	ug/L	20	15.9	79	57-140	
Xylene (Total)	ug/L	60	59.3	99	76-122	
1,2-Dichloroethane-d4 (S)	%			102	80-120	
4-Bromofluorobenzene (S)	%			97	80-120	
Dibromofluoromethane (S)	%			101	80-120	
Toluene-d8 (S)	%			98	80-120	

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

QC Batch: MSV/52337 Analysis Method: EPA 8260/OA1
QC Batch Method: EPA 8260/OA1 Analysis Description: 8260/OA1 UST-WATER
Associated Lab Samples: 60139540001, 60139540002, 60139540003, 60139540004

METHOD BLANK: 1152842 Matrix: Water
Associated Lab Samples: 60139540001, 60139540002, 60139540003, 60139540004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/L	ND	0.50	03/14/13 11:43	

LABORATORY CONTROL SAMPLE: 1152843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/L	4	3.9	97	61-135	

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

QC Batch: OEXT/37400 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B
Associated Lab Samples: 60139540001, 60139540002, 60139540003

METHOD BLANK: 1148349 Matrix: Water
Associated Lab Samples: 60139540001, 60139540002, 60139540003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	0.50	03/08/13 12:19	
n-Tetracosane (S)	%	56	35-120	03/08/13 12:19	
p-Terphenyl (S)	%	82	35-121	03/08/13 12:19	

LABORATORY CONTROL SAMPLE: 1148350

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	5	3.1	63	56-120	
n-Tetracosane (S)	%			64	35-120	
p-Terphenyl (S)	%			69	35-121	

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

QC Batch: WET/40032 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60139540001, 60139540002, 60139540003

METHOD BLANK: 1147878 Matrix: Water
Associated Lab Samples: 60139540001, 60139540002, 60139540003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	03/05/13 08:45	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	03/05/13 08:45	

LABORATORY CONTROL SAMPLE: 1147879

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	485	97	90-110	

SAMPLE DUPLICATE: 1147880

Parameter	Units	60139598002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	136	133	3	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	136	133	3	10	

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

QC Batch: WET/40037 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60139540001, 60139540002, 60139540003

METHOD BLANK: 1148003 Matrix: Water
Associated Lab Samples: 60139540001, 60139540002, 60139540003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	03/05/13 10:20	

SAMPLE DUPLICATE: 1148004

Parameter	Units	60139549001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1030	1020	1	17	

SAMPLE DUPLICATE: 1148005

Parameter	Units	60139604001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	895	927	4	17	

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

QC Batch: WET/40035 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60139540001, 60139540002, 60139540003

METHOD BLANK: 1147938 Matrix: Water
Associated Lab Samples: 60139540001, 60139540002, 60139540003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	03/05/13 12:17	

LABORATORY CONTROL SAMPLE: 1147939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.5	0.52	105	80-120	

MATRIX SPIKE SAMPLE: 1147940

Parameter	Units	60139540003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	2.2		3.2			

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QUALITY CONTROL DATA

Project: AREA 6
Pace Project No.: 60139026

QC Batch: WETA/23741 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60139540001, 60139540002, 60139540003

METHOD BLANK: 1147972 Matrix: Water
Associated Lab Samples: 60139540001, 60139540002, 60139540003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	03/05/13 11:00	
Chloride	mg/L	ND	1.0	03/05/13 11:00	
Sulfate	mg/L	ND	1.0	03/05/13 11:00	

LABORATORY CONTROL SAMPLE: 1147973

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	4.9	99	90-110	
Chloride	mg/L	5	4.9	98	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

MATRIX SPIKE SAMPLE: 1147974

Parameter	Units	60139540001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	ND	5	5.0	87	75-119	
Chloride	mg/L	128	50	168	82	64-118	
Sulfate	mg/L	2220	1000	2950	73	61-119	

MATRIX SPIKE SAMPLE: 1147975

Parameter	Units	60139551014 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	ND	100	97.7	93	75-119	
Chloride	mg/L	326	100	417	92	64-118	
Sulfate	mg/L	116	100	206	89	61-119	

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QUALIFIERS

Project: AREA 6
Pace Project No.: 60139026

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: OEXT/37400
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: MSV/52170
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: GCV/4225
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: MSV/52337
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1e	Post Digestion spike performed- 118% recovery
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
CU	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
S0	Surrogate recovery outside laboratory control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AREA 6
Pace Project No.: 60139026

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60139540001	GW-074922-022813-CM-MW-1-Z2	EPA 3510C	OEXT/37400	EPA 8015B	GCSV/14165
60139540002	GW-074922-022813-CM-MW-1-Z3	EPA 3510C	OEXT/37400	EPA 8015B	GCSV/14165
60139540003	GW-074922-022813-CM-MW-1-Z1	EPA 3510C	OEXT/37400	EPA 8015B	GCSV/14165
60139540001	GW-074922-022813-CM-MW-1-Z2	EPA 5030B/8015B	GCV/4225		
60139540002	GW-074922-022813-CM-MW-1-Z3	EPA 5030B/8015B	GCV/4225		
60139540003	GW-074922-022813-CM-MW-1-Z1	EPA 5030B/8015B	GCV/4225		
60139540001	GW-074922-022813-CM-MW-1-Z2	EPA 3010	MPRP/21788	EPA 6010	ICP/17449
60139540002	GW-074922-022813-CM-MW-1-Z3	EPA 3010	MPRP/21788	EPA 6010	ICP/17449
60139540003	GW-074922-022813-CM-MW-1-Z1	EPA 3010	MPRP/21788	EPA 6010	ICP/17449
60139540001	GW-074922-022813-CM-MW-1-Z2	EPA 5030B/8260	MSV/52170		
60139540002	GW-074922-022813-CM-MW-1-Z3	EPA 5030B/8260	MSV/52170		
60139540003	GW-074922-022813-CM-MW-1-Z1	EPA 5030B/8260	MSV/52170		
60139540004	GW-074922-022813-CM-MW-1-DUP	EPA 5030B/8260	MSV/52170		
60139540005	TB-074922-022813-CM-001	EPA 5030B/8260	MSV/52170		
60139540001	GW-074922-022813-CM-MW-1-Z2	EPA 8260/OA1	MSV/52337		
60139540002	GW-074922-022813-CM-MW-1-Z3	EPA 8260/OA1	MSV/52337		
60139540003	GW-074922-022813-CM-MW-1-Z1	EPA 8260/OA1	MSV/52337		
60139540004	GW-074922-022813-CM-MW-1-DUP	EPA 8260/OA1	MSV/52337		
60139540001	GW-074922-022813-CM-MW-1-Z2	SM 2320B	WET/40032		
60139540002	GW-074922-022813-CM-MW-1-Z3	SM 2320B	WET/40032		
60139540003	GW-074922-022813-CM-MW-1-Z1	SM 2320B	WET/40032		
60139540001	GW-074922-022813-CM-MW-1-Z2	SM 2540C	WET/40037		
60139540002	GW-074922-022813-CM-MW-1-Z3	SM 2540C	WET/40037		
60139540003	GW-074922-022813-CM-MW-1-Z1	SM 2540C	WET/40037		
60139540001	GW-074922-022813-CM-MW-1-Z2	SM 4500-S-2 D	WET/40035		
60139540002	GW-074922-022813-CM-MW-1-Z3	SM 4500-S-2 D	WET/40035		
60139540003	GW-074922-022813-CM-MW-1-Z1	SM 4500-S-2 D	WET/40035		
60139540001	GW-074922-022813-CM-MW-1-Z2	EPA 300.0	WETA/23741		
60139540002	GW-074922-022813-CM-MW-1-Z3	EPA 300.0	WETA/23741		
60139540003	GW-074922-022813-CM-MW-1-Z1	EPA 300.0	WETA/23741		

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ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	339991	Job #:	20905	IS-63071
Sample Name/Number:	GW-074922-022813-CM-MW-1-Z2			
Company:	Pace Analytical			
Date Sampled:	2/28/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	3/06/2013	Date Reported:	3/14/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	0.006			
Hydrogen Sulfide	na			
Helium	0.0115			
Hydrogen	0.0046			
Argon	0.211			
Oxygen	0.98			
Nitrogen	96.73			
Carbon Dioxide	0.64			
Methane	1.38			
Ethane	0.0319			
Ethylene	0.0004			
Propane	0.0031			
Propylene	nd			
Iso-butane	0.0001			
N-butane	0.0004			
Iso-pentane	nd			
N-pentane	0.0001			
Hexanes +	nd			
Water			-92.7	-11.94

Remarks:
Concentration of methane in water = 4.5 cc/L ; 3.0 ppm
d15N= -1.2

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	339992	Job #:	20905	IS-63071
Sample Name/Number:	GW-074922-022813-CM-MW-1-DUP			
Company:	Pace Analytical			
Date Sampled:	2/28/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	3/06/2013	Date Reported:	3/14/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	0.0111			
Hydrogen	nd			
Argon	0.150			
Oxygen	1.12			
Nitrogen	98.09			
Carbon Dioxide	0.60			
Methane	0.0290			
Ethane	0.0007			
Ethylene	0.0001			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-93.7	-12.17

Remarks:
Concentration of methane in water = 0.14 cc/L ; 0.094 ppm
d15N= -1.5

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	339993	Job #:	20905	IS-63071
Sample Name/Number:	GW-074922-022813-CM-MW-1-Z3			
Company:	Pace Analytical			
Date Sampled:	2/28/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	3/06/2013	Date Reported:	3/14/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	0.0099			
Hydrogen	nd			
Argon	0.0727			
Oxygen	2.33			
Nitrogen	97.29			
Carbon Dioxide	0.28			
Methane	0.0214			
Ethane	0.0006			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-91.9	-11.89

Remarks:
Concentration of methane in water = 0.15 cc/L ; 0.097 ppm
d15N= -1.4

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

590

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	339994	Job #:	20905	IS-63071
Sample Name/Number:	GW-074922-022813-CM-MW-1-Z1			
Company:	Pace Analytical			
Date Sampled:	2/28/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	3/06/2013	Date Reported:	3/14/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	0.013			
Hydrogen Sulfide	na			
Helium	na			
Hydrogen	nd			
Argon	0.726			
Oxygen	11.91			
Nitrogen	50.24			
Carbon Dioxide	35.71			
Methane	1.36			
Ethane	0.0327			
Ethylene	0.0012			
Propane	0.0018			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	0.0004			
N-pentane	nd			
Hexanes +	nd			
Water			-95.3	-12.31

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.51
Concentration of methane in water = 1.6 cc/L ; 1.0 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
d15N= 0.3

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Sample Condition Upon Receipt

WO# : 60139540

60139026

Client Name: CRA_NM

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 8022 4482 1937 Pace Shipping Label Used? Yes ☐ No ☑

Optional
Proj Due Date:
Proj Name:

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☑ None ☐ Other ☑ zip

Thermometer Used: T-112 / T-194 Type of Ice: (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.4

Date and initials of person examining contents: 3/1/13 BA

Temperature should be above freezing to 6°C

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 holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<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	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☑Yes ☐No ☐N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Matrix: WT	☑Yes ☐No ☐N/A	13.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.
Exceptions: (VOA) coliform, TOC, O&G, WI-DRO (water), Phenolics	☑Yes ☐No	Initial when completed / Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased):	☑Yes ☐No ☐N/A	15.
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / (N) Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: Moved project samples to project 60139026

Project Manager Review: AMF Date: 3/4/13

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A Required Client Information		Section B Required Project Information:		Section C Invoice Information:	
Company:	CRA	Report To:	Christine Mathews	Attention:	
Address:	6121 Indian School Rd NE, Ste 200	Copy To:		Company Name:	
	Albequerque, NM 87110			Address:	
Email To:	cmathews@craworld.com	Purchase Order No.:		Pace Quote Reference:	
Phone: 503-377-3920	Fax: (505)884-4932	Project Name:	Area 6 - SJ 32-8	Pace Project Manager:	Alice Flanagan
Requested Due Date/TAT:	standard	Project Number:		Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NM

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260 VOC's Full List	6010 Metals Dissolved*	2540 TDS	300.0 Cl, Br, S	4500 Sulfide	8015 TPH GRO	8015 TPH DRO	Bicarbonate				Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-074922-022813-CM-MW-1-Z2	WT	G			2.28.13	1015		11	X		X	X				X		X	X	X	X	X	X	X	X				60129540
2	GW-074922-022813-CM-MW-1-Z3	WT	G			2.28.13	1115		11	X		X	X				X		X	X	X	X	X	X	X	X				
3	GW-074922-022813-CM-MW-1-Z1	WT	G			2.28.13	1245		11	X		X	X				X		X	X	X	X	X	X	X	X				
4	GW-074922-022813-CM-MW-1-DUP	WT	G			2.28.13	1020		3				X														X		
5	TB-074922-022813-CM-001	WT				2.28.13	1600		3				X														X		
6																													
7																													
8																													
9																													
10																													
11																													
12																													

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

NO BTEX ANALYSIS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
*6010 Metals Dissolved Mg, Ca, B, K, Na	Christine Mathews / CRA	2.28.13	1600		3/1/13	0900	2.4	Y	Y	Y
4 bags sent to Isotech Labs for each Sample above Except Trip Blank										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Christine Mathews

SIGNATURE of SAMPLER: Christine Mathews DATE Signed (MM/DD/YY): 2.28.13

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days

F-ALL-Q-020rev.08, 12-Oct-2007

Pace Package 37 of 38

Send Data and Invoice to

Name: Christine Mathews
Company: CRA
Address: 6121 Indian School Rd #200 Albuquerque, NM 87110
Phone: (505) 269-0088
Fax:
Email: cmathews@craworld.com

Project: 074922/Area 6/SJ 32-8
Location: San Juan, NM
Sampled by: C. Mathews / J. Kirchner

ISOTECH

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: δD and δ18O Oxygen & Hydrogen isotopes	Dissolved Methane	Nitrogen Isotopes	Comments
	~~GW-074922-1ZTD~~					
	GW-074922-022813-CM-MW-1-Z2	2-28-13	X	X	X	
	GW-074922-022813-CM-MW-1-DUP	2-28-13	X	X	X	
	GW-074922-022813-CM-MW-1-Z3	2-28-13	X	X	X	
	GW-074922-022813-CM-MW-1-Z1	2-28-13	X	X	X	

* Please report to Alice Flanagan w/ Pace Lenexa, KS

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	Christine Mathews	CRA	2-28-13	1600
Received by	Peter Cabrera	Isotech	3/1/13	0900
Relinquished by				
Received by				
Relinquished by				
Received by				

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April 05, 2013

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074922 Area 6
Pace Project No.: 60141122

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on March 26, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa
Cassie Brown, COP Conestoga-Rovers & Associa
Jason Ploss, COP Conestoga-Rovers & Associa

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CERTIFICATIONS

Project: 074922 Area 6
Pace Project No.: 60141122

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 12-019-0
Illinois Certification #: 002885
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-12-3
Utah Certification #: KS000212012-2
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 074922 Area 6
Pace Project No.: 60141122

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60141122001	GW-074922-032213-CM-MW-1-Z1	Water	03/22/13 09:50	03/26/13 08:20
60141122002	GW-074922-032213-CM-MW-1-Z2	Water	03/22/13 11:40	03/26/13 08:20
60141122003	GW-074922-032213-CM-MW-1-Z3	Water	03/22/13 14:35	03/26/13 08:20
60141122004	GW-074922-032213-CM-MW-1-DUP	Water	03/22/13 14:35	03/26/13 08:20
60141122005	GW-074922-032213-CM-001	Water	03/22/13 15:00	03/26/13 08:20

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SAMPLE ANALYTE COUNT

Project: 074922 Area 6
Pace Project No.: 60141122

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60141122001	GW-074922-032213-CM-MW-1-Z1	EPA 8015B	JMM	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	JGP	5
		EPA 5030B/8260	PRG	70
		SM 2320B	JMC	2
		SM 2540C	JGH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60141122002	GW-074922-032213-CM-MW-1-Z2	EPA 8015B	JMM	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	JGP	5
		EPA 5030B/8260	PRG	70
		SM 2320B	JMC	2
		SM 2540C	JGH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60141122003	GW-074922-032213-CM-MW-1-Z3	EPA 8015B	JMM	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	JGP	5
		EPA 5030B/8260	PRG	70
		SM 2320B	JMC	2
		SM 2540C	JGH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60141122004	GW-074922-032213-CM-MW-1-DUP	EPA 5030B/8260	PRG	70
60141122005	GW-074922-032213-CM-001	EPA 5030B/8260	PRG	70

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PROJECT NARRATIVE

Project: 074922 Area 6
Pace Project No.: 60141122

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: April 05, 2013

General Information:
3 samples were analyzed for EPA 8015B. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C 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.

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: GCSV/14298

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 Area 6
Pace Project No.: 60141122

Method: **EPA 5030B/8015B**
Description: Gasoline Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: April 05, 2013

General Information:
3 samples were analyzed for EPA 5030B/8015B. 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: GCV/4244

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 Area 6
Pace Project No.: 60141122

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: April 05, 2013

General Information:
3 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

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: MPRP/22048

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60141069001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1160119)
  - Calcium, Dissolved
  - Magnesium, Dissolved
  - Potassium, Dissolved

Additional Comments:

Analyte Comments:

QC Batch: MPRP/22048

1e: Post Dgestion Spike Performed - 110% Recovery

- MS (Lab ID: 1160119)
  - Potassium, Dissolved

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(913)599-5665

PROJECT NARRATIVE

Project: 074922 Area 6
Pace Project No.: 60141122

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: April 05, 2013

General Information:
5 samples were analyzed for EPA 5030B/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/52673

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 Area 6
Pace Project No.: 60141122

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: April 05, 2013

General Information:
3 samples were analyzed for SM 2320B. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 Area 6
Pace Project No.: 60141122

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: April 05, 2013

General Information:
3 samples were analyzed for SM 2540C. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 Area 6
Pace Project No.: 60141122

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: April 05, 2013

General Information:
3 samples were analyzed for SM 4500-S-2 D. 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.

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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 Area 6
Pace Project No.: 60141122

Method: EPA 300.0
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: April 05, 2013

General Information:
3 samples were analyzed for EPA 300.0. 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.

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: WETA/24072

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60141066004,60141070003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1162737)
  - Bromide
- MSD (Lab ID: 1162738)
  - Bromide

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-Z1 **Lab ID: 60141122001** Collected: 03/22/13 09:50 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	ND	mg/L	0.50	0.16	1	03/28/13 00:00	04/02/13 04:12		
Surrogates									
p-Terphenyl (S)	74	%	35-121		1	03/28/13 00:00	04/02/13 04:12	92-94-4	
n-Tetracosane (S)	62	%	35-120		1	03/28/13 00:00	04/02/13 04:12	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50	0.12	1		04/01/13 22:06		
Surrogates									
4-Bromofluorobenzene (S)	97	%	65-123		1		04/01/13 22:06	460-00-4	
Preservation pH	**1.0**				1		04/01/13 22:06		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**239**	ug/L	100	50.0	1	03/27/13 14:00	04/04/13 16:52	7440-42-8	
Calcium, Dissolved	**468000**	ug/L	100	10.4	1	03/27/13 14:00	04/04/13 16:52	7440-70-2	
Magnesium, Dissolved	**12700**	ug/L	50.0	6.5	1	03/27/13 14:00	04/04/13 16:52	7439-95-4	
Potassium, Dissolved	**17000**	ug/L	500	44.4	1	03/27/13 14:00	04/04/13 16:52	7440-09-7	
Sodium, Dissolved	**780000**	ug/L	5000	217	10	03/27/13 14:00	04/04/13 16:40	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**371**	ug/L	10.0	1.1	1		03/29/13 00:52	67-64-1	
Benzene	**1.1**	ug/L	1.0	0.098	1		03/29/13 00:52	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.14	1		03/29/13 00:52	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.35	1		03/29/13 00:52	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.13	1		03/29/13 00:52	75-27-4	
Bromoform	ND	ug/L	1.0	0.13	1		03/29/13 00:52	75-25-2	
Bromomethane	ND	ug/L	5.0	0.17	1		03/29/13 00:52	74-83-9	
2-Butanone (MEK)	**47.8**	ug/L	10.0	3.2	1		03/29/13 00:52	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.047	1		03/29/13 00:52	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.075	1		03/29/13 00:52	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.46	1		03/29/13 00:52	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.060	1		03/29/13 00:52	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.097	1		03/29/13 00:52	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.12	1		03/29/13 00:52	108-90-7	
Chloroethane	ND	ug/L	1.0	0.27	1		03/29/13 00:52	75-00-3	
Chloroform	**3.5**	ug/L	1.0	0.13	1		03/29/13 00:52	67-66-3	
Chloromethane	ND	ug/L	1.0	0.076	1		03/29/13 00:52	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.062	1		03/29/13 00:52	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.12	1		03/29/13 00:52	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.80	1		03/29/13 00:52	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.18	1		03/29/13 00:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.18	1		03/29/13 00:52	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/29/13 00:52	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.15	1		03/29/13 00:52	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.18	1		03/29/13 00:52	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.092	1		03/29/13 00:52	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-Z1 **Lab ID: 60141122001** Collected: 03/22/13 09:50 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.097	1		03/29/13 00:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.18	1		03/29/13 00:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/29/13 00:52	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.31	1		03/29/13 00:52	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.18	1		03/29/13 00:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.15	1		03/29/13 00:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.23	1		03/29/13 00:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		03/29/13 00:52	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.16	1		03/29/13 00:52	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.38	1		03/29/13 00:52	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.049	1		03/29/13 00:52	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.079	1		03/29/13 00:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/29/13 00:52	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.23	1		03/29/13 00:52	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.22	1		03/29/13 00:52	87-68-3	
2-Hexanone	ND	ug/L	10.0	2.4	1		03/29/13 00:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.11	1		03/29/13 00:52	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.11	1		03/29/13 00:52	99-87-6	
Methylene chloride	**20.2**	ug/L	1.0	0.24	1		03/29/13 00:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.46	1		03/29/13 00:52	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.083	1		03/29/13 00:52	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.11	1		03/29/13 00:52	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.088	1		03/29/13 00:52	103-65-1	
Styrene	ND	ug/L	1.0	0.14	1		03/29/13 00:52	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.21	1		03/29/13 00:52	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.086	1		03/29/13 00:52	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.13	1		03/29/13 00:52	127-18-4	
Toluene	ND	ug/L	1.0	0.15	1		03/29/13 00:52	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.22	1		03/29/13 00:52	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.12	1		03/29/13 00:52	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.071	1		03/29/13 00:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.15	1		03/29/13 00:52	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.12	1		03/29/13 00:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.067	1		03/29/13 00:52	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.32	1		03/29/13 00:52	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.068	1		03/29/13 00:52	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.076	1		03/29/13 00:52	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.12	1		03/29/13 00:52	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.41	1		03/29/13 00:52	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		03/29/13 00:52	460-00-4	
Dibromofluoromethane (S)	90	%	80-120		1		03/29/13 00:52	1868-53-7	
1,2-Dichloroethane-d4 (S)	96	%	80-120		1		03/29/13 00:52	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		03/29/13 00:52	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		03/29/13 00:52		

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-Z1 **Lab ID: 60141122001** Collected: 03/22/13 09:50 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**411**	mg/L	20.0	1.2	1		04/01/13 10:26		
Alkalinity, Total as CaCO3	**411**	mg/L	20.0	1.2	1		04/01/13 10:26		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**3750**	mg/L	5.0	5.0	1		03/28/13 13:13		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.016	1		03/28/13 13:09	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	ND	mg/L	1.0	0.50	1		04/01/13 20:00	24959-67-9	
Chloride	**73.6**	mg/L	10.0	5.0	10		04/02/13 17:30	16887-00-6	
Sulfate	**2270**	mg/L	500	29.5	500		04/02/13 17:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-Z2 **Lab ID: 60141122002** Collected: 03/22/13 11:40 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	**0.84**	mg/L	0.50	0.16	1	03/28/13 00:00	04/02/13 04:19		
Surrogates									
p-Terphenyl (S)	83	%	35-121		1	03/28/13 00:00	04/02/13 04:19	92-94-4	
n-Tetracosane (S)	79	%	35-120		1	03/28/13 00:00	04/02/13 04:19	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50	0.12	1		04/01/13 22:28		
Surrogates									
4-Bromofluorobenzene (S)	95	%	65-123		1		04/01/13 22:28	460-00-4	
Preservation pH	**1.0**				1		04/01/13 22:28		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**314**	ug/L	100	50.0	1	03/27/13 14:00	04/04/13 16:54	7440-42-8	
Calcium, Dissolved	**441000**	ug/L	100	10.4	1	03/27/13 14:00	04/04/13 16:54	7440-70-2	
Magnesium, Dissolved	**11700**	ug/L	50.0	6.5	1	03/27/13 14:00	04/04/13 16:54	7439-95-4	
Potassium, Dissolved	**16500**	ug/L	500	44.4	1	03/27/13 14:00	04/04/13 16:54	7440-09-7	
Sodium, Dissolved	**1040000**	ug/L	5000	217	10	03/27/13 14:00	04/04/13 16:42	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**455**	ug/L	10.0	1.1	1		03/29/13 17:19	67-64-1	
Benzene	ND	ug/L	1.0	0.098	1		03/29/13 17:19	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.14	1		03/29/13 17:19	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.35	1		03/29/13 17:19	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.13	1		03/29/13 17:19	75-27-4	
Bromoform	ND	ug/L	1.0	0.13	1		03/29/13 17:19	75-25-2	
Bromomethane	ND	ug/L	5.0	0.17	1		03/29/13 17:19	74-83-9	
2-Butanone (MEK)	**651**	ug/L	10.0	3.2	1		03/29/13 17:19	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.047	1		03/29/13 17:19	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.075	1		03/29/13 17:19	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.46	1		03/29/13 17:19	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.060	1		03/29/13 17:19	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.097	1		03/29/13 17:19	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.12	1		03/29/13 17:19	108-90-7	
Chloroethane	ND	ug/L	1.0	0.27	1		03/29/13 17:19	75-00-3	
Chloroform	ND	ug/L	1.0	0.13	1		03/29/13 17:19	67-66-3	
Chloromethane	ND	ug/L	1.0	0.076	1		03/29/13 17:19	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.062	1		03/29/13 17:19	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.12	1		03/29/13 17:19	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.80	1		03/29/13 17:19	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.18	1		03/29/13 17:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.18	1		03/29/13 17:19	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/29/13 17:19	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.15	1		03/29/13 17:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.18	1		03/29/13 17:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.092	1		03/29/13 17:19	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-Z2 **Lab ID: 60141122002** Collected: 03/22/13 11:40 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.097	1		03/29/13 17:19	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.18	1		03/29/13 17:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/29/13 17:19	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.31	1		03/29/13 17:19	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.18	1		03/29/13 17:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.15	1		03/29/13 17:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.23	1		03/29/13 17:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		03/29/13 17:19	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.16	1		03/29/13 17:19	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.38	1		03/29/13 17:19	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.049	1		03/29/13 17:19	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.079	1		03/29/13 17:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/29/13 17:19	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.23	1		03/29/13 17:19	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.22	1		03/29/13 17:19	87-68-3	
2-Hexanone	ND	ug/L	10.0	2.4	1		03/29/13 17:19	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.11	1		03/29/13 17:19	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.11	1		03/29/13 17:19	99-87-6	
Methylene chloride	**6.4**	ug/L	1.0	0.24	1		03/29/13 17:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.46	1		03/29/13 17:19	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.083	1		03/29/13 17:19	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.11	1		03/29/13 17:19	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.088	1		03/29/13 17:19	103-65-1	
Styrene	ND	ug/L	1.0	0.14	1		03/29/13 17:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.21	1		03/29/13 17:19	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.086	1		03/29/13 17:19	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.13	1		03/29/13 17:19	127-18-4	
Toluene	ND	ug/L	1.0	0.15	1		03/29/13 17:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.22	1		03/29/13 17:19	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.12	1		03/29/13 17:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.071	1		03/29/13 17:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.15	1		03/29/13 17:19	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.12	1		03/29/13 17:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.067	1		03/29/13 17:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.32	1		03/29/13 17:19	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.068	1		03/29/13 17:19	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.076	1		03/29/13 17:19	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.12	1		03/29/13 17:19	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.41	1		03/29/13 17:19	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		03/29/13 17:19	460-00-4	
Dibromofluoromethane (S)	99	%	80-120		1		03/29/13 17:19	1868-53-7	
1,2-Dichloroethane-d4 (S)	106	%	80-120		1		03/29/13 17:19	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		03/29/13 17:19	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		03/29/13 17:19		

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-Z2 **Lab ID: 60141122002** Collected: 03/22/13 11:40 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**596**	mg/L	20.0	1.2	1		04/01/13 10:33		
Alkalinity, Total as CaCO3	**622**	mg/L	20.0	1.2	1		04/01/13 10:33		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**4440**	mg/L	5.0	5.0	1		03/28/13 13:13		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.097**	mg/L	0.050	0.016	1		03/28/13 13:09	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	**1.1**	mg/L	1.0	0.50	1		04/01/13 20:18	24959-67-9	
Chloride	**124**	mg/L	20.0	10.0	20		04/02/13 18:58	16887-00-6	
Sulfate	**2410**	mg/L	500	29.5	500		04/02/13 18:05	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-Z3 **Lab ID: 60141122003** Collected: 03/22/13 14:35 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	**1.2**	mg/L	0.50	0.16	1	03/28/13 00:00	04/02/13 04:25		
Surrogates									
p-Terphenyl (S)	82	%	35-121		1	03/28/13 00:00	04/02/13 04:25	92-94-4	
n-Tetracosane (S)	66	%	35-120		1	03/28/13 00:00	04/02/13 04:25	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50	0.12	1		04/01/13 22:50		
Surrogates									
4-Bromofluorobenzene (S)	101	%	65-123		1		04/01/13 22:50	460-00-4	
Preservation pH	**1.0**				1		04/01/13 22:50		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**157**	ug/L	100	50.0	1	03/27/13 14:00	04/04/13 16:56	7440-42-8	
Calcium, Dissolved	**330000**	ug/L	100	10.4	1	03/27/13 14:00	04/04/13 16:56	7440-70-2	
Magnesium, Dissolved	**10300**	ug/L	50.0	6.5	1	03/27/13 14:00	04/04/13 16:56	7439-95-4	
Potassium, Dissolved	**17100**	ug/L	500	44.4	1	03/27/13 14:00	04/04/13 16:56	7440-09-7	
Sodium, Dissolved	**576000**	ug/L	5000	217	10	03/27/13 14:00	04/04/13 16:44	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**213**	ug/L	10.0	1.1	1		03/29/13 01:21	67-64-1	
Benzene	ND	ug/L	1.0	0.098	1		03/29/13 01:21	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.14	1		03/29/13 01:21	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.35	1		03/29/13 01:21	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.13	1		03/29/13 01:21	75-27-4	
Bromoform	ND	ug/L	1.0	0.13	1		03/29/13 01:21	75-25-2	
Bromomethane	ND	ug/L	5.0	0.17	1		03/29/13 01:21	74-83-9	
2-Butanone (MEK)	**489**	ug/L	10.0	3.2	1		03/29/13 01:21	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.047	1		03/29/13 01:21	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.075	1		03/29/13 01:21	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.46	1		03/29/13 01:21	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.060	1		03/29/13 01:21	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.097	1		03/29/13 01:21	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.12	1		03/29/13 01:21	108-90-7	
Chloroethane	ND	ug/L	1.0	0.27	1		03/29/13 01:21	75-00-3	
Chloroform	ND	ug/L	1.0	0.13	1		03/29/13 01:21	67-66-3	
Chloromethane	ND	ug/L	1.0	0.076	1		03/29/13 01:21	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.062	1		03/29/13 01:21	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.12	1		03/29/13 01:21	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.80	1		03/29/13 01:21	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.18	1		03/29/13 01:21	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.18	1		03/29/13 01:21	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/29/13 01:21	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.15	1		03/29/13 01:21	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.18	1		03/29/13 01:21	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.092	1		03/29/13 01:21	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-Z3 **Lab ID: 60141122003** Collected: 03/22/13 14:35 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.097	1		03/29/13 01:21	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.18	1		03/29/13 01:21	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/29/13 01:21	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.31	1		03/29/13 01:21	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.18	1		03/29/13 01:21	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.15	1		03/29/13 01:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.23	1		03/29/13 01:21	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		03/29/13 01:21	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.16	1		03/29/13 01:21	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.38	1		03/29/13 01:21	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.049	1		03/29/13 01:21	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.079	1		03/29/13 01:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/29/13 01:21	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.23	1		03/29/13 01:21	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.22	1		03/29/13 01:21	87-68-3	
2-Hexanone	ND	ug/L	10.0	2.4	1		03/29/13 01:21	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.11	1		03/29/13 01:21	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.11	1		03/29/13 01:21	99-87-6	
Methylene chloride	**28.1**	ug/L	1.0	0.24	1		03/29/13 01:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.46	1		03/29/13 01:21	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.083	1		03/29/13 01:21	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.11	1		03/29/13 01:21	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.088	1		03/29/13 01:21	103-65-1	
Styrene	ND	ug/L	1.0	0.14	1		03/29/13 01:21	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.21	1		03/29/13 01:21	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.086	1		03/29/13 01:21	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.13	1		03/29/13 01:21	127-18-4	
Toluene	**1.7**	ug/L	1.0	0.15	1		03/29/13 01:21	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.22	1		03/29/13 01:21	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.12	1		03/29/13 01:21	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.071	1		03/29/13 01:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.15	1		03/29/13 01:21	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.12	1		03/29/13 01:21	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.067	1		03/29/13 01:21	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.32	1		03/29/13 01:21	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.068	1		03/29/13 01:21	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.076	1		03/29/13 01:21	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.12	1		03/29/13 01:21	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.41	1		03/29/13 01:21	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		03/29/13 01:21	460-00-4	
Dibromofluoromethane (S)	91	%	80-120		1		03/29/13 01:21	1868-53-7	
1,2-Dichloroethane-d4 (S)	97	%	80-120		1		03/29/13 01:21	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		03/29/13 01:21	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		03/29/13 01:21		

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-Z3 **Lab ID: 60141122003** Collected: 03/22/13 14:35 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**881**	mg/L	20.0	1.2	1		04/01/13 10:42		
Alkalinity, Total as CaCO3	**931**	mg/L	20.0	1.2	1		04/01/13 10:42		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**2840**	mg/L	5.0	5.0	1		03/28/13 13:13		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.090**	mg/L	0.050	0.016	1		03/28/13 13:10	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	**1.9**	mg/L	1.0	0.50	1		04/01/13 20:35	24959-67-9	
Chloride	**140**	mg/L	20.0	10.0	20		04/02/13 19:16	16887-00-6	
Sulfate	**628**	mg/L	100	5.9	100		04/02/13 19:33	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-DUP **Lab ID: 60141122004** Collected: 03/22/13 14:35 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**647**	ug/L	50.0	5.5	5		03/29/13 01:35	67-64-1	
Benzene	ND	ug/L	5.0	0.49	5		03/29/13 01:35	71-43-2	
Bromobenzene	ND	ug/L	5.0	0.70	5		03/29/13 01:35	108-86-1	
Bromochloromethane	ND	ug/L	5.0	1.8	5		03/29/13 01:35	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	0.65	5		03/29/13 01:35	75-27-4	
Bromoform	ND	ug/L	5.0	0.65	5		03/29/13 01:35	75-25-2	
Bromomethane	ND	ug/L	25.0	0.85	5		03/29/13 01:35	74-83-9	
2-Butanone (MEK)	**646**	ug/L	50.0	16.0	5		03/29/13 01:35	78-93-3	
n-Butylbenzene	ND	ug/L	5.0	0.24	5		03/29/13 01:35	104-51-8	
sec-Butylbenzene	ND	ug/L	5.0	0.38	5		03/29/13 01:35	135-98-8	
tert-Butylbenzene	ND	ug/L	5.0	2.3	5		03/29/13 01:35	98-06-6	
Carbon disulfide	ND	ug/L	25.0	0.30	5		03/29/13 01:35	75-15-0	
Carbon tetrachloride	ND	ug/L	5.0	0.48	5		03/29/13 01:35	56-23-5	
Chlorobenzene	ND	ug/L	5.0	0.60	5		03/29/13 01:35	108-90-7	
Chloroethane	ND	ug/L	5.0	1.4	5		03/29/13 01:35	75-00-3	
Chloroform	ND	ug/L	5.0	0.65	5		03/29/13 01:35	67-66-3	
Chloromethane	ND	ug/L	5.0	0.38	5		03/29/13 01:35	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	0.31	5		03/29/13 01:35	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	0.60	5		03/29/13 01:35	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	12.5	4.0	5		03/29/13 01:35	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	0.90	5		03/29/13 01:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	0.90	5		03/29/13 01:35	106-93-4	
Dibromomethane	ND	ug/L	5.0	1.0	5		03/29/13 01:35	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	0.75	5		03/29/13 01:35	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.90	5		03/29/13 01:35	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	0.46	5		03/29/13 01:35	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	0.48	5		03/29/13 01:35	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	0.90	5		03/29/13 01:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	0.60	5		03/29/13 01:35	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	5.0	1.6	5		03/29/13 01:35	540-59-0	
1,1-Dichloroethene	ND	ug/L	5.0	0.90	5		03/29/13 01:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	0.75	5		03/29/13 01:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1.2	5		03/29/13 01:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	0.70	5		03/29/13 01:35	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	0.80	5		03/29/13 01:35	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	1.9	5		03/29/13 01:35	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.24	5		03/29/13 01:35	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	0.40	5		03/29/13 01:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	0.65	5		03/29/13 01:35	10061-02-6	
Ethylbenzene	ND	ug/L	5.0	1.2	5		03/29/13 01:35	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	1.1	5		03/29/13 01:35	87-68-3	
2-Hexanone	ND	ug/L	50.0	12.0	5		03/29/13 01:35	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	5.0	0.55	5		03/29/13 01:35	98-82-8	
p-Isopropyltoluene	ND	ug/L	5.0	0.55	5		03/29/13 01:35	99-87-6	
Methylene chloride	**17.2**	ug/L	5.0	1.2	5		03/29/13 01:35	75-09-2	

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-MW-1-DUP **Lab ID: 60141122004** Collected: 03/22/13 14:35 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
4-Methyl-2-pentanone (MIBK)	ND	ug/L	50.0	2.3	5		03/29/13 01:35	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.0	0.42	5		03/29/13 01:35	1634-04-4	
Naphthalene	ND	ug/L	50.0	0.55	5		03/29/13 01:35	91-20-3	
n-Propylbenzene	ND	ug/L	5.0	0.44	5		03/29/13 01:35	103-65-1	
Styrene	ND	ug/L	5.0	0.70	5		03/29/13 01:35	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	1.0	5		03/29/13 01:35	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	0.43	5		03/29/13 01:35	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	0.65	5		03/29/13 01:35	127-18-4	
Toluene	ND	ug/L	5.0	0.75	5		03/29/13 01:35	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	1.1	5		03/29/13 01:35	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	0.60	5		03/29/13 01:35	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	5.0	0.36	5		03/29/13 01:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	0.75	5		03/29/13 01:35	79-00-5	
Trichloroethene	ND	ug/L	5.0	0.60	5		03/29/13 01:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	0.34	5		03/29/13 01:35	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	12.5	1.6	5		03/29/13 01:35	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	5.0	0.34	5		03/29/13 01:35	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	5.0	0.38	5		03/29/13 01:35	108-67-8	
Vinyl chloride	ND	ug/L	5.0	0.60	5		03/29/13 01:35	75-01-4	
Xylene (Total)	ND	ug/L	15.0	2.0	5		03/29/13 01:35	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		5		03/29/13 01:35	460-00-4	
Dibromofluoromethane (S)	89	%	80-120		5		03/29/13 01:35	1868-53-7	
1,2-Dichloroethane-d4 (S)	94	%	80-120		5		03/29/13 01:35	17060-07-0	
Toluene-d8 (S)	101	%	80-120		5		03/29/13 01:35	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	5		03/29/13 01:35		

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-001 **Lab ID: 60141122005** Collected: 03/22/13 15:00 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	1.1	1		03/29/13 01:50	67-64-1	
Benzene	ND	ug/L	1.0	0.098	1		03/29/13 01:50	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.14	1		03/29/13 01:50	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.35	1		03/29/13 01:50	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.13	1		03/29/13 01:50	75-27-4	
Bromoform	ND	ug/L	1.0	0.13	1		03/29/13 01:50	75-25-2	
Bromomethane	ND	ug/L	5.0	0.17	1		03/29/13 01:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	3.2	1		03/29/13 01:50	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.047	1		03/29/13 01:50	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.075	1		03/29/13 01:50	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.46	1		03/29/13 01:50	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.060	1		03/29/13 01:50	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.097	1		03/29/13 01:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.12	1		03/29/13 01:50	108-90-7	
Chloroethane	ND	ug/L	1.0	0.27	1		03/29/13 01:50	75-00-3	
Chloroform	ND	ug/L	1.0	0.13	1		03/29/13 01:50	67-66-3	
Chloromethane	ND	ug/L	1.0	0.076	1		03/29/13 01:50	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.062	1		03/29/13 01:50	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.12	1		03/29/13 01:50	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.80	1		03/29/13 01:50	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.18	1		03/29/13 01:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.18	1		03/29/13 01:50	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/29/13 01:50	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.15	1		03/29/13 01:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.18	1		03/29/13 01:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.092	1		03/29/13 01:50	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.097	1		03/29/13 01:50	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.18	1		03/29/13 01:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/29/13 01:50	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.31	1		03/29/13 01:50	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.18	1		03/29/13 01:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.15	1		03/29/13 01:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.23	1		03/29/13 01:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		03/29/13 01:50	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.16	1		03/29/13 01:50	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.38	1		03/29/13 01:50	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.049	1		03/29/13 01:50	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.079	1		03/29/13 01:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/29/13 01:50	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.23	1		03/29/13 01:50	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.22	1		03/29/13 01:50	87-68-3	
2-Hexanone	ND	ug/L	10.0	2.4	1		03/29/13 01:50	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.11	1		03/29/13 01:50	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.11	1		03/29/13 01:50	99-87-6	
Methylene chloride	ND	ug/L	1.0	0.24	1		03/29/13 01:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.46	1		03/29/13 01:50	108-10-1	

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ANALYTICAL RESULTS

Project: 074922 Area 6
Pace Project No.: 60141122

Sample: GW-074922-032213-CM-001 **Lab ID: 60141122005** Collected: 03/22/13 15:00 Received: 03/26/13 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Methyl-tert-butyl ether	ND	ug/L	1.0	0.083	1		03/29/13 01:50	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.11	1		03/29/13 01:50	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.088	1		03/29/13 01:50	103-65-1	
Styrene	ND	ug/L	1.0	0.14	1		03/29/13 01:50	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.21	1		03/29/13 01:50	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.086	1		03/29/13 01:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.13	1		03/29/13 01:50	127-18-4	
Toluene	ND	ug/L	1.0	0.15	1		03/29/13 01:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.22	1		03/29/13 01:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.12	1		03/29/13 01:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.071	1		03/29/13 01:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.15	1		03/29/13 01:50	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.12	1		03/29/13 01:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.067	1		03/29/13 01:50	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.32	1		03/29/13 01:50	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.068	1		03/29/13 01:50	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.076	1		03/29/13 01:50	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.12	1		03/29/13 01:50	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.41	1		03/29/13 01:50	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		03/29/13 01:50	460-00-4	
Dibromofluoromethane (S)	86	%	80-120		1		03/29/13 01:50	1868-53-7	
1,2-Dichloroethane-d4 (S)	95	%	80-120		1		03/29/13 01:50	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		03/29/13 01:50	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		03/29/13 01:50		

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

QC Batch: GCV/4244 Analysis Method: EPA 5030B/8015B
QC Batch Method: EPA 5030B/8015B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60141122001, 60141122002, 60141122003

METHOD BLANK: 1162580 Matrix: Water
Associated Lab Samples: 60141122001, 60141122002, 60141122003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	04/01/13 14:52	
4-Bromofluorobenzene (S)	%	97	65-123	04/01/13 14:52	

LABORATORY CONTROL SAMPLE: 1162581

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	0.92	92	67-134	
4-Bromofluorobenzene (S)	%			109	65-123	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

QC Batch: MPRP/22048 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60141122001, 60141122002, 60141122003

METHOD BLANK: 1160117 Matrix: Water
Associated Lab Samples: 60141122001, 60141122002, 60141122003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron, Dissolved	ug/L	ND	100	04/04/13 16:29	
Calcium, Dissolved	ug/L	ND	100	04/04/13 16:29	
Magnesium, Dissolved	ug/L	ND	50.0	04/04/13 16:29	
Potassium, Dissolved	ug/L	ND	500	04/04/13 16:29	
Sodium, Dissolved	ug/L	ND	500	04/04/13 16:29	

LABORATORY CONTROL SAMPLE: 1160118

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron, Dissolved	ug/L	1000	945	94	80-120	
Calcium, Dissolved	ug/L	10000	9280	93	80-120	
Magnesium, Dissolved	ug/L	10000	9780	98	80-120	
Potassium, Dissolved	ug/L	10000	9200	92	80-120	
Sodium, Dissolved	ug/L	10000	9640	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1160119 1160120

Parameter	Units	60141069001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron, Dissolved	ug/L	1210	1000	1000	2130	2210	92	100	75-125	4	20	
Calcium, Dissolved	ug/L	383000	10000	10000	377000	394000	-58	116	75-125	5	20	M1
Magnesium, Dissolved	ug/L	130000	10000	10000	134000	140000	38	94	75-125	4	20	M1
Potassium, Dissolved	ug/L	13600	10000	10000	26200	25200	127	117	75-125	4	20	1e,M1
Sodium, Dissolved	ug/L	7530000	10000	10000	13400000	14900000	58320	73480	75-125	11	20	M6

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

QC Batch: MSV/52651 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60141122001, 60141122003, 60141122004, 60141122005

METHOD BLANK: 1160820 Matrix: Water
Associated Lab Samples: 60141122001, 60141122003, 60141122004, 60141122005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	03/28/13 21:30	
1,1,1-Trichloroethane	ug/L	ND	1.0	03/28/13 21:30	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	03/28/13 21:30	
1,1,2-Trichloroethane	ug/L	ND	1.0	03/28/13 21:30	
1,1-Dichloroethane	ug/L	ND	1.0	03/28/13 21:30	
1,1-Dichloroethene	ug/L	ND	1.0	03/28/13 21:30	
1,1-Dichloropropene	ug/L	ND	1.0	03/28/13 21:30	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	03/28/13 21:30	
1,2,3-Trichloropropane	ug/L	ND	2.5	03/28/13 21:30	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	03/28/13 21:30	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	03/28/13 21:30	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	03/28/13 21:30	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	03/28/13 21:30	
1,2-Dichlorobenzene	ug/L	ND	1.0	03/28/13 21:30	
1,2-Dichloroethane	ug/L	ND	1.0	03/28/13 21:30	
1,2-Dichloroethene (Total)	ug/L	ND	1.0	03/28/13 21:30	
1,2-Dichloropropane	ug/L	ND	1.0	03/28/13 21:30	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	03/28/13 21:30	
1,3-Dichlorobenzene	ug/L	ND	1.0	03/28/13 21:30	
1,3-Dichloropropane	ug/L	ND	1.0	03/28/13 21:30	
1,4-Dichlorobenzene	ug/L	ND	1.0	03/28/13 21:30	
2,2-Dichloropropane	ug/L	ND	1.0	03/28/13 21:30	
2-Butanone (MEK)	ug/L	ND	10.0	03/28/13 21:30	
2-Chlorotoluene	ug/L	ND	1.0	03/28/13 21:30	
2-Hexanone	ug/L	ND	10.0	03/28/13 21:30	
4-Chlorotoluene	ug/L	ND	1.0	03/28/13 21:30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	03/28/13 21:30	
Acetone	ug/L	ND	10.0	03/28/13 21:30	
Benzene	ug/L	ND	1.0	03/28/13 21:30	
Bromobenzene	ug/L	ND	1.0	03/28/13 21:30	
Bromochloromethane	ug/L	ND	1.0	03/28/13 21:30	
Bromodichloromethane	ug/L	ND	1.0	03/28/13 21:30	
Bromoform	ug/L	ND	1.0	03/28/13 21:30	
Bromomethane	ug/L	ND	5.0	03/28/13 21:30	
Carbon disulfide	ug/L	ND	5.0	03/28/13 21:30	
Carbon tetrachloride	ug/L	ND	1.0	03/28/13 21:30	
Chlorobenzene	ug/L	ND	1.0	03/28/13 21:30	
Chloroethane	ug/L	ND	1.0	03/28/13 21:30	
Chloroform	ug/L	ND	1.0	03/28/13 21:30	
Chloromethane	ug/L	ND	1.0	03/28/13 21:30	
cis-1,2-Dichloroethene	ug/L	ND	1.0	03/28/13 21:30	
cis-1,3-Dichloropropene	ug/L	ND	1.0	03/28/13 21:30	
Dibromochloromethane	ug/L	ND	1.0	03/28/13 21:30	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

METHOD BLANK: 1160820 Matrix: Water

Associated Lab Samples: 60141122001, 60141122003, 60141122004, 60141122005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	03/28/13 21:30	
Dichlorodifluoromethane	ug/L	ND	1.0	03/28/13 21:30	
Ethylbenzene	ug/L	ND	1.0	03/28/13 21:30	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	03/28/13 21:30	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	03/28/13 21:30	
Methyl-tert-butyl ether	ug/L	ND	1.0	03/28/13 21:30	
Methylene chloride	ug/L	ND	1.0	03/28/13 21:30	
n-Butylbenzene	ug/L	ND	1.0	03/28/13 21:30	
n-Propylbenzene	ug/L	ND	1.0	03/28/13 21:30	
Naphthalene	ug/L	ND	10.0	03/28/13 21:30	
p-Isopropyltoluene	ug/L	ND	1.0	03/28/13 21:30	
sec-Butylbenzene	ug/L	ND	1.0	03/28/13 21:30	
Styrene	ug/L	ND	1.0	03/28/13 21:30	
tert-Butylbenzene	ug/L	ND	1.0	03/28/13 21:30	
Tetrachloroethene	ug/L	ND	1.0	03/28/13 21:30	
Toluene	ug/L	ND	1.0	03/28/13 21:30	
trans-1,2-Dichloroethene	ug/L	ND	1.0	03/28/13 21:30	
trans-1,3-Dichloropropene	ug/L	ND	1.0	03/28/13 21:30	
Trichloroethene	ug/L	ND	1.0	03/28/13 21:30	
Trichlorofluoromethane	ug/L	ND	1.0	03/28/13 21:30	
Vinyl chloride	ug/L	ND	1.0	03/28/13 21:30	
Xylene (Total)	ug/L	ND	3.0	03/28/13 21:30	
1,2-Dichloroethane-d4 (S)	%	96	80-120	03/28/13 21:30	
4-Bromofluorobenzene (S)	%	96	80-120	03/28/13 21:30	
Dibromofluoromethane (S)	%	84	80-120	03/28/13 21:30	
Toluene-d8 (S)	%	102	80-120	03/28/13 21:30	

LABORATORY CONTROL SAMPLE: 1160821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	22.8	114	79-121	
1,1,1-Trichloroethane	ug/L	20	19.7	99	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	21.8	109	73-120	
1,1,2-Trichloroethane	ug/L	20	21.3	107	76-120	
1,1-Dichloroethane	ug/L	20	23.4	117	73-120	
1,1-Dichloroethene	ug/L	20	23.4	117	70-127	
1,1-Dichloropropene	ug/L	20	20.6	103	79-124	
1,2,3-Trichlorobenzene	ug/L	20	21.9	110	68-130	
1,2,3-Trichloropropane	ug/L	20	21.6	108	72-124	
1,2,4-Trichlorobenzene	ug/L	20	21.7	108	73-125	
1,2,4-Trimethylbenzene	ug/L	20	20.7	103	76-120	
1,2-Dibromo-3-chloropropane	ug/L	20	19.9	100	68-126	
1,2-Dibromoethane (EDB)	ug/L	20	23.8	119	79-121	
1,2-Dichlorobenzene	ug/L	20	21.3	106	79-120	
1,2-Dichloroethane	ug/L	20	20.8	104	72-122	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

LABORATORY CONTROL SAMPLE: 1160821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethene (Total)	ug/L	40	42.0	105	77-120	
1,2-Dichloropropane	ug/L	20	22.8	114	77-120	
1,3,5-Trimethylbenzene	ug/L	20	22.2	111	75-120	
1,3-Dichlorobenzene	ug/L	20	20.4	102	80-120	
1,3-Dichloropropane	ug/L	20	22.0	110	76-120	
1,4-Dichlorobenzene	ug/L	20	20.8	104	80-120	
2,2-Dichloropropane	ug/L	20	16.5	83	52-135	
2-Butanone (MEK)	ug/L	100	95.7	96	69-124	
2-Chlorotoluene	ug/L	20	20.7	103	78-120	
2-Hexanone	ug/L	100	107	107	70-125	
4-Chlorotoluene	ug/L	20	21.1	105	80-120	
4-Methyl-2-pentanone (MIBK)	ug/L	100	106	106	72-123	
Acetone	ug/L	100	108	108	60-126	
Benzene	ug/L	20	21.5	108	73-122	
Bromobenzene	ug/L	20	20.4	102	79-120	
Bromochloromethane	ug/L	20	21.8	109	76-125	
Bromodichloromethane	ug/L	20	21.6	108	73-120	
Bromoform	ug/L	20	21.1	106	74-120	
Bromomethane	ug/L	20	25.4	127	40-146	
Carbon disulfide	ug/L	20	20.6	103	62-125	
Carbon tetrachloride	ug/L	20	19.5	97	73-125	
Chlorobenzene	ug/L	20	21.7	108	80-120	
Chloroethane	ug/L	20	24.1	121	56-159	
Chloroform	ug/L	20	19.3	97	76-120	
Chloromethane	ug/L	20	19.8	99	40-148	
cis-1,2-Dichloroethene	ug/L	20	20.2	101	69-120	
cis-1,3-Dichloropropene	ug/L	20	20.6	103	76-120	
Dibromochloromethane	ug/L	20	22.7	114	79-121	
Dibromomethane	ug/L	20	19.3	96	77-120	
Dichlorodifluoromethane	ug/L	20	12.9	64	40-141	
Ethylbenzene	ug/L	20	22.0	110	76-123	
Hexachloro-1,3-butadiene	ug/L	20	20.1	100	69-125	
Isopropylbenzene (Cumene)	ug/L	20	23.6	118	80-130	
Methyl-tert-butyl ether	ug/L	20	22.5	112	67-128	
Methylene chloride	ug/L	20	22.9	115	71-123	
n-Butylbenzene	ug/L	20	21.8	109	77-124	
n-Propylbenzene	ug/L	20	20.6	103	78-120	
Naphthalene	ug/L	20	24.7	124	64-127	
p-Isopropyltoluene	ug/L	20	20.3	102	78-120	
sec-Butylbenzene	ug/L	20	21.5	107	77-122	
Styrene	ug/L	20	21.7	109	79-120	
tert-Butylbenzene	ug/L	20	21.0	105	76-123	
Tetrachloroethene	ug/L	20	21.0	105	79-122	
Toluene	ug/L	20	22.0	110	76-122	
trans-1,2-Dichloroethene	ug/L	20	21.8	109	78-126	
trans-1,3-Dichloropropene	ug/L	20	21.4	107	79-124	
Trichloroethene	ug/L	20	20.5	102	76-120	
Trichlorofluoromethane	ug/L	20	20.2	101	69-133	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

LABORATORY CONTROL SAMPLE: 1160821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vinyl chloride	ug/L	20	18.6	93	57-140	
Xylene (Total)	ug/L	60	64.9	108	76-122	
1,2-Dichloroethane-d4 (S)	%			98	80-120	
4-Bromofluorobenzene (S)	%			96	80-120	
Dibromofluoromethane (S)	%			84	80-120	
Toluene-d8 (S)	%			101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1160822 1160823

Parameter	Units	60140771012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.21	20	20	20.6	20.7	103	104	70-127	0	20	
1,1,1-Trichloroethane	ug/L	<0.071	20	20	19.1	19.6	96	98	72-139	3	22	
1,1,2,2-Tetrachloroethane	ug/L	<0.086	20	20	18.5	19.2	93	96	63-126	4	20	
1,1,2-Trichloroethane	ug/L	<0.15	20	20	18.0	18.5	90	92	70-121	3	24	
1,1-Dichloroethane	ug/L	<0.18	20	20	20.7	20.8	103	104	68-125	1	20	
1,1-Dichloroethene	ug/L	<0.18	20	20	24.2	25.3	121	127	66-142	5	22	
1,1-Dichloropropene	ug/L	<0.049	20	20	20.1	21.4	101	107	70-144	6	20	
1,2,3-Trichlorobenzene	ug/L	<0.22	20	20	19.5	20.3	97	101	56-133	4	35	
1,2,3-Trichloropropane	ug/L	<0.32	20	20	17.8	18.9	89	94	66-123	6	20	
1,2,4-Trichlorobenzene	ug/L	<0.12	20	20	18.4	19.5	92	98	60-129	6	26	
1,2,4-Trimethylbenzene	ug/L	<0.068	20	20	18.9	19.5	94	98	51-138	3	25	
1,2-Dibromo-3-chloropropane	ug/L	<0.80	20	20	14.7	17.2	73	86	58-130	16	26	
1,2-Dibromoethane (EDB)	ug/L	<0.18	20	20	20.6	20.4	103	102	56-138	1	28	
1,2-Dichlorobenzene	ug/L	3.5	20	20	22.3	23.3	94	99	69-123	4	20	
1,2-Dichloroethane	ug/L	<0.12	20	20	18.8	18.7	94	93	53-144	1	27	
1,2-Dichloroethene (Total)	ug/L	<0.31	40	40	42.2	41.6	105	104	67-137	1	20	
1,2-Dichloropropane	ug/L	<0.14	20	20	21.2	21.9	106	109	72-126	3	20	
1,3,5-Trimethylbenzene	ug/L	<0.076	20	20	19.7	20.7	98	104	51-138	5	25	
1,3-Dichlorobenzene	ug/L	0.30J	20	20	18.3	19.4	90	96	67-123	6	22	
1,3-Dichloropropane	ug/L	<0.16	20	20	18.9	19.4	94	97	70-120	3	20	
1,4-Dichlorobenzene	ug/L	9.4	20	20	27.9	29.2	93	99	68-125	5	22	
2,2-Dichloropropane	ug/L	<0.38	20	20	11.3	11.5	57	58	40-150	2	20	
2-Butanone (MEK)	ug/L	<3.2	100	100	76.6	79.1	77	79	54-127	3	20	
2-Chlorotoluene	ug/L	0.14J	20	20	18.9	19.9	94	99	68-123	5	20	
2-Hexanone	ug/L	<2.4	100	100	84.2	86.5	84	87	55-127	3	20	
4-Chlorotoluene	ug/L	<0.12	20	20	19.1	20.1	96	100	70-124	5	21	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.46	100	100	86.9	87.9	87	88	61-127	1	20	
Acetone	ug/L	<1.1	100	100	88.0	94.2	88	94	40-139	7	24	
Benzene	ug/L	0.18J	20	20	20.8	21.0	103	104	48-150	1	31	
Bromobenzene	ug/L	<0.14	20	20	18.6	19.1	93	95	68-126	3	20	
Bromochloromethane	ug/L	<0.35	20	20	19.4	18.0	97	90	71-130	8	20	
Bromodichloromethane	ug/L	<0.13	20	20	19.5	20.0	97	100	66-123	3	20	
Bromoform	ug/L	<0.13	20	20	17.2	17.3	86	86	64-122	0	21	
Bromomethane	ug/L	<0.17	20	20	21.1	21.4	105	107	40-146	1	37	
Carbon disulfide	ug/L	<0.060	20	20	22.2	22.6	111	113	57-137	2	22	
Carbon tetrachloride	ug/L	<0.097	20	20	18.6	19.2	93	96	68-145	3	20	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1160822 1160823

Parameter	Units	60140771012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chlorobenzene	ug/L	5.1	20	20	24.7	24.7	98	98	68-131	0	22	
Chloroethane	ug/L	<0.27	20	20	25.5	27.4	127	137	49-160	7	24	
Chloroform	ug/L	<0.13	20	20	18.6	19.3	93	97	69-126	4	20	
Chloromethane	ug/L	<0.076	20	20	15.5	17.2	77	86	40-148	10	24	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	19.8	100	99	63-127	0	20	
cis-1,3-Dichloropropene	ug/L	<0.079	20	20	17.0	18.0	85	90	65-121	6	20	
Dibromochloromethane	ug/L	<0.18	20	20	18.9	19.6	95	98	70-125	3	20	
Dibromomethane	ug/L	<0.21	20	20	17.4	17.5	87	88	68-125	1	20	
Dichlorodifluoromethane	ug/L	<0.097	20	20	14.9	15.0	74	75	40-143	1	25	
Ethylbenzene	ug/L	<0.23	20	20	20.2	20.5	101	102	50-147	1	31	
Hexachloro-1,3-butadiene	ug/L	<0.22	20	20	18.6	19.2	93	96	56-137	3	27	
Isopropylbenzene (Cumene)	ug/L	<0.11	20	20	21.7	21.9	108	109	75-143	1	20	
Methyl-tert-butyl ether	ug/L	<0.083	20	20	19.3	20.5	96	103	46-143	6	29	
Methylene chloride	ug/L	0.30J	20	20	21.9	22.4	108	111	67-128	2	20	
n-Butylbenzene	ug/L	<0.047	20	20	19.5	20.7	97	104	61-137	6	21	
n-Propylbenzene	ug/L	<0.088	20	20	19.1	19.9	95	100	63-132	4	20	
Naphthalene	ug/L	<0.11	20	20	20.7	22.1	104	110	40-140	6	33	
p-Isopropyltoluene	ug/L	<0.11	20	20	18.8	19.8	94	99	65-132	5	20	
sec-Butylbenzene	ug/L	<0.075	20	20	19.9	21.1	100	106	67-134	6	20	
Styrene	ug/L	<0.14	20	20	18.7	19.2	94	96	58-133	3	21	
tert-Butylbenzene	ug/L	<0.46	20	20	19.4	20.7	97	103	70-132	6	21	
Tetrachloroethene	ug/L	<0.13	20	20	19.9	20.3	100	101	66-139	2	20	
Toluene	ug/L	<0.15	20	20	20.3	20.5	101	103	51-147	1	32	
trans-1,2-Dichloroethene	ug/L	<0.23	20	20	22.3	21.8	111	109	73-142	2	20	
trans-1,3-Dichloropropene	ug/L	<0.13	20	20	17.9	18.1	89	91	68-126	1	20	
Trichloroethene	ug/L	<0.12	20	20	19.5	20.1	98	100	67-130	3	20	
Trichlorofluoromethane	ug/L	<0.067	20	20	20.5	22.0	103	110	63-150	7	21	
Vinyl chloride	ug/L	<0.12	20	20	19.9	20.9	100	105	47-159	5	20	
Xylene (Total)	ug/L	<0.41	60	60	59.3	61.6	99	103	49-145	4	31	
1,2-Dichloroethane-d4 (S)	%						95	96	80-120			
4-Bromofluorobenzene (S)	%						98	98	80-120			
Dibromofluoromethane (S)	%						87	86	80-120			
Toluene-d8 (S)	%						102	101	80-120			
Preservation pH		1.0			1.0	1.0				0		

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

QC Batch: MSV/52673
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60141122002

METHOD BLANK: 1161713
Matrix: Water
Associated Lab Samples: 60141122002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	03/29/13 13:13	
1,1,1-Trichloroethane	ug/L	ND	1.0	03/29/13 13:13	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	03/29/13 13:13	
1,1,2-Trichloroethane	ug/L	ND	1.0	03/29/13 13:13	
1,1-Dichloroethane	ug/L	ND	1.0	03/29/13 13:13	
1,1-Dichloroethene	ug/L	ND	1.0	03/29/13 13:13	
1,1-Dichloropropene	ug/L	ND	1.0	03/29/13 13:13	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	03/29/13 13:13	
1,2,3-Trichloropropane	ug/L	ND	2.5	03/29/13 13:13	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	03/29/13 13:13	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	03/29/13 13:13	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	03/29/13 13:13	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	03/29/13 13:13	
1,2-Dichlorobenzene	ug/L	ND	1.0	03/29/13 13:13	
1,2-Dichloroethane	ug/L	ND	1.0	03/29/13 13:13	
1,2-Dichloroethene (Total)	ug/L	ND	1.0	03/29/13 13:13	
1,2-Dichloropropane	ug/L	ND	1.0	03/29/13 13:13	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	03/29/13 13:13	
1,3-Dichlorobenzene	ug/L	ND	1.0	03/29/13 13:13	
1,3-Dichloropropane	ug/L	ND	1.0	03/29/13 13:13	
1,4-Dichlorobenzene	ug/L	ND	1.0	03/29/13 13:13	
2,2-Dichloropropane	ug/L	ND	1.0	03/29/13 13:13	
2-Butanone (MEK)	ug/L	ND	10.0	03/29/13 13:13	
2-Chlorotoluene	ug/L	ND	1.0	03/29/13 13:13	
2-Hexanone	ug/L	ND	10.0	03/29/13 13:13	
4-Chlorotoluene	ug/L	ND	1.0	03/29/13 13:13	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	03/29/13 13:13	
Acetone	ug/L	ND	10.0	03/29/13 13:13	
Benzene	ug/L	ND	1.0	03/29/13 13:13	
Bromobenzene	ug/L	ND	1.0	03/29/13 13:13	
Bromochloromethane	ug/L	ND	1.0	03/29/13 13:13	
Bromodichloromethane	ug/L	ND	1.0	03/29/13 13:13	
Bromoform	ug/L	ND	1.0	03/29/13 13:13	
Bromomethane	ug/L	ND	5.0	03/29/13 13:13	
Carbon disulfide	ug/L	ND	5.0	03/29/13 13:13	
Carbon tetrachloride	ug/L	ND	1.0	03/29/13 13:13	
Chlorobenzene	ug/L	ND	1.0	03/29/13 13:13	
Chloroethane	ug/L	ND	1.0	03/29/13 13:13	
Chloroform	ug/L	ND	1.0	03/29/13 13:13	
Chloromethane	ug/L	ND	1.0	03/29/13 13:13	
cis-1,2-Dichloroethene	ug/L	ND	1.0	03/29/13 13:13	
cis-1,3-Dichloropropene	ug/L	ND	1.0	03/29/13 13:13	
Dibromochloromethane	ug/L	ND	1.0	03/29/13 13:13	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

METHOD BLANK: 1161713 Matrix: Water

Associated Lab Samples: 60141122002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	03/29/13 13:13	
Dichlorodifluoromethane	ug/L	ND	1.0	03/29/13 13:13	
Ethylbenzene	ug/L	ND	1.0	03/29/13 13:13	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	03/29/13 13:13	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	03/29/13 13:13	
Methyl-tert-butyl ether	ug/L	ND	1.0	03/29/13 13:13	
Methylene chloride	ug/L	ND	1.0	03/29/13 13:13	
n-Butylbenzene	ug/L	ND	1.0	03/29/13 13:13	
n-Propylbenzene	ug/L	ND	1.0	03/29/13 13:13	
Naphthalene	ug/L	ND	10.0	03/29/13 13:13	
p-Isopropyltoluene	ug/L	ND	1.0	03/29/13 13:13	
sec-Butylbenzene	ug/L	ND	1.0	03/29/13 13:13	
Styrene	ug/L	ND	1.0	03/29/13 13:13	
tert-Butylbenzene	ug/L	ND	1.0	03/29/13 13:13	
Tetrachloroethene	ug/L	ND	1.0	03/29/13 13:13	
Toluene	ug/L	ND	1.0	03/29/13 13:13	
trans-1,2-Dichloroethene	ug/L	ND	1.0	03/29/13 13:13	
trans-1,3-Dichloropropene	ug/L	ND	1.0	03/29/13 13:13	
Trichloroethene	ug/L	ND	1.0	03/29/13 13:13	
Trichlorofluoromethane	ug/L	ND	1.0	03/29/13 13:13	
Vinyl chloride	ug/L	ND	1.0	03/29/13 13:13	
Xylene (Total)	ug/L	ND	3.0	03/29/13 13:13	
1,2-Dichloroethane-d4 (S)	%	104	80-120	03/29/13 13:13	
4-Bromofluorobenzene (S)	%	103	80-120	03/29/13 13:13	
Dibromofluoromethane (S)	%	101	80-120	03/29/13 13:13	
Toluene-d8 (S)	%	101	80-120	03/29/13 13:13	

LABORATORY CONTROL SAMPLE: 1161714

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.6	103	79-121	
1,1,1-Trichloroethane	ug/L	20	20.4	102	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	19.5	97	73-120	
1,1,2-Trichloroethane	ug/L	20	18.7	94	76-120	
1,1-Dichloroethane	ug/L	20	17.9	89	73-120	
1,1-Dichloroethene	ug/L	20	22.7	113	70-127	
1,1-Dichloropropene	ug/L	20	20.7	103	79-124	
1,2,3-Trichlorobenzene	ug/L	20	19.0	95	68-130	
1,2,3-Trichloropropane	ug/L	20	19.3	96	72-124	
1,2,4-Trichlorobenzene	ug/L	20	19.9	99	73-125	
1,2,4-Trimethylbenzene	ug/L	20	21.3	106	76-120	
1,2-Dibromo-3-chloropropane	ug/L	20	18.8	94	68-126	
1,2-Dibromoethane (EDB)	ug/L	20	20.4	102	79-121	
1,2-Dichlorobenzene	ug/L	20	20.6	103	79-120	
1,2-Dichloroethane	ug/L	20	19.5	97	72-122	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

LABORATORY CONTROL SAMPLE: 1161714

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethene (Total)	ug/L	40	39.9	100	77-120	
1,2-Dichloropropane	ug/L	20	20.6	103	77-120	
1,3,5-Trimethylbenzene	ug/L	20	21.0	105	75-120	
1,3-Dichlorobenzene	ug/L	20	20.5	103	80-120	
1,3-Dichloropropane	ug/L	20	19.2	96	76-120	
1,4-Dichlorobenzene	ug/L	20	20.6	103	80-120	
2,2-Dichloropropane	ug/L	20	20.3	101	52-135	
2-Butanone (MEK)	ug/L	100	92.3	92	69-124	
2-Chlorotoluene	ug/L	20	20.7	103	78-120	
2-Hexanone	ug/L	100	93.3	93	70-125	
4-Chlorotoluene	ug/L	20	20.6	103	80-120	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.8	98	72-123	
Acetone	ug/L	100	84.3	84	60-126	
Benzene	ug/L	20	19.9	99	73-122	
Bromobenzene	ug/L	20	20.2	101	79-120	
Bromochloromethane	ug/L	20	16.6	83	76-125	
Bromodichloromethane	ug/L	20	19.6	98	73-120	
Bromoform	ug/L	20	17.9	89	74-120	
Bromomethane	ug/L	20	14.6	73	40-146	
Carbon disulfide	ug/L	20	18.3	92	62-125	
Carbon tetrachloride	ug/L	20	19.8	99	73-125	
Chlorobenzene	ug/L	20	20.5	103	80-120	
Chloroethane	ug/L	20	19.1	95	56-159	
Chloroform	ug/L	20	19.8	99	76-120	
Chloromethane	ug/L	20	17.4	87	40-148	
cis-1,2-Dichloroethene	ug/L	20	20.5	103	69-120	
cis-1,3-Dichloropropene	ug/L	20	20.0	100	76-120	
Dibromochloromethane	ug/L	20	20.5	102	79-121	
Dibromomethane	ug/L	20	18.6	93	77-120	
Dichlorodifluoromethane	ug/L	20	14.4	72	40-141	
Ethylbenzene	ug/L	20	19.9	100	76-123	
Hexachloro-1,3-butadiene	ug/L	20	20.1	100	69-125	
Isopropylbenzene (Cumene)	ug/L	20	21.7	108	80-130	
Methyl-tert-butyl ether	ug/L	20	20.0	100	67-128	
Methylene chloride	ug/L	20	19.2	96	71-123	
n-Butylbenzene	ug/L	20	21.1	106	77-124	
n-Propylbenzene	ug/L	20	20.8	104	78-120	
Naphthalene	ug/L	20	18.7	93	64-127	
p-Isopropyltoluene	ug/L	20	20.9	105	78-120	
sec-Butylbenzene	ug/L	20	21.5	107	77-122	
Styrene	ug/L	20	20.2	101	79-120	
tert-Butylbenzene	ug/L	20	21.3	106	76-123	
Tetrachloroethene	ug/L	20	19.6	98	79-122	
Toluene	ug/L	20	20.4	102	76-122	
trans-1,2-Dichloroethene	ug/L	20	19.3	97	78-126	
trans-1,3-Dichloropropene	ug/L	20	21.3	107	79-124	
Trichloroethene	ug/L	20	19.8	99	76-120	
Trichlorofluoromethane	ug/L	20	18.5	92	69-133	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

LABORATORY CONTROL SAMPLE: 1161714

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vinyl chloride	ug/L	20	19.1	95	57-140	
Xylene (Total)	ug/L	60	60.7	101	76-122	
1,2-Dichloroethane-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			103	80-120	
Dibromofluoromethane (S)	%			99	80-120	
Toluene-d8 (S)	%			100	80-120	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

QC Batch: OEXT/37722 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B
Associated Lab Samples: 60141122001, 60141122002, 60141122003

METHOD BLANK: 1160467 Matrix: Water
Associated Lab Samples: 60141122001, 60141122002, 60141122003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	0.50	04/02/13 02:55	
n-Tetracosane (S)	%	82	35-120	04/02/13 02:55	
p-Terphenyl (S)	%	80	35-121	04/02/13 02:55	

LABORATORY CONTROL SAMPLE: 1160468

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	5	3.3	67	56-120	
n-Tetracosane (S)	%			63	35-120	
p-Terphenyl (S)	%			74	35-121	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

QC Batch: WET/40499 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60141122001, 60141122002, 60141122003

METHOD BLANK: 1162651 Matrix: Water
Associated Lab Samples: 60141122001, 60141122002, 60141122003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	04/01/13 09:50	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	04/01/13 09:50	

LABORATORY CONTROL SAMPLE: 1162652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	468	94	90-110	

SAMPLE DUPLICATE: 1162655

Parameter	Units	60141133001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	543	566	4	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	543	566	4	10	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

QC Batch: WET/40450 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60141122001, 60141122002, 60141122003

METHOD BLANK: 1160565 Matrix: Water
Associated Lab Samples: 60141122001, 60141122002, 60141122003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	03/28/13 13:12	

SAMPLE DUPLICATE: 1160566

Parameter	Units	60140990007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	238	239	0	17	

SAMPLE DUPLICATE: 1160567

Parameter	Units	60141155004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2010	1980	2	17	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

QC Batch: WET/40458 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60141122001, 60141122002, 60141122003

METHOD BLANK: 1160828 Matrix: Water
Associated Lab Samples: 60141122001, 60141122002, 60141122003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	03/28/13 13:00	

LABORATORY CONTROL SAMPLE: 1160829

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.5	0.49	99	80-120	

MATRIX SPIKE SAMPLE: 1160830

Parameter	Units	60141077011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.5	0.44	89	75-125	

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QUALITY CONTROL DATA

Project: 074922 Area 6
Pace Project No.: 60141122

QC Batch: WETA/24072 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60141122001, 60141122002, 60141122003

METHOD BLANK: 1162735 Matrix: Water
Associated Lab Samples: 60141122001, 60141122002, 60141122003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	04/01/13 12:02	

METHOD BLANK: 1163179 Matrix: Water
Associated Lab Samples: 60141122001, 60141122002, 60141122003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	04/02/13 09:32	
Sulfate	mg/L	ND	1.0	04/02/13 09:32	

LABORATORY CONTROL SAMPLE: 1162736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	5.1	101	90-110	

LABORATORY CONTROL SAMPLE: 1163180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Sulfate	mg/L	5	4.6	92	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1162737 1162738

Parameter	Units	60141070003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Bromide	mg/L	5.4	5	5	9.0	9.1	71	73	75-119	1	10	M1
Chloride	mg/L	130	100	100	222	223	92	93	64-118	0	12	
Sulfate	mg/L	ND	5	5	5.3	5.5	98	100	61-119	3	10	

MATRIX SPIKE SAMPLE: 1162739

Parameter	Units	60141066004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	ND	2500	2120	85	75-119	
Chloride	mg/L	ND	2500	2160	73	64-118	
Sulfate	mg/L	3070	2500	5030	79	61-119	

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QUALIFIERS

Project: 074922 Area 6
Pace Project No.: 60141122

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: OEXT/37722

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/52673

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: GCV/4244

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1e	Post Dgestion Spike Performed - 110% Recovery
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 Area 6
Pace Project No.: 60141122

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60141122001	GW-074922-032213-CM-MW-1-Z1	EPA 3510C	OEXT/37722	EPA 8015B	GCSV/14298
60141122002	GW-074922-032213-CM-MW-1-Z2	EPA 3510C	OEXT/37722	EPA 8015B	GCSV/14298
60141122003	GW-074922-032213-CM-MW-1-Z3	EPA 3510C	OEXT/37722	EPA 8015B	GCSV/14298
60141122001	GW-074922-032213-CM-MW-1-Z1	EPA 5030B/8015B	GCV/4244		
60141122002	GW-074922-032213-CM-MW-1-Z2	EPA 5030B/8015B	GCV/4244		
60141122003	GW-074922-032213-CM-MW-1-Z3	EPA 5030B/8015B	GCV/4244		
60141122001	GW-074922-032213-CM-MW-1-Z1	EPA 3010	MPRP/22048	EPA 6010	ICP/17600
60141122002	GW-074922-032213-CM-MW-1-Z2	EPA 3010	MPRP/22048	EPA 6010	ICP/17600
60141122003	GW-074922-032213-CM-MW-1-Z3	EPA 3010	MPRP/22048	EPA 6010	ICP/17600
60141122001	GW-074922-032213-CM-MW-1-Z1	EPA 5030B/8260	MSV/52651		
60141122002	GW-074922-032213-CM-MW-1-Z2	EPA 5030B/8260	MSV/52673		
60141122003	GW-074922-032213-CM-MW-1-Z3	EPA 5030B/8260	MSV/52651		
60141122004	GW-074922-032213-CM-MW-1-DUP	EPA 5030B/8260	MSV/52651		
60141122005	GW-074922-032213-CM-001	EPA 5030B/8260	MSV/52651		
60141122001	GW-074922-032213-CM-MW-1-Z1	SM 2320B	WET/40499		
60141122002	GW-074922-032213-CM-MW-1-Z2	SM 2320B	WET/40499		
60141122003	GW-074922-032213-CM-MW-1-Z3	SM 2320B	WET/40499		
60141122001	GW-074922-032213-CM-MW-1-Z1	SM 2540C	WET/40450		
60141122002	GW-074922-032213-CM-MW-1-Z2	SM 2540C	WET/40450		
60141122003	GW-074922-032213-CM-MW-1-Z3	SM 2540C	WET/40450		
60141122001	GW-074922-032213-CM-MW-1-Z1	SM 4500-S-2 D	WET/40458		
60141122002	GW-074922-032213-CM-MW-1-Z2	SM 4500-S-2 D	WET/40458		
60141122003	GW-074922-032213-CM-MW-1-Z3	SM 4500-S-2 D	WET/40458		
60141122001	GW-074922-032213-CM-MW-1-Z1	EPA 300.0	WETA/24072		
60141122002	GW-074922-032213-CM-MW-1-Z2	EPA 300.0	WETA/24072		
60141122003	GW-074922-032213-CM-MW-1-Z3	EPA 300.0	WETA/24072		

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: WETA/22502
QC Batch Method: SW-846 7.3.3.2
Analysis Method: SW-846 7.3.3.2
Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 60133494001

METHOD BLANK: 1100105 Matrix: Solid
Associated Lab Samples: 60133494001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/kg	ND	0.025	11/19/12 09:13	

LABORATORY CONTROL SAMPLE: 1100106

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	.5	0.57	113	71-123	

MATRIX SPIKE SAMPLE: 1100107

Parameter	Units	60133494001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	ND	.5	0.48	93	57-132	

SAMPLE DUPLICATE: 1100108

Parameter	Units	10212056001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Reactive	mg/kg	ND	.016J		23	CU

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: San Juan 32-8 #30
Pace Project No.: 60133494

QC Batch: WETA/22501
QC Batch Method: SW-846 7.3.3.2 Modified
Analysis Method: SW-846 7.3.3.2 Modified
Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 60133494002

METHOD BLANK: 1100102 Matrix: Water
Associated Lab Samples: 60133494002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/L	ND	0.0050	11/19/12 09:09	

LABORATORY CONTROL SAMPLE: 1100103

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/L	.05	0.052	104	74-121	

MATRIX SPIKE SAMPLE: 1100104

Parameter	Units	60133494002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/L	ND	.05	0.052	101	57-125	

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QUALIFIERS

Project: San Juan 32-8 #30
Pace Project No.: 60133494

DEFINITIONS

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MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

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

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MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-I	Pace Analytical Services - Indianapolis
PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: OEXT/36031

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/50267

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
CU	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
R1	RPD value was outside control limits.

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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: San Juan 32-8 #30
Pace Project No.: 60133494

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60133494001	S-074922-111412-JK-SOLID WASTE	EPA 3546	OEXT/36030	EPA 8015B	GCSV/13543
60133494002	L-074922-111412-JK-LIQ WASTE	EPA 3510C	OEXT/36031	EPA 8015B	GCSV/13542
60133494001	S-074922-111412-JK-SOLID WASTE	EPA 8015 Mod Pur	GCV/16024		
60133494002	L-074922-111412-JK-LIQ WASTE	EPA 5030/8015 Mod.	GCV/16025		
60133494001	S-074922-111412-JK-SOLID WASTE	EPA 3010	MPRP/20531	EPA 6010	ICP/16716
60133494002	L-074922-111412-JK-LIQ WASTE	EPA 3010	MPRP/20531	EPA 6010	ICP/16716
60133494001	S-074922-111412-JK-SOLID WASTE	EPA 7470	MERP/6836	EPA 7470	MERC/6798
60133494002	L-074922-111412-JK-LIQ WASTE	EPA 7470	MERP/6836	EPA 7470	MERC/6798
60133494001	S-074922-111412-JK-SOLID WASTE	OA1	MSV/50266		
60133494001	S-074922-111412-JK-SOLID WASTE	EPA 8260	MSV/50259		
60133494002	L-074922-111412-JK-LIQ WASTE	EPA 8260	MSV/50259		
60133494002	L-074922-111412-JK-LIQ WASTE	EPA 8260/OA1	MSV/50267		
60133494001	S-074922-111412-JK-SOLID WASTE	ASTM D2974	PMST/7994		
60133494002	L-074922-111412-JK-LIQ WASTE	EPA 1010	WET/38322		
60133494002	L-074922-111412-JK-LIQ WASTE	SW-846 7.3.4.2 Modified	WET/38371		
60133494001	S-074922-111412-JK-SOLID WASTE	SW-846 7.3.4.2	WET/38372		
60133494002	L-074922-111412-JK-LIQ WASTE	EPA 9040	WET/38330		
60133494001	S-074922-111412-JK-SOLID WASTE	EPA 9045	WET/38331		
60133494001	S-074922-111412-JK-SOLID WASTE	ASTM D92	WET/38281		
60133494001	S-074922-111412-JK-SOLID WASTE	SW-846 7.3.3.2	WETA/22502		
60133494002	L-074922-111412-JK-LIQ WASTE	SW-846 7.3.3.2 Modified	WETA/22501		

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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-138
Revised March 12, 2007

*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. **Generator Name and Address:**
ConocoPhillips Company, 315 Johnston Ave., Bartlesville, OK 74004

2. **Originating Site:**
Adjacent to San Juan 32-8 No. 30-27 (API 30-045-11217)

3. **Location of Material (Street Address, City, State or ULSTR):**

4. **Source and Description of Waste: Drilling Fluids & Cement**

Estimated Volume _____ yd^3 / bbls Known Volume (to be entered by the operator at the end of the haul) _____ yd^3 / bbls

5. **GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS**

I, Kelly Wilkes, representative or authorized agent for ConocoPhillips do hereby
Generator Signature
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. ***Operator Use Only: Waste Acceptance Frequency*** ☐ ***Monthly*** ☐ ***Weekly*** ☐ ***Per Load***

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Kelly Wilkes, representative for ConocoPhillips authorize JFJ/IEI to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, _____, representative for _____ do hereby certify that
Representative/Agent Signature
representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. **Transporter: Dawn Trucking**

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: **JFJ Landfarm/Industrial Ecosystems, Inc. * Permit #: NM 01-0010B**

Address of Facility: **# 49 CR 3150 Aztec, NM 87410**

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☐ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

NT NAME: _____ TITLE: _____ DATE: _____

SIGNATURE: _____ TELEPHONE NO.: 505-632-1782
Surface Waste Management Facility Authorized Agent

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-138
Revised March 12, 2007

*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. **Generator Name and Address:** ConocoPhillips Company, 315 Johnstone Avenue, Bartlesville, OK 74004

2. **Originating Site:** Adjacent to San Juan 32-8 No. 30-27 (API 30-045-11217)

3. **Location of Material (Street Address, City, State or ULSTR):** Tank 1 and Tank 2

4. **Source and Description of Waste:** **Drilling Fluids & Cement** -Purge water from the drilling activities used to install a 750 ft. monitoring well

Estimated Volume ~~2000 gal~~ 200 bblc yd^3 / bbls Known Volume (to be entered by the operator at the end of the haul) _____ yd^3 / bbls

5. **GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS**

I, Kelly Williams, representative or authorized agent for ConocoPhillips do hereby
Generator Signature
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. ***Operator Use Only: Waste Acceptance Frequency*** ☐ ***Monthly*** ☐ ***Weekly*** ☐ ***Per Load***

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, _____, representative for ConocoPhillips Company authorize JFJ/IEI to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, _____, representative for _____ do hereby certify that
Representative/Agent Signature
representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

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Name and Facility Permit #: **JFJ Landfarm/Industrial Ecosystems, Inc. * Permit #: NM 01-0010B**

Address of Facility: # 49 CR 3150 Aztec, NM 87410

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☐ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: _____ TITLE: _____ DATE: _____

SIGNATURE: _____ TELEPHONE NO.: 505-632-1782
Surface Waste Management Facility Authorized Agent

647

TABLE I-1

LIQUID INVESTIGATIVE-DERIVED WASTE ANALYTICAL RESULTS
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Sample ID	Sample Date	Arsenic (mg/L)	Barium (Total, mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Selenium (mg/L)	Silver (mg/L)	Mercury (mg/L)	TPH-DRO (C10-C28) (mg/L)	TPH-ORO (C28-C35) (mg/L)	TPH-DRO (mg/L)	GRO (C06-C10) (mg/L)	Benzene (µg/L)	2-Butanone (Methyl ethyl ketone) (MEK) (ug/L)	Carbon tetrachloride (µg/L)	Chlorobenzene (µg/L)	Chloroform (Trichloromethane) (µg/L)	1,2-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	Vinyl chloride (µg/L)	Reactive Sulfide (mg/L)	Flashpoint (deg F)	pH (standard units)	Reactive Cyanide (mg/L)	Chloride (mg/L)
New Mexico Standards [5]		5.0	100	1.0		5.0	1.0	5.0	0.2	100	100	100	100	5000		5000	100,000	6000	500		700		200					
L-074922-111412-JK-LIQ-WASTE	11/14/2012	< 0.50	< 2.5	< 0.050	< 0.10	< 0.50	< 0.50	< 0.10	< 0.0020	0.64	< 0.50	0.64	< 0.20	< 50	< 1,000	< 50	< 50	< 200	< 50	< 50	< 50	< 50	< 100	< 4.0	> 210	10.8	< 0.0050	--
074922-091213-KW-FT-379	9/12/2013	< 0.50	< 2.5	< 0.050	< 0.10	< 0.50	< 0.50	< 0.10	< 0.0020	3.3	1.2	--	< 0.50	< 50	< 1,000	< 50	< 50	< 200	< 50	< 50	< 50	< 50	< 100	< 10.0	> 210	10.5	< 0.0050	--
074922-091213-KW-FT-229	9/12/2013	< 0.50	< 2.5	< 0.050	< 0.10	< 0.50	< 0.50	< 0.10	< 0.0020	1.0	< 0.50	--	< 0.50	< 50	< 1,000	< 50	< 50	< 200	< 50	< 50	< 50	< 50	< 100	< 10.0	> 210	10.5	< 0.0050	--
074922-092413-KW-FT-CSP	9/24/2013	< 0.50	< 2.5	< 0.050	< 0.10	< 0.50	< 0.50	< 0.10	< 0.0020	0.63	< 0.50	--	< 0.50	< 50	< 1,000	< 50	< 50	< 200	< 50	< 50	< 50	< 50	< 100	< 10.0	> 210	8.2	< 0.0050	123
074922-092413-KW-FT-112	9/25/2013	< 0.50	< 2.5	< 0.050	< 0.10	< 0.50	< 0.50	< 0.10	< 0.0020	0.51	< 0.50	--	< 0.50	< 50	< 1,000	< 50	< 50	< 200	< 50	< 50	< 50	< 50	< 100	< 10.0	> 210	8.0	< 0.0050	76.6
074922-100313-MH-FT-229	10/3/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.2	--	--

Notes:

[1] -- Indicates not analyzed

[2] Gasoline Range Organics (GRO)

[3] Diesel Range Organics (DRO)

[4] Total Phase Hydrocarbons (TPH)

[5] New Mexico Standards for Investigative-Derived Waste

TABLE I-2

SOLID INVESTIGATIVE-DERIVED WASTE ANALYTICAL RESULTS
CONOCOPHILLIPS COMPANY
SAN JUAN 32-8 No. 30 AREA INVESTIGATION

Sample ID	Sample Date	Arsenic (mg/L)	Barium (Total, mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Selenium (mg/L)	Silver (mg/L)	Mercury (mg/L)	TPH-DRO (C10-C28) (mg/kg)	TPH-ORO (C28-C35) (mg/kg)	TPH Total (C10-C32) (mg/kg)	GRO (C06-C10) (mg/kg)	Benzene (µg/L)	2-Butanone (Methyl ethyl ketone) (MEK) (ug/L)	Carbon tetrachloride (µg/L)	Chlorobenzene (µg/L)	Chloroform (Trichloromethane) (µg/L)	1,2-Dichloroethane (µg/L)	1,1-Dichloroethene (µg/L)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	Vinyl chloride (µg/L)	Percent Moisture (%)	Reactive Sulfide (mg/kg)	Flashpoint (deg F)	pH (standard units)	Reactive Cyanide (mg/kg)	Benzene (µg/kg)	Ethylbenzene (µg/kg	Toluene (µg/kg)	Xylene (µg/kg)	Chloride (mg/kg)
New Mexico Standards [5]		*5.0*	*100*	*1.0*		*5.0*	*1.0*	*5.0*	*0.2*	*100*	*100*	*100*	*100*	*5000*		*5,000*	*100,000*	*6000*	*500*		*700*		*200*						50,000	50,000	50,000	50,000	
S-074922-111412-JK-SOLID	11/14/2012	< 0.50	2.6	< 0.050	< 0.10	< 0.50	< 0.50	< 0.10	< 0.0020	84.9	25.7	98.7	< 1.2	< 50	< 1,000	< 50	< 50	< 200	< 50	< 50	< 50	< 50	< 100	18.3	< 40.0	> 210	8.8	< 0.025	--		--	--	--
SS-074922-012813-JK-Rolloff	1/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.8	--	--	--	--	< 5.7	< 5.7	< 5.7	< 5.7	--
074922-091213-MW-DW-01	9/12/2013	< 0.50	< 2.5	< 0.050	< 0.10	< 0.50	< 0.50	< 0.10	< 0.0020	37.4	< 11.8	--	< 12.0	< 50	< 1,000	< 50	< 50	< 200	< 50	< 50	< 50	< 50	< 100	16.5	< 100	> 210	6.7	< 0.025	--		--	--	--
074922-092213-KW-20-0107	9/22/2013	< 0.50	< 2.5	< 0.050	< 0.10	< 0.50	< 0.50	< 0.10	< 0.0020	22.0	< 11.9	--	< 12.1	< 50	< 1,000	< 50	< 50	< 200	< 50	< 50	< 50	< 50	< 100	17.4	< 100	> 210	9.2	< 0.025	--		--	--	186
074922-092213-KW-20-036	9/22/2013	< 0.50	< 2.5	< 0.050	< 0.10	< 0.50	< 0.50	< 0.10	< 0.0020	< 10.5	< 10.5	--	< 10.3	< 50	< 1,000	< 50	< 50	< 200	< 50	< 50	< 50	< 50	< 100	5.9	< 100	> 210	8.9	< 0.025	--		--	--	< 106
074922-092213-KW-DW-13	9/22/2013	< 0.50	< 2.5	< 0.050	< 0.10	< 0.50	< 0.50	< 0.10	< 0.0020	40.9	< 12.1	--	< 11.7	< 50	< 1,000	< 50	< 50	< 200	< 50	< 50	< 50	< 50	< 100	18.5	< 100	> 210	9.1	< 0.025	--		--	--	123

Notes:

[1] -- Indicates not analyzed

[2] Gasoline Range Organics (GRO)

[3] Diesel Range Organics (DRO)

[4] Total Phase Hydrocarbons (TPH)

[5] New Mexico Standards for Investigative-Derived Waste

ISOTECH
ISOTECH LABORATORIES INC
www.isotechlabs.com

Isotech Gas Data

Job 24428
CoreTrac IS-68553

Isotech Lab No.	Sample Name	Sample Date	Sample Time	Field Name	Location	GC Date	He %	H_2 %	Ar %	O_2 %	CO_2 %	N_2 %	CO %	C_1 %	C_2 %	C_2H_4 %	C_3 %	C_3H_6 %	iC_4 %	nC_4 %	iC_5 %	nC_5 %	C_6+ %	MS Date	$\delta^{13}C_1$ ‰	δDC_1 ‰	$\delta^{13}C_2$ ‰	δDC_2 ‰	Specific Gravity	BTU	Comments
414698	A-074922-021714-BJ-MW-2	2/17/2014	11:30	San Juan 32-8 30 Area	San Juan County, NM	2/28/2014	nd	nd	0.626	9.48	4.23	43.32	nd	41.76	0.515	nd	0.0578	nd	0.0115	0.0030	0.0008	0.0002	0.0003	3/26/2014	-34.35	-160.1	-21.58	-120.3	0.835	434	
414699	A-074922-021714-BJ-MW-3	2/17/2014	12:30	San Juan 32-8 30 Area	San Juan County, NM	2/28/2014	nd	nd	0.595	12.63	0.48	49.67	nd	35.94	0.590	nd	0.0650	nd	0.0151	0.0061	0.0032	0.0008	0.0018	3/26/2014	-36.12	-168.3	-23.53	-132.3	0.842	377	
414700	A-074922-021714-BJ-MW-4 (1)	2/17/2014	12:50	San Juan 32-8 30 Area	San Juan County, NM	2/28/2014	nd	nd	0.149	2.01	1.24	12.72	nd	82.28	1.37	nd	0.163	nd	0.0355	0.0164	0.0077	0.0025	0.0049	3/26/2014	-36.38	-175.1	-23.74	-136.8	0.640	865	
414701	A-074922-021714-BJ-MW-4 (2)	2/17/2014	13:00	San Juan 32-8 30 Area	San Juan County, NM	2/28/2014	nd	nd	0.0838	0.18	1.37	7.23	nd	89.41	1.48	nd	0.175	nd	0.0377	0.0176	0.0082	0.0027	0.0050	3/26/2014	-36.35	-174.9	-23.73	-135.9	0.609	940	
414702	A-074922-021714-BJ-DUP	2/17/2014	14:30	San Juan 32-8 30 Area	San Juan County, NM	2/28/2014	nd	nd	0.634	3.17	4.28	38.61	nd	52.41	0.775	nd	0.0872	nd	0.0212	0.0069	0.0028	0.0006	0.0008	3/26/2014	-33.22	-164.1	-22.56	-127.2	0.783	548	

nd = not detected, na = not analyzed

ISOTECH
ISOTECH LABORATORIES INC
www.isotechlabs.com

Isotech Gas Data

Job 27513
CoreTrac IS-68553

Isotech Lab No.	Sample Name	Sample Date	Sample Time	Field Name	Location	GC Date	He %	H_2 %	Ar %	O_2 %	CO_2 %	N_2 %	CO %	C_1 %	C_2 %	C_2H_4 %	C_3 %	C_3H_6 %	iC_4 %	nC_4 %	iC_5 %	nC_5 %	C_6+ %	MS Date	$\delta^{13}CO_2$ ‰	$\delta^{13}C_1$ ‰	δDC_1 ‰	$\delta^{13}C_2$ ‰	δDC_2 ‰	Specific Gravity	BTU	Comments
476312	A-074922-120114-CM-MW-2	12/1/2014	10:40	San Juan 32-8 30 Area	San Juan County, NM	12/11/2014	0.0231	nd	0.291	3.51	1.52	24.47	nd	69.24	0.828	nd	0.0852	0.0001	0.0244	0.0080	0.0027	0.0010	0.0007	1/19/2015	-15.87	-36.71	-169.7	-24.41	-126.0	0.697	720	
476313	A-074922-120114-CM-MW-3	12/1/2014	10:55	San Juan 32-8 30 Area	San Juan County, NM	12/11/2014	nd	nd	0.867	14.71	4.14	68.69	nd	11.34	0.198	nd	0.0382	nd	0.0093	0.0037	0.0021	0.0005	0.0008	1/19/2015	-27.74	-34.67	-164.1	-22.48		0.968	120	
476314	A-074922-120114-CM-MW-4 (1)	12/1/2014	11:30	San Juan 32-8 30 Area	San Juan County, NM	12/11/2014	nd	nd	0.349	1.37	0.93	31.43	nd	64.71	1.06	nd	0.115	nd	0.0221	0.0101	0.0047	0.0015	0.0024	1/19/2015	-12.16	-36.45	-168.7	-23.84	-132.8	0.710	679	
476315	A-074922-120114-CM-MW-4 (2)	12/1/2014	11:35	San Juan 32-8 30 Area	San Juan County, NM	12/11/2014	nd	nd	0.191	0.034	1.16	17.96	nd	79.13	1.32	nd	0.147	nd	0.0295	0.0134	0.0061	0.0020	0.0029	1/19/2015	-10.40	-36.49	-171.7	-23.78	-132.7	0.650	831	
476316	A-074922-120114-CM-DUP	12/1/2014		San Juan 32-8 30 Area	San Juan County, NM	12/11/2014	0.0443	nd	0.250	4.03	0.77	41.67	nd	52.13	0.988	nd	0.0880	nd	0.0139	0.0075	0.0040	0.0010	0.0020	1/19/2015	-22.94	-40.34	-178.2	-25.41	-137.5	0.764	549	

nd = not detected, na = not analyzed

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

Page: of

Section A Required Client Information		Section B Required Project Information		Section C Invoice Information:	
Company:	CRA	Report To:	Christine Mathews	Attention:	ENFOS
Address:	6121 Indian School Rd NE, Ste 200	Copy To:	Angela Bown, Chris Fetters	Company Name:	
	Albequerque, NM 87110			Address	
Email To:	cmathews@craworld.com	Purchase Order No.		Pace Quote Reference:	
Phone:	503-377-3920 Fax (505)884-4932	Project Name:	Area 6	Pace Project Manager:	Alice Tracy
Requested Due Date/TAT:	standard	Project Number:	74922	Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NM

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: 8260 VOC's Full List	6010 Metals Dissolved*	2540 TDS	300.0 Cl, Br, S, bicarbona	4500 Sulfide	8015 TPH GRO and DRO	RSK175 disslvd methane	TO-15 Full list VOC's/TPH			Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 6014122
1	GW-074922-032213-CM-MW-1-Z1		WT	G	3-22-13		3-22-13	0950		11	X		X	X				X		X	X	X	X	X	X				001		(DEW) 2(AG4W) (BTEX) (RSK) (BP3C)
2	GW-074922-032213-CM-MW-1-Z2		WT	G			3-22-13	1140		10	X		X	X				X		X	X	X	X	X	X				002		4(DEW) 2(AG4W) (BTEX) (VOA) (RSK)
3	GW-074922-032213-CM-MW-1-Z3		WT	G			3-22-13	1485		11	X		X	X				X		X	X	X	X	X	X				003		(DEW) 2(AG4W) (BTEX) (RSK) (BP3C)
4	GW-074922-032213-CM-MW-1-DUP		WT	G			3-22-13	1150		2				X						X									004		2(DEW)
5	TB-074922-032213-CM-001		WT	G			3-22-13	1500		3				X						X									005		2(DEW)
6																															
7																															
8																															
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*6010 Metals Dissolved: Mg, Ca, B, K, Na	~~Christine Mathews / CRA~~	~~3-22-13~~								
~~RSK175 and TO15 direct ship to Pace Mt (Bsure~~	Christine Mathews / CRA	3-25-13	1200	[signature] / Pace	3/26/13	820	1-6	7	Y	Y
Direct ship to Airtech (EPA15/15 and ASTMD1946										
Direct ship to Isotech (isotopes, fixed gases)										

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Christine Mathews				
SIGNATURE of SAMPLER:	[signature] DATE Signed (MM/DD/YY): 3/22/13				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Page 45 of 45

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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

April 15, 2013

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074922 Area 6 Isotech
Pace Project No.: 60141214

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory between March 25, 2013 and March 27, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa
Cassie Brown, COP Conestoga-Rovers & Associa
Jason Ploss, COP Conestoga-Rovers & Associa

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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 074922 Area 6 Isotech
Pace Project No.: 60141214

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60141214001	GW-074922-032213-CM-MW-1-Z1	Water	03/22/13 00:00	03/25/13 12:00
60141214002	GW-074922-032213-CM-MW-1-Z2	Water	03/22/13 00:00	03/25/13 12:00
60141214003	GW-074922-032213-CM-MW-1-Z3	Water	03/22/13 00:00	03/25/13 12:00
60141214004	GW-074922-032213-CM-MW-1-DUP	Water	03/22/13 00:00	03/25/13 12:00
60141122006	A-074922-032213-CM-MW-1-Z2	Air	03/22/13 00:00	03/27/13 15:13
60141122007	A-074922-032213-CM-MW-1-Z3	Air	03/22/13 00:00	03/27/13 15:13
60141122008	A-074922-032213-CM-MW-1-DUP	Air	03/22/13 00:00	03/27/13 15:13
60141122009	A-074922-032213-CM-MW-1-CPW	Air	03/22/13 00:00	03/27/13 15:13

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(913)599-5665

PROJECT NARRATIVE

Project:
Pace Project No.:

Method:
Description:
Client:
Date:

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

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ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 343710 Job #: 21103 IS-63575
Sample Name: A-074922-032213-CM-MW-1-Z2 Co. Lab#:
Company: Pace Analytical
Date Sampled: 3/22/2013
Container: Cali-5-Bond Bag
Field/Site Name: 074922 / Area 6 / SJ 32-8
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Received: 3/26/2013 Date Reported: 4/15/2013

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	nd			
Hydrogen	nd			
Argon	0.111			
Oxygen	1.78			
Nitrogen	98.09			
Carbon Dioxide	0.013			
Methane	0.0011			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0
Specific gravity, calculated: 0.970

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 343711 Job #: 21103 IS-63575
Sample Name: A-074922-032213-CM-MW-1-Z3 Co. Lab#:
Company: Pace Analytical
Date Sampled: 3/22/2013
Container: Cali-5-Bond Bag
Field/Site Name: 074922 / Area 6 / SJ 32-8
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Received: 3/26/2013 Date Reported: 4/15/2013

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	nd			
Hydrogen	nd			
Argon	0.0578			
Oxygen	0.36			
Nitrogen	99.56			
Carbon Dioxide	0.018			
Methane	0.0005			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0
Specific gravity, calculated: 0.968

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 343712 Job #: 21103 IS-63575
Sample Name: A-074922-032213-CM-MW-1-DUP Co. Lab#:
Company: Pace Analytical
Date Sampled: 3/22/2013
Container: Cali-5-Bond Bag
Field/Site Name: 074922 / Area 6 / SJ 32-8
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Received: 3/26/2013 Date Reported: 4/15/2013

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	nd			
Hydrogen	nd			
Argon	0.0652			
Oxygen	0.54			
Nitrogen	99.38			
Carbon Dioxide	0.011			
Methane	0.0018			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 0
Specific gravity, calculated: 0.968

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 343713 Job #: 21103 IS-63575
Sample Name: A-074922-032213-CM-MW-1-CPW Co. Lab#:
Company: Pace Analytical
Date Sampled: 3/22/2013
Container: Cali-5-Bond Bag
Field/Site Name: 074922 / Area 6 / SJ 32-8
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Received: 3/26/2013 Date Reported: 4/15/2013

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	0.0034			
Hydrogen	nd			
Argon	0.130			
Oxygen	0.12			
Nitrogen	11.27			
Carbon Dioxide	1.60			
Methane	85.27	-36.66	-175.0	
Ethane	1.39			
Ethylene	nd			
Propane	0.160			
Propylene	nd			
Iso-butane	0.0333			
N-butane	0.0148			
Iso-pentane	0.0069			
N-pentane	0.0018			
Hexanes +	0.0030			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 895
Specific gravity, calculated: 0.627

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	343706	Job #:	21102	IS-63574
Sample Name/Number:	GW-074922-032213-CM-MW-1-Z1			
Company:	Pace Analytical			
Date Sampled:	3/22/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:	San Juan County, NM			
Formation/Depth:				
Sampling Point:				
Date Received:	3/26/2013	Date Reported:	4/03/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	na			
Hydrogen	nd			
Argon	1.21			
Oxygen	24.61			
Nitrogen	62.25			
Carbon Dioxide	5.91			
Methane	5.88			
Ethane	0.132			
Ethylene	nd			
Propane	0.0099			
Propylene	nd			
Iso-butane	nd			
N-butane	0.0005			
Iso-pentane	0.0009			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.79
Concentration of methane in water = 1.8 cc/L ; 1.2 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	343707	Job #:	21102	IS-63574
Sample Name/Number:	GW-074922-032213-CM-MW-1-Z2			
Company:	Pace Analytical			
Date Sampled:	3/22/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:	San Juan County, NM			
Formation/Depth:				
Sampling Point:				
Date Received:	3/26/2013	Date Reported:	4/03/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	na			
Hydrogen	nd			
Argon	0.663			
Oxygen	4.72			
Nitrogen	93.07			
Carbon Dioxide	1.46			
Methane	0.0860			
Ethane	0.0026			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.77
Concentration of methane in water = 0.034 cc/L ; 0.023 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	343708	Job #:	21102	IS-63574
Sample Name/Number:	GW-074922-032213-CM-MW-1-Z3			
Company:	Pace Analytical			
Date Sampled:	3/22/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:	San Juan County, NM			
Formation/Depth:				
Sampling Point:				
Date Received:	3/26/2013	Date Reported:	4/03/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	0.0116			
Hydrogen	nd			
Argon	0.144			
Oxygen	0.23			
Nitrogen	99.32			
Carbon Dioxide	0.26			
Methane	0.0334			
Ethane	0.0009			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.16 cc/L ; 0.10 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	343709	Job #:	21102	IS-63574
Sample Name/Number:	GW-074922-032213-CM-MW-1-DUP			
Company:	Pace Analytical			
Date Sampled:	3/22/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:	San Juan County, NM			
Formation/Depth:				
Sampling Point:				
Date Received:	3/26/2013	Date Reported:	4/03/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Hydrogen Sulfide	na			
Helium	0.0108			
Hydrogen	nd			
Argon	0.127			
Oxygen	0.57			
Nitrogen	98.51			
Carbon Dioxide	0.76			
Methane	0.0231			
Ethane	0.0005			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.15 cc/L ; 0.10 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

60141214

ISOTECH

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Send Data and Invoice to

Name: Christine Mathews
Company: CRA
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: 074922 Area 6
Location: San Juan County, NM
Sampled by: C. Mathews J. Kirchner

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Dissolved methane			Comments
	GW-074922-032213-CM-MW-1-Z1	3.22.13	X			
	GW-074922-032213-CM-MW-1-Z2	3.22.13	X			
	GW-074922-032213-CM-MW-1-Z3	3.22.13	X			
	GW-074922-032213-CM-MW-1-DUP	3.22.13	X			

Chain-of-Custody Record

	Signature	Company	Date CM	Time
Relinquished by	[signature]	CRA	~~3.25.13~~	
Received by	[signature]	[illegible]	3-25-13	1200
Relinquished by				
Received by				
Relinquished by				
Received by				

3/26/13 0700

60H1214 1 of 2

ISOTECH

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Send Data and Invoice to

Name: Christine Mathews
Company: CRA
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: 074922- Area 6
Location: San Juan County, NM
Sampled by: C. Mathews J. Kirchner

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: See Comments			Comments
	A-074922-032213-CM-MW-1-Z2	3·22·13	X			Analyze for - Carbon
	A-074922-032213-CM-MW-1-Z3	3·22·13	X			and hydrogen isotopes,
	A-074922-032213-CM-MW-1-DUP	3·22·13	X			hydrocarbons/fixed gases,
	A-074922-032213-CM-CPW	3·22·13	X			specific gravity, BTU/cu.ft.

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	[signature]	CRA	3/25/13	1200
Received by	Peter Calcko	Isotech	3/26/13	0900
Relinquished by				
Received by				
Relinquished by				
Received by				

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

July 08, 2013

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on June 19, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa
Cassie Brown, COP Conestoga-Rovers & Associa
Jason Ploss, COP Conestoga-Rovers & Associa

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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(913)599-5665

SAMPLE SUMMARY

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60147217001	GW-074922-061813-CM-MW-1-Z1	Water	06/18/13 10:45	06/19/13 08:30
60147217002	GW-074922-061813-CM-MW-1-Z2	Water	06/18/13 10:25	06/19/13 08:30
60147217003	GW-074922-061813-CM-MW-1-Z3	Water	06/18/13 11:55	06/19/13 08:30
60147217004	GW-074922-061813-CM-MW-1-DUP	Water	06/18/13 10:10	06/19/13 08:30

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SAMPLE ANALYTE COUNT

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60147217001	GW-074922-061813-CM-MW-1-Z1	EPA 8015B	NAW	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	TJT	5
		EPA 5030B/8260	PRG	70
		SM 2320B	JMC	1
		SM 2540C	NDL	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60147217002	GW-074922-061813-CM-MW-1-Z2	EPA 8015B	NAW	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	TJT	5
		EPA 5030B/8260	PRG	70
		SM 2320B	JMC	1
		SM 2540C	NDL	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60147217003	GW-074922-061813-CM-MW-1-Z3	EPA 8015B	NAW	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	TJT	5
		EPA 5030B/8260	PRG	70
		SM 2320B	JMC	1
		SM 2540C	NDL	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60147217004	GW-074922-061813-CM-MW-1-DUP	EPA 5030B/8260	PRG	70

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PROJECT NARRATIVE

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: July 08, 2013

General Information:
3 samples were analyzed for EPA 8015B. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C 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.

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: GCSV/14838

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Method: EPA 5030B/8015B
Description: Gasoline Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: July 08, 2013

General Information:
3 samples were analyzed for EPA 5030B/8015B. 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: GCV/4348

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: July 08, 2013

General Information:
3 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

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: MPRP/23175

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60147217001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1208707)
  - Calcium, Dissolved
  - Sodium, Dissolved
- MSD (Lab ID: 1208708)
  - Calcium, Dissolved
  - Sodium, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: July 08, 2013

General Information:
4 samples were analyzed for EPA 5030B/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/54549

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60147058011

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1211009)
  - Bromomethane
  - Methyl-tert-butyl ether

R1: RPD value was outside control limits.

- MSD (Lab ID: 1211010)
  - Chloroethane
  - trans-1,2-Dichloroethene

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: July 08, 2013

General Information:
3 samples were analyzed for SM 2320B. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: July 08, 2013

General Information:
3 samples were analyzed for SM 2540C. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: July 08, 2013

General Information:
3 samples were analyzed for SM 4500-S-2 D. 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.

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.

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Method: EPA 300.0
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: July 08, 2013

General Information:
3 samples were analyzed for EPA 300.0. 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.

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.

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-Z1 **Lab ID: 60147217001** Collected: 06/18/13 10:45 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	**4.5**	mg/L	0.50	0.25	1	06/24/13 00:00	06/28/13 16:54		
Surrogates									
p-Terphenyl (S)	75	%	35-121		1	06/24/13 00:00	06/28/13 16:54	92-94-4	
n-Tetracosane (S)	75	%	35-120		1	06/24/13 00:00	06/28/13 16:54	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		06/24/13 18:40		
Surrogates									
4-Bromofluorobenzene (S)	99	%	65-123		1		06/24/13 18:40	460-00-4	
Preservation pH	**1.0**				1		06/24/13 18:40		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**296**	ug/L	200	100	2	06/21/13 15:00	06/27/13 16:01	7440-42-8	
Calcium, Dissolved	**500000**	ug/L	200	20.7	2	06/21/13 15:00	06/27/13 16:01	7440-70-2	M1
Magnesium, Dissolved	**13300**	ug/L	100	13.0	2	06/21/13 15:00	06/27/13 16:01	7439-95-4	
Potassium, Dissolved	**15600**	ug/L	1000	88.8	2	06/21/13 15:00	06/27/13 16:01	7440-09-7	
Sodium, Dissolved	**839000**	ug/L	1000	43.4	2	06/21/13 15:00	06/27/13 16:01	7440-23-5	M1
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**99.0**	ug/L	10.0	1.9	1		06/26/13 15:44	67-64-1	
Benzene	**1.2**	ug/L	1.0	0.060	1		06/26/13 15:44	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.10	1		06/26/13 15:44	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.15	1		06/26/13 15:44	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.19	1		06/26/13 15:44	75-27-4	
Bromoform	ND	ug/L	1.0	0.070	1		06/26/13 15:44	75-25-2	
Bromomethane	ND	ug/L	5.0	0.16	1		06/26/13 15:44	74-83-9	
2-Butanone (MEK)	**118**	ug/L	10.0	0.59	1		06/26/13 15:44	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 15:44	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.050	1		06/26/13 15:44	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.34	1		06/26/13 15:44	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.12	1		06/26/13 15:44	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.18	1		06/26/13 15:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.21	1		06/26/13 15:44	108-90-7	
Chloroethane	ND	ug/L	1.0	0.15	1		06/26/13 15:44	75-00-3	
Chloroform	**1.3**	ug/L	1.0	0.14	1		06/26/13 15:44	67-66-3	
Chloromethane	ND	ug/L	1.0	0.080	1		06/26/13 15:44	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.12	1		06/26/13 15:44	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.14	1		06/26/13 15:44	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.59	1		06/26/13 15:44	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/26/13 15:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.17	1		06/26/13 15:44	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		06/26/13 15:44	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.050	1		06/26/13 15:44	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.070	1		06/26/13 15:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.060	1		06/26/13 15:44	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-Z1 **Lab ID: 60147217001** Collected: 06/18/13 10:45 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/26/13 15:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.050	1		06/26/13 15:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/26/13 15:44	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.28	1		06/26/13 15:44	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		06/26/13 15:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.080	1		06/26/13 15:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.20	1		06/26/13 15:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		06/26/13 15:44	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.17	1		06/26/13 15:44	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.19	1		06/26/13 15:44	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.090	1		06/26/13 15:44	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.14	1		06/26/13 15:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		06/26/13 15:44	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.18	1		06/26/13 15:44	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.18	1		06/26/13 15:44	87-68-3	
2-Hexanone	ND	ug/L	10.0	1.2	1		06/26/13 15:44	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		06/26/13 15:44	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.10	1		06/26/13 15:44	99-87-6	
Methylene chloride	ND	ug/L	1.0	0.15	1		06/26/13 15:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.42	1		06/26/13 15:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.060	1		06/26/13 15:44	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.16	1		06/26/13 15:44	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 15:44	103-65-1	
Styrene	ND	ug/L	1.0	0.12	1		06/26/13 15:44	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		06/26/13 15:44	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		06/26/13 15:44	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		06/26/13 15:44	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		06/26/13 15:44	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.12	1		06/26/13 15:44	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.10	1		06/26/13 15:44	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.11	1		06/26/13 15:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.20	1		06/26/13 15:44	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		06/26/13 15:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.34	1		06/26/13 15:44	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.19	1		06/26/13 15:44	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.090	1		06/26/13 15:44	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 15:44	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.13	1		06/26/13 15:44	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		06/26/13 15:44	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	116	%	80-120		1		06/26/13 15:44	460-00-4	
Dibromofluoromethane (S)	105	%	80-120		1		06/26/13 15:44	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	80-120		1		06/26/13 15:44	17060-07-0	
Toluene-d8 (S)	91	%	80-120		1		06/26/13 15:44	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		06/26/13 15:44		

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-Z1 **Lab ID: 60147217001** Collected: 06/18/13 10:45 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**297**	mg/L	20.0	1.2	1		06/24/13 11:29		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**4130**	mg/L	5.0	5.0	1		06/25/13 16:02		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**0.061**	mg/L	0.050	0.016	1		06/24/13 15:09	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	ND	mg/L	1.0	0.090	1		06/27/13 16:31	24959-67-9	
Chloride	**50.5**	mg/L	5.0	2.5	5		06/28/13 09:38	16887-00-6	
Sulfate	**3090**	mg/L	500	80.0	500		06/28/13 09:54	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-Z2 **Lab ID: 60147217002** Collected: 06/18/13 10:25 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	ND	mg/L	0.50	0.25	1	06/24/13 00:00	06/28/13 17:01		
Surrogates									
p-Terphenyl (S)	71	%	35-121		1	06/24/13 00:00	06/28/13 17:01	92-94-4	
n-Tetracosane (S)	71	%	35-120		1	06/24/13 00:00	06/28/13 17:01	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		06/24/13 19:01		
Surrogates									
4-Bromofluorobenzene (S)	72	%	65-123		1		06/24/13 19:01	460-00-4	
Preservation pH	**1.0**				1		06/24/13 19:01		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**403**	ug/L	300	150	3	06/21/13 15:00	06/27/13 16:09	7440-42-8	
Calcium, Dissolved	**502000**	ug/L	300	31.0	3	06/21/13 15:00	06/27/13 16:09	7440-70-2	
Magnesium, Dissolved	**13800**	ug/L	150	19.4	3	06/21/13 15:00	06/27/13 16:09	7439-95-4	
Potassium, Dissolved	**15800**	ug/L	1500	133	3	06/21/13 15:00	06/27/13 16:09	7440-09-7	
Sodium, Dissolved	**1290000**	ug/L	1500	65.0	3	06/21/13 15:00	06/27/13 16:09	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**10.7**	ug/L	10.0	1.9	1		06/26/13 15:58	67-64-1	
Benzene	ND	ug/L	1.0	0.060	1		06/26/13 15:58	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.10	1		06/26/13 15:58	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.15	1		06/26/13 15:58	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.19	1		06/26/13 15:58	75-27-4	
Bromoform	ND	ug/L	1.0	0.070	1		06/26/13 15:58	75-25-2	
Bromomethane	ND	ug/L	5.0	0.16	1		06/26/13 15:58	74-83-9	
2-Butanone (MEK)	**46.6**	ug/L	10.0	0.59	1		06/26/13 15:58	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 15:58	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.050	1		06/26/13 15:58	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.34	1		06/26/13 15:58	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.12	1		06/26/13 15:58	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.18	1		06/26/13 15:58	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.21	1		06/26/13 15:58	108-90-7	
Chloroethane	ND	ug/L	1.0	0.15	1		06/26/13 15:58	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/26/13 15:58	67-66-3	
Chloromethane	ND	ug/L	1.0	0.080	1		06/26/13 15:58	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.12	1		06/26/13 15:58	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.14	1		06/26/13 15:58	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.59	1		06/26/13 15:58	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/26/13 15:58	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.17	1		06/26/13 15:58	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		06/26/13 15:58	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.050	1		06/26/13 15:58	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.070	1		06/26/13 15:58	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.060	1		06/26/13 15:58	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-Z2 **Lab ID: 60147217002** Collected: 06/18/13 10:25 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/26/13 15:58	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.050	1		06/26/13 15:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/26/13 15:58	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.28	1		06/26/13 15:58	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		06/26/13 15:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.080	1		06/26/13 15:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.20	1		06/26/13 15:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		06/26/13 15:58	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.17	1		06/26/13 15:58	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.19	1		06/26/13 15:58	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.090	1		06/26/13 15:58	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.14	1		06/26/13 15:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		06/26/13 15:58	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.18	1		06/26/13 15:58	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.18	1		06/26/13 15:58	87-68-3	
2-Hexanone	ND	ug/L	10.0	1.2	1		06/26/13 15:58	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		06/26/13 15:58	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.10	1		06/26/13 15:58	99-87-6	
Methylene chloride	ND	ug/L	1.0	0.15	1		06/26/13 15:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.42	1		06/26/13 15:58	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.060	1		06/26/13 15:58	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.16	1		06/26/13 15:58	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 15:58	103-65-1	
Styrene	ND	ug/L	1.0	0.12	1		06/26/13 15:58	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		06/26/13 15:58	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		06/26/13 15:58	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		06/26/13 15:58	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		06/26/13 15:58	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.12	1		06/26/13 15:58	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.10	1		06/26/13 15:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.11	1		06/26/13 15:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.20	1		06/26/13 15:58	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		06/26/13 15:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.34	1		06/26/13 15:58	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.19	1		06/26/13 15:58	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.090	1		06/26/13 15:58	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 15:58	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.13	1		06/26/13 15:58	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		06/26/13 15:58	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	94	%	80-120		1		06/26/13 15:58	460-00-4	
Dibromofluoromethane (S)	108	%	80-120		1		06/26/13 15:58	1868-53-7	
1,2-Dichloroethane-d4 (S)	115	%	80-120		1		06/26/13 15:58	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		06/26/13 15:58	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		06/26/13 15:58		

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-Z2 **Lab ID: 60147217002** Collected: 06/18/13 10:25 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**467**	mg/L	20.0	1.2	1		06/24/13 11:34		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**5510**	mg/L	5.0	5.0	1		06/25/13 16:02		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**12.4**	mg/L	0.50	0.16	10		06/24/13 15:24	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	ND	mg/L	1.0	0.090	1		06/27/13 16:48	24959-67-9	
Chloride	**117**	mg/L	10.0	5.0	10		06/28/13 10:11	16887-00-6	
Sulfate	**3300**	mg/L	500	80.0	500		06/28/13 11:16	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-Z3 **Lab ID: 60147217003** Collected: 06/18/13 11:55 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	**1.4**	mg/L	0.50	0.25	1	06/24/13 00:00	06/28/13 17:08		
Surrogates									
p-Terphenyl (S)	73	%	35-121		1	06/24/13 00:00	06/28/13 17:08	92-94-4	
n-Tetracosane (S)	73	%	35-120		1	06/24/13 00:00	06/28/13 17:08	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		06/24/13 19:23		
Surrogates									
4-Bromofluorobenzene (S)	88	%	65-123		1		06/24/13 19:23	460-00-4	
Preservation pH	**1.0**				1		06/24/13 19:23		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**141**	ug/L	100	50.0	1	06/21/13 15:00	06/27/13 16:11	7440-42-8	
Calcium, Dissolved	**233000**	ug/L	100	10.4	1	06/21/13 15:00	06/27/13 16:11	7440-70-2	
Magnesium, Dissolved	**7160**	ug/L	50.0	6.5	1	06/21/13 15:00	06/27/13 16:11	7439-95-4	
Potassium, Dissolved	**13800**	ug/L	500	44.4	1	06/21/13 15:00	06/27/13 16:11	7440-09-7	
Sodium, Dissolved	**576000**	ug/L	5000	217	10	06/21/13 15:00	06/27/13 16:13	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**432**	ug/L	10.0	1.9	1		06/26/13 16:13	67-64-1	
Benzene	**2.4**	ug/L	1.0	0.060	1		06/26/13 16:13	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.10	1		06/26/13 16:13	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.15	1		06/26/13 16:13	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.19	1		06/26/13 16:13	75-27-4	
Bromoform	ND	ug/L	1.0	0.070	1		06/26/13 16:13	75-25-2	
Bromomethane	ND	ug/L	5.0	0.16	1		06/26/13 16:13	74-83-9	
2-Butanone (MEK)	**576**	ug/L	10.0	0.59	1		06/26/13 16:13	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 16:13	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.050	1		06/26/13 16:13	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.34	1		06/26/13 16:13	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.12	1		06/26/13 16:13	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.18	1		06/26/13 16:13	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.21	1		06/26/13 16:13	108-90-7	
Chloroethane	ND	ug/L	1.0	0.15	1		06/26/13 16:13	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/26/13 16:13	67-66-3	
Chloromethane	ND	ug/L	1.0	0.080	1		06/26/13 16:13	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.12	1		06/26/13 16:13	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.14	1		06/26/13 16:13	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.59	1		06/26/13 16:13	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/26/13 16:13	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.17	1		06/26/13 16:13	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		06/26/13 16:13	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.050	1		06/26/13 16:13	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.070	1		06/26/13 16:13	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.060	1		06/26/13 16:13	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-Z3 **Lab ID: 60147217003** Collected: 06/18/13 11:55 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/26/13 16:13	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.050	1		06/26/13 16:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/26/13 16:13	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.28	1		06/26/13 16:13	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		06/26/13 16:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.080	1		06/26/13 16:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.20	1		06/26/13 16:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		06/26/13 16:13	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.17	1		06/26/13 16:13	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.19	1		06/26/13 16:13	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.090	1		06/26/13 16:13	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.14	1		06/26/13 16:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		06/26/13 16:13	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.18	1		06/26/13 16:13	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.18	1		06/26/13 16:13	87-68-3	
2-Hexanone	ND	ug/L	10.0	1.2	1		06/26/13 16:13	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		06/26/13 16:13	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.10	1		06/26/13 16:13	99-87-6	
Methylene chloride	**15.4**	ug/L	1.0	0.15	1		06/26/13 16:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.42	1		06/26/13 16:13	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.060	1		06/26/13 16:13	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.16	1		06/26/13 16:13	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 16:13	103-65-1	
Styrene	ND	ug/L	1.0	0.12	1		06/26/13 16:13	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		06/26/13 16:13	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		06/26/13 16:13	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		06/26/13 16:13	127-18-4	
Toluene	**1.7**	ug/L	1.0	0.17	1		06/26/13 16:13	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.12	1		06/26/13 16:13	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.10	1		06/26/13 16:13	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.11	1		06/26/13 16:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.20	1		06/26/13 16:13	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		06/26/13 16:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.34	1		06/26/13 16:13	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.19	1		06/26/13 16:13	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.090	1		06/26/13 16:13	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 16:13	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.13	1		06/26/13 16:13	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		06/26/13 16:13	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	96	%	80-120		1		06/26/13 16:13	460-00-4	
Dibromofluoromethane (S)	102	%	80-120		1		06/26/13 16:13	1868-53-7	
1,2-Dichloroethane-d4 (S)	107	%	80-120		1		06/26/13 16:13	17060-07-0	
Toluene-d8 (S)	92	%	80-120		1		06/26/13 16:13	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		06/26/13 16:13		

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-Z3 **Lab ID: 60147217003** Collected: 06/18/13 11:55 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**1420**	mg/L	60.0	3.6	3		06/24/13 13:27		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**2560**	mg/L	5.0	5.0	1		06/25/13 16:02		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	**2.1**	mg/L	0.10	0.032	2		06/24/13 15:11	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	**4.5**	mg/L	1.0	0.090	1		06/27/13 17:20	24959-67-9	
Chloride	**165**	mg/L	20.0	10.0	20		06/28/13 11:49	16887-00-6	
Sulfate	**145**	mg/L	20.0	3.2	20		06/28/13 11:49	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-DUP **Lab ID: 60147217004** Collected: 06/18/13 10:10 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	1.9	1		06/26/13 16:28	67-64-1	
Benzene	ND	ug/L	1.0	0.060	1		06/26/13 16:28	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.10	1		06/26/13 16:28	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.15	1		06/26/13 16:28	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.19	1		06/26/13 16:28	75-27-4	
Bromoform	ND	ug/L	1.0	0.070	1		06/26/13 16:28	75-25-2	
Bromomethane	ND	ug/L	5.0	0.16	1		06/26/13 16:28	74-83-9	
2-Butanone (MEK)	**46.3**	ug/L	10.0	0.59	1		06/26/13 16:28	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 16:28	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.050	1		06/26/13 16:28	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.34	1		06/26/13 16:28	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.12	1		06/26/13 16:28	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.18	1		06/26/13 16:28	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.21	1		06/26/13 16:28	108-90-7	
Chloroethane	ND	ug/L	1.0	0.15	1		06/26/13 16:28	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		06/26/13 16:28	67-66-3	
Chloromethane	ND	ug/L	1.0	0.080	1		06/26/13 16:28	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.12	1		06/26/13 16:28	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.14	1		06/26/13 16:28	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.59	1		06/26/13 16:28	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		06/26/13 16:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.17	1		06/26/13 16:28	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		06/26/13 16:28	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.050	1		06/26/13 16:28	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.070	1		06/26/13 16:28	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.060	1		06/26/13 16:28	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		06/26/13 16:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.050	1		06/26/13 16:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		06/26/13 16:28	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.28	1		06/26/13 16:28	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		06/26/13 16:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.080	1		06/26/13 16:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.20	1		06/26/13 16:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		06/26/13 16:28	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.17	1		06/26/13 16:28	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.19	1		06/26/13 16:28	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.090	1		06/26/13 16:28	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.14	1		06/26/13 16:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		06/26/13 16:28	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.18	1		06/26/13 16:28	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.18	1		06/26/13 16:28	87-68-3	
2-Hexanone	ND	ug/L	10.0	1.2	1		06/26/13 16:28	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		06/26/13 16:28	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.10	1		06/26/13 16:28	99-87-6	
Methylene chloride	ND	ug/L	1.0	0.15	1		06/26/13 16:28	75-09-2	

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ANALYTICAL RESULTS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Sample: GW-074922-061813-CM-MW-1-DUP **Lab ID: 60147217004** Collected: 06/18/13 10:10 Received: 06/19/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.42	1		06/26/13 16:28	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.060	1		06/26/13 16:28	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.16	1		06/26/13 16:28	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 16:28	103-65-1	
Styrene	ND	ug/L	1.0	0.12	1		06/26/13 16:28	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		06/26/13 16:28	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		06/26/13 16:28	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		06/26/13 16:28	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		06/26/13 16:28	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.12	1		06/26/13 16:28	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.10	1		06/26/13 16:28	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.11	1		06/26/13 16:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.20	1		06/26/13 16:28	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		06/26/13 16:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.34	1		06/26/13 16:28	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.19	1		06/26/13 16:28	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.090	1		06/26/13 16:28	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		06/26/13 16:28	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.13	1		06/26/13 16:28	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		06/26/13 16:28	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		06/26/13 16:28	460-00-4	
Dibromofluoromethane (S)	108	%	80-120		1		06/26/13 16:28	1868-53-7	
1,2-Dichloroethane-d4 (S)	120	%	80-120		1		06/26/13 16:28	17060-07-0	
Toluene-d8 (S)	81	%	80-120		1		06/26/13 16:28	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		06/26/13 16:28		

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

QC Batch: GCV/4348 Analysis Method: EPA 5030B/8015B
QC Batch Method: EPA 5030B/8015B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60147217001, 60147217002, 60147217003

METHOD BLANK: 1209947 Matrix: Water
Associated Lab Samples: 60147217001, 60147217002, 60147217003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	06/24/13 14:19	
4-Bromofluorobenzene (S)	%	87	65-123	06/24/13 14:19	

LABORATORY CONTROL SAMPLE: 1209948

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	0.97	97	67-134	
4-Bromofluorobenzene (S)	%			91	65-123	

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

QC Batch: MPRP/23175 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60147217001, 60147217002, 60147217003

METHOD BLANK: 1208705 Matrix: Water
Associated Lab Samples: 60147217001, 60147217002, 60147217003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron, Dissolved	ug/L	ND	100	06/27/13 15:57	
Calcium, Dissolved	ug/L	ND	100	06/27/13 15:57	
Magnesium, Dissolved	ug/L	ND	50.0	06/27/13 15:57	
Potassium, Dissolved	ug/L	ND	500	06/27/13 15:57	
Sodium, Dissolved	ug/L	ND	500	06/27/13 15:57	

LABORATORY CONTROL SAMPLE: 1208706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron, Dissolved	ug/L	1000	968	97	80-120	
Calcium, Dissolved	ug/L	10000	9780	98	80-120	
Magnesium, Dissolved	ug/L	10000	9610	96	80-120	
Potassium, Dissolved	ug/L	10000	9640	96	80-120	
Sodium, Dissolved	ug/L	10000	9690	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1208707 1208708

Parameter	Units	60147217001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron, Dissolved	ug/L	296	1000	1000	1340	1290	104	99	75-125	4	20	
Calcium, Dissolved	ug/L	500000	10000	10000	516000	504000	158	46	75-125	2	20	M1
Magnesium, Dissolved	ug/L	13300	10000	10000	23200	22300	99	90	75-125	4	20	
Potassium, Dissolved	ug/L	15600	10000	10000	26700	26300	111	107	75-125	1	20	
Sodium, Dissolved	ug/L	839000	10000	10000	851000	824000	126	-152	75-125	3	20	M1

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

QC Batch: MSV/54549 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60147217001, 60147217002, 60147217003, 60147217004

METHOD BLANK: 1211007 Matrix: Water
Associated Lab Samples: 60147217001, 60147217002, 60147217003, 60147217004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	06/26/13 09:49	
1,1,1-Trichloroethane	ug/L	ND	1.0	06/26/13 09:49	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	06/26/13 09:49	
1,1,2-Trichloroethane	ug/L	ND	1.0	06/26/13 09:49	
1,1-Dichloroethane	ug/L	ND	1.0	06/26/13 09:49	
1,1-Dichloroethene	ug/L	ND	1.0	06/26/13 09:49	
1,1-Dichloropropene	ug/L	ND	1.0	06/26/13 09:49	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	06/26/13 09:49	
1,2,3-Trichloropropane	ug/L	ND	2.5	06/26/13 09:49	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	06/26/13 09:49	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	06/26/13 09:49	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	06/26/13 09:49	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	06/26/13 09:49	
1,2-Dichlorobenzene	ug/L	ND	1.0	06/26/13 09:49	
1,2-Dichloroethane	ug/L	ND	1.0	06/26/13 09:49	
1,2-Dichloroethene (Total)	ug/L	ND	1.0	06/26/13 09:49	
1,2-Dichloropropane	ug/L	ND	1.0	06/26/13 09:49	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	06/26/13 09:49	
1,3-Dichlorobenzene	ug/L	ND	1.0	06/26/13 09:49	
1,3-Dichloropropane	ug/L	ND	1.0	06/26/13 09:49	
1,4-Dichlorobenzene	ug/L	ND	1.0	06/26/13 09:49	
2,2-Dichloropropane	ug/L	ND	1.0	06/26/13 09:49	
2-Butanone (MEK)	ug/L	ND	10.0	06/26/13 09:49	
2-Chlorotoluene	ug/L	ND	1.0	06/26/13 09:49	
2-Hexanone	ug/L	ND	10.0	06/26/13 09:49	
4-Chlorotoluene	ug/L	ND	1.0	06/26/13 09:49	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	06/26/13 09:49	
Acetone	ug/L	ND	10.0	06/26/13 09:49	
Benzene	ug/L	ND	1.0	06/26/13 09:49	
Bromobenzene	ug/L	ND	1.0	06/26/13 09:49	
Bromochloromethane	ug/L	ND	1.0	06/26/13 09:49	
Bromodichloromethane	ug/L	ND	1.0	06/26/13 09:49	
Bromoform	ug/L	ND	1.0	06/26/13 09:49	
Bromomethane	ug/L	ND	5.0	06/26/13 09:49	
Carbon disulfide	ug/L	ND	5.0	06/26/13 09:49	
Carbon tetrachloride	ug/L	ND	1.0	06/26/13 09:49	
Chlorobenzene	ug/L	ND	1.0	06/26/13 09:49	
Chloroethane	ug/L	ND	1.0	06/26/13 09:49	
Chloroform	ug/L	ND	1.0	06/26/13 09:49	
Chloromethane	ug/L	ND	1.0	06/26/13 09:49	
cis-1,2-Dichloroethene	ug/L	ND	1.0	06/26/13 09:49	
cis-1,3-Dichloropropene	ug/L	ND	1.0	06/26/13 09:49	
Dibromochloromethane	ug/L	ND	1.0	06/26/13 09:49	

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

METHOD BLANK: 1211007 Matrix: Water

Associated Lab Samples: 60147217001, 60147217002, 60147217003, 60147217004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	06/26/13 09:49	
Dichlorodifluoromethane	ug/L	ND	1.0	06/26/13 09:49	
Ethylbenzene	ug/L	ND	1.0	06/26/13 09:49	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	06/26/13 09:49	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	06/26/13 09:49	
Methyl-tert-butyl ether	ug/L	ND	1.0	06/26/13 09:49	
Methylene chloride	ug/L	ND	1.0	06/26/13 09:49	
n-Butylbenzene	ug/L	ND	1.0	06/26/13 09:49	
n-Propylbenzene	ug/L	ND	1.0	06/26/13 09:49	
Naphthalene	ug/L	ND	10.0	06/26/13 09:49	
p-Isopropyltoluene	ug/L	ND	1.0	06/26/13 09:49	
sec-Butylbenzene	ug/L	ND	1.0	06/26/13 09:49	
Styrene	ug/L	ND	1.0	06/26/13 09:49	
tert-Butylbenzene	ug/L	ND	1.0	06/26/13 09:49	
Tetrachloroethene	ug/L	ND	1.0	06/26/13 09:49	
Toluene	ug/L	ND	1.0	06/26/13 09:49	
trans-1,2-Dichloroethene	ug/L	ND	1.0	06/26/13 09:49	
trans-1,3-Dichloropropene	ug/L	ND	1.0	06/26/13 09:49	
Trichloroethene	ug/L	ND	1.0	06/26/13 09:49	
Trichlorofluoromethane	ug/L	ND	1.0	06/26/13 09:49	
Vinyl chloride	ug/L	ND	1.0	06/26/13 09:49	
Xylene (Total)	ug/L	ND	3.0	06/26/13 09:49	
1,2-Dichloroethane-d4 (S)	%	100	80-120	06/26/13 09:49	
4-Bromofluorobenzene (S)	%	103	80-120	06/26/13 09:49	
Dibromofluoromethane (S)	%	94	80-120	06/26/13 09:49	
Toluene-d8 (S)	%	100	80-120	06/26/13 09:49	

LABORATORY CONTROL SAMPLE: 1211008

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.3	96	79-121	
1,1,1-Trichloroethane	ug/L	20	19.9	99	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	19.5	98	73-120	
1,1,2-Trichloroethane	ug/L	20	18.7	93	76-120	
1,1-Dichloroethane	ug/L	20	18.4	92	73-120	
1,1-Dichloroethene	ug/L	20	20.9	105	70-127	
1,1-Dichloropropene	ug/L	20	19.8	99	79-124	
1,2,3-Trichlorobenzene	ug/L	20	19.9	100	68-130	
1,2,3-Trichloropropane	ug/L	20	21.1	106	72-124	
1,2,4-Trichlorobenzene	ug/L	20	20.5	102	73-125	
1,2,4-Trimethylbenzene	ug/L	20	18.3	91	76-120	
1,2-Dibromo-3-chloropropane	ug/L	20	19.2	96	68-126	
1,2-Dibromoethane (EDB)	ug/L	20	20.8	104	79-121	
1,2-Dichlorobenzene	ug/L	20	19.4	97	79-120	
1,2-Dichloroethane	ug/L	20	19.1	96	72-122	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

LABORATORY CONTROL SAMPLE: 1211008

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethene (Total)	ug/L	40	36.4	91	77-120	
1,2-Dichloropropane	ug/L	20	19.2	96	77-120	
1,3,5-Trimethylbenzene	ug/L	20	17.7	89	75-120	
1,3-Dichlorobenzene	ug/L	20	19.4	97	80-120	
1,3-Dichloropropane	ug/L	20	19.6	98	76-120	
1,4-Dichlorobenzene	ug/L	20	18.6	93	80-120	
2,2-Dichloropropane	ug/L	20	18.3	92	52-135	
2-Butanone (MEK)	ug/L	100	98.4	98	69-124	
2-Chlorotoluene	ug/L	20	17.8	89	78-120	
2-Hexanone	ug/L	100	96.4	96	70-125	
4-Chlorotoluene	ug/L	20	18.6	93	80-120	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.5	97	72-123	
Acetone	ug/L	100	96.3	96	60-126	
Benzene	ug/L	20	19.1	96	73-122	
Bromobenzene	ug/L	20	19.2	96	79-120	
Bromochloromethane	ug/L	20	18.5	93	76-125	
Bromodichloromethane	ug/L	20	18.4	92	73-120	
Bromoform	ug/L	20	19.4	97	74-120	
Bromomethane	ug/L	20	17.0	85	40-146	
Carbon disulfide	ug/L	20	17.3	86	62-125	
Carbon tetrachloride	ug/L	20	19.8	99	73-125	
Chlorobenzene	ug/L	20	19.5	98	80-120	
Chloroethane	ug/L	20	26.9	135	56-159	
Chloroform	ug/L	20	18.8	94	76-120	
Chloromethane	ug/L	20	14.3	71	40-148	
cis-1,2-Dichloroethene	ug/L	20	18.0	90	69-120	
cis-1,3-Dichloropropene	ug/L	20	19.8	99	76-120	
Dibromochloromethane	ug/L	20	19.9	99	79-121	
Dibromomethane	ug/L	20	19.2	96	77-120	
Dichlorodifluoromethane	ug/L	20	19.5	97	40-141	
Ethylbenzene	ug/L	20	18.7	94	76-123	
Hexachloro-1,3-butadiene	ug/L	20	18.9	94	69-125	
Isopropylbenzene (Cumene)	ug/L	20	20.6	103	80-130	
Methyl-tert-butyl ether	ug/L	20	20.5	102	67-128	
Methylene chloride	ug/L	20	19.6	98	71-123	
n-Butylbenzene	ug/L	20	19.5	98	77-124	
n-Propylbenzene	ug/L	20	18.3	92	78-120	
Naphthalene	ug/L	20	18.3	92	64-127	
p-Isopropyltoluene	ug/L	20	19.5	98	78-120	
sec-Butylbenzene	ug/L	20	18.8	94	77-122	
Styrene	ug/L	20	19.6	98	79-120	
tert-Butylbenzene	ug/L	20	18.6	93	76-123	
Tetrachloroethene	ug/L	20	20.0	100	79-122	
Toluene	ug/L	20	19.1	95	76-122	
trans-1,2-Dichloroethene	ug/L	20	18.4	92	78-126	
trans-1,3-Dichloropropene	ug/L	20	20.6	103	79-124	
Trichloroethene	ug/L	20	17.9	89	76-120	
Trichlorofluoromethane	ug/L	20	18.9	94	69-133	

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

LABORATORY CONTROL SAMPLE: 1211008

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vinyl chloride	ug/L	20	19.3	97	57-140	
Xylene (Total)	ug/L	60	59.4	99	76-122	
1,2-Dichloroethane-d4 (S)	%			100	80-120	
4-Bromofluorobenzene (S)	%			98	80-120	
Dibromofluoromethane (S)	%			101	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1211009 1211010

Parameter	Units	60147058011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	4000	4000	3730	3940	93	98	70-127	5	20	
1,1,1-Trichloroethane	ug/L	ND	4000	4000	3900	4290	97	107	72-139	10	22	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4000	4030	4070	101	102	63-126	1	20	
1,1,2-Trichloroethane	ug/L	ND	4000	4000	3760	3640	94	91	70-121	3	24	
1,1-Dichloroethane	ug/L	ND	4000	4000	3660	4100	92	102	68-125	11	20	
1,1-Dichloroethene	ug/L	ND	4000	4000	3240	4010	81	100	66-142	21	22	
1,1-Dichloropropene	ug/L	ND	4000	4000	3870	4130	97	103	70-144	6	20	
1,2,3-Trichlorobenzene	ug/L	ND	4000	4000	3430	4080	86	102	56-133	17	35	
1,2,3-Trichloropropane	ug/L	ND	4000	4000	3730	4100	93	103	66-123	10	20	
1,2,4-Trichlorobenzene	ug/L	ND	4000	4000	3650	3990	91	100	60-129	9	26	
1,2,4-Trimethylbenzene	ug/L	136J	4000	4000	3800	3930	92	95	51-138	3	25	
1,2-Dibromo-3-chloropropane	ug/L	ND	4000	4000	3210	4000	80	100	58-130	22	26	
1,2-Dibromoethane (EDB)	ug/L	ND	4000	4000	4180	4360	105	109	56-138	4	28	
1,2-Dichlorobenzene	ug/L	ND	4000	4000	3890	3950	97	99	69-123	1	20	
1,2-Dichloroethane	ug/L	123J	4000	4000	3830	4500	93	109	53-144	16	27	
1,2-Dichloroethene (Total)	ug/L	ND	8000	8000	6810	8250	85	103	67-137	19	20	
1,2-Dichloropropane	ug/L	ND	4000	4000	3730	3960	93	99	72-126	6	20	
1,3,5-Trimethylbenzene	ug/L	25.8J	4000	4000	3660	3910	91	97	51-138	7	25	
1,3-Dichlorobenzene	ug/L	ND	4000	4000	3810	3820	95	96	67-123	0	22	
1,3-Dichloropropane	ug/L	ND	4000	4000	3920	4010	98	100	70-120	2	20	
1,4-Dichlorobenzene	ug/L	ND	4000	4000	3720	3720	93	93	68-125	0	22	
2,2-Dichloropropane	ug/L	ND	4000	4000	3310	3800	83	95	40-150	14	20	
2-Butanone (MEK)	ug/L	ND	20000	20000	17700	21200	88	106	54-127	18	20	
2-Chlorotoluene	ug/L	ND	4000	4000	3660	3840	91	96	68-123	5	20	
2-Hexanone	ug/L	ND	20000	20000	19000	20800	95	104	55-127	9	20	
4-Chlorotoluene	ug/L	ND	4000	4000	3430	3630	86	91	70-124	6	21	
4-Methyl-2-pentanone (MIBK)	ug/L	128J	20000	20000	17500	21400	87	106	61-127	20	20	
Acetone	ug/L	ND	20000	20000	18500	22100	93	111	40-139	18	24	
Benzene	ug/L	3430	4000	4000	7140	7350	93	98	48-150	3	31	
Bromobenzene	ug/L	ND	4000	4000	3910	3900	98	98	68-126	0	20	
Bromochloromethane	ug/L	ND	4000	4000	3630	3750	91	94	71-130	3	20	
Bromodichloromethane	ug/L	ND	4000	4000	3750	4150	94	104	66-123	10	20	
Bromoform	ug/L	43.8J	4000	4000	3540	3460	87	85	64-122	2	21	
Bromomethane	ug/L	1490	4000	4000	2830	3260	33	44	40-146	14	37	M1
Carbon disulfide	ug/L	ND	4000	4000	3250	3720	81	93	57-137	14	22	
Carbon tetrachloride	ug/L	ND	4000	4000	3800	4180	95	104	68-145	10	20	

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1211009 1211010

Parameter	Units	60147058011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chlorobenzene	ug/L	ND	4000	4000	3980	3840	100	96	68-131	3	22	
Chloroethane	ug/L	345	4000	4000	4330	6580	100	156	49-160	41	24	R1
Chloroform	ug/L	ND	4000	4000	3770	4020	94	101	69-126	6	20	
Chloromethane	ug/L	472	4000	4000	2510	3140	51	67	40-148	22	24	
cis-1,2-Dichloroethene	ug/L	ND	4000	4000	3300	3940	83	98	63-127	17	20	
cis-1,3-Dichloropropene	ug/L	ND	4000	4000	3660	3950	92	99	65-121	8	20	
Dibromochloromethane	ug/L	ND	4000	4000	3970	3960	99	99	70-125	0	20	
Dibromomethane	ug/L	ND	4000	4000	3720	4090	93	102	68-125	9	20	
Dichlorodifluoromethane	ug/L	129J	4000	4000	2980	3320	71	80	40-143	11	25	
Ethylbenzene	ug/L	376	4000	4000	4330	4160	99	95	50-147	4	31	
Hexachloro-1,3-butadiene	ug/L	ND	4000	4000	3810	3920	95	98	56-137	3	27	
Isopropylbenzene (Cumene)	ug/L	118J	4000	4000	4000	4230	97	103	75-143	6	20	
Methyl-tert-butyl ether	ug/L	69300	4000	4000	63200	74600	-153	131	46-143	16	29	M1
Methylene chloride	ug/L	ND	4000	4000	3780	4290	94	107	67-128	13	20	
n-Butylbenzene	ug/L	ND	4000	4000	3770	3980	94	99	61-137	5	21	
n-Propylbenzene	ug/L	ND	4000	4000	3950	3900	99	97	63-132	1	20	
Naphthalene	ug/L	ND	4000	4000	3500	3870	87	96	40-140	10	33	
p-Isopropyltoluene	ug/L	ND	4000	4000	3960	4060	99	102	65-132	3	20	
sec-Butylbenzene	ug/L	126J	4000	4000	3980	4030	96	97	67-134	1	20	
Styrene	ug/L	ND	4000	4000	3810	3900	95	98	58-133	2	21	
tert-Butylbenzene	ug/L	ND	4000	4000	3610	3930	90	98	70-132	9	21	
Tetrachloroethene	ug/L	ND	4000	4000	4180	3830	104	96	66-139	9	20	
Toluene	ug/L	4740	4000	4000	8870	8780	103	101	51-147	1	32	
trans-1,2-Dichloroethene	ug/L	ND	4000	4000	3510	4320	88	108	73-142	21	20	R1
trans-1,3-Dichloropropene	ug/L	127J	4000	4000	3970	4390	96	107	68-126	10	20	
Trichloroethene	ug/L	ND	4000	4000	3650	3820	91	95	67-130	5	20	
Trichlorofluoromethane	ug/L	ND	4000	4000	3530	4070	88	102	63-150	14	21	
Vinyl chloride	ug/L	ND	4000	4000	3440	3920	86	98	47-159	13	20	
Xylene (Total)	ug/L	1560	12000	12000	13000	13200	96	97	49-145	1	31	
1,2-Dichloroethane-d4 (S)	%						99	99	80-120			
4-Bromofluorobenzene (S)	%						99	103	80-120			
Dibromofluoromethane (S)	%						99	104	80-120			
Toluene-d8 (S)	%						104	101	80-120			
Preservation pH		1.0			1.0	1.0				0		

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

QC Batch: OEXT/38991 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B
Associated Lab Samples: 60147217001, 60147217002, 60147217003

METHOD BLANK: 1209901 Matrix: Water
Associated Lab Samples: 60147217001, 60147217002, 60147217003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	0.50	06/28/13 16:34	
n-Tetracosane (S)	%	66	35-120	06/28/13 16:34	
p-Terphenyl (S)	%	71	35-121	06/28/13 16:34	

LABORATORY CONTROL SAMPLE: 1209902

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	5	3.4	67	56-120	
n-Tetracosane (S)	%			71	35-120	
p-Terphenyl (S)	%			81	35-121	

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

QC Batch: WET/41995 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60147217001, 60147217002, 60147217003

METHOD BLANK: 1209693 Matrix: Water
Associated Lab Samples: 60147217001, 60147217002, 60147217003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	06/24/13 11:02	

LABORATORY CONTROL SAMPLE: 1209694

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	476	95	90-110	

SAMPLE DUPLICATE: 1209699

Parameter	Units	60147385002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	381	385	1	10	

SAMPLE DUPLICATE: 1209700

Parameter	Units	60147385001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	426	417	2	10	

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

QC Batch: WET/42030 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60147217001, 60147217002, 60147217003

METHOD BLANK: 1210767 Matrix: Water
Associated Lab Samples: 60147217001, 60147217002, 60147217003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	06/25/13 16:01	

LABORATORY CONTROL SAMPLE: 1210768

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 1210769

Parameter	Units	60147169001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	457	459	0	17	

SAMPLE DUPLICATE: 1210770

Parameter	Units	60147264003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1760	1730	2	17	

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

QC Batch: WET/42000 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60147217001, 60147217002, 60147217003

METHOD BLANK: 1209832 Matrix: Water
Associated Lab Samples: 60147217001, 60147217002, 60147217003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	06/24/13 15:07	

LABORATORY CONTROL SAMPLE: 1209833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.5	0.49	97	80-120	

MATRIX SPIKE SAMPLE: 1209834

Parameter	Units	60147217001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.061	.5	0.51	90	75-125	

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QUALITY CONTROL DATA

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

QC Batch: WETA/25255 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60147217001, 60147217002, 60147217003

METHOD BLANK: 1211677 Matrix: Water
Associated Lab Samples: 60147217001, 60147217002, 60147217003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	06/27/13 12:25	

METHOD BLANK: 1213541 Matrix: Water
Associated Lab Samples: 60147217001, 60147217002, 60147217003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	06/28/13 09:05	
Sulfate	mg/L	ND	1.0	06/28/13 09:05	

LABORATORY CONTROL SAMPLE: 1211678

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	4.9	99	90-110	

LABORATORY CONTROL SAMPLE: 1213542

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1211679 1211680

Parameter	Units	60146888001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Bromide	mg/L	1.9	5	5	6.7	6.7	96	97	75-119	1	10	
Chloride	mg/L	9.4	5	5	14.1	14.2	94	95	64-118	0	12	
Sulfate	mg/L	4.6	5	5	9.2	9.4	92	96	61-119	2	10	

MATRIX SPIKE SAMPLE: 1211681

Parameter	Units	60147217002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	ND	5	5.2	103	75-119	
Chloride	mg/L	117	50	162	91	64-118	
Sulfate	mg/L	3300	2500	5820	101	61-119	

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QUALIFIERS

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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BATCH QUALIFIERS

Batch: OEXT/38991

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: GCV/4348

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 / SJ32-8 30 AREA
Pace Project No.: 60147217

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60147217001	GW-074922-061813-CM-MW-1-Z1	EPA 3510C	OEXT/38991	EPA 8015B	GCSV/14838
60147217002	GW-074922-061813-CM-MW-1-Z2	EPA 3510C	OEXT/38991	EPA 8015B	GCSV/14838
60147217003	GW-074922-061813-CM-MW-1-Z3	EPA 3510C	OEXT/38991	EPA 8015B	GCSV/14838
60147217001	GW-074922-061813-CM-MW-1-Z1	EPA 5030B/8015B	GCV/4348		
60147217002	GW-074922-061813-CM-MW-1-Z2	EPA 5030B/8015B	GCV/4348		
60147217003	GW-074922-061813-CM-MW-1-Z3	EPA 5030B/8015B	GCV/4348		
60147217001	GW-074922-061813-CM-MW-1-Z1	EPA 3010	MPRP/23175	EPA 6010	ICP/18285
60147217002	GW-074922-061813-CM-MW-1-Z2	EPA 3010	MPRP/23175	EPA 6010	ICP/18285
60147217003	GW-074922-061813-CM-MW-1-Z3	EPA 3010	MPRP/23175	EPA 6010	ICP/18285
60147217001	GW-074922-061813-CM-MW-1-Z1	EPA 5030B/8260	MSV/54549		
60147217002	GW-074922-061813-CM-MW-1-Z2	EPA 5030B/8260	MSV/54549		
60147217003	GW-074922-061813-CM-MW-1-Z3	EPA 5030B/8260	MSV/54549		
60147217004	GW-074922-061813-CM-MW-1-DUP	EPA 5030B/8260	MSV/54549		
60147217001	GW-074922-061813-CM-MW-1-Z1	SM 2320B	WET/41995		
60147217002	GW-074922-061813-CM-MW-1-Z2	SM 2320B	WET/41995		
60147217003	GW-074922-061813-CM-MW-1-Z3	SM 2320B	WET/41995		
60147217001	GW-074922-061813-CM-MW-1-Z1	SM 2540C	WET/42030		
60147217002	GW-074922-061813-CM-MW-1-Z2	SM 2540C	WET/42030		
60147217003	GW-074922-061813-CM-MW-1-Z3	SM 2540C	WET/42030		
60147217001	GW-074922-061813-CM-MW-1-Z1	SM 4500-S-2 D	WET/42000		
60147217002	GW-074922-061813-CM-MW-1-Z2	SM 4500-S-2 D	WET/42000		
60147217003	GW-074922-061813-CM-MW-1-Z3	SM 4500-S-2 D	WET/42000		
60147217001	GW-074922-061813-CM-MW-1-Z1	EPA 300.0	WETA/25255		
60147217002	GW-074922-061813-CM-MW-1-Z2	EPA 300.0	WETA/25255		
60147217003	GW-074922-061813-CM-MW-1-Z3	EPA 300.0	WETA/25255		

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ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	363782	Job #:	22011	IS-63575
Sample Name/Number:	GW-074922-061813-CM-MW-1-Z1			
Company:	Pace Analytical			
Date Sampled:	6/18/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:	San Juan County, NM			
Formation/Depth:				
Sampling Point:				
Date Received:	6/19/2013	Date Reported:	7/05/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.887			
Oxygen	20.17			
Nitrogen	73.93			
Carbon Dioxide	2.25			
Methane	2.68			
Ethane	0.0754			
Ethylene	0.0005			
Propane	0.0079			
Propylene	nd			
Iso-butane	0.0005			
N-butane	0.0005			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-96.5	-12.64

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.78
Concentration of methane in water = 0.96 cc/L ; 0.64 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	363783	Job #: 22011	IS-63575
Sample Name/Number:	GW-074922-061813-CM-MW-1-Z2		
Company:	Pace Analytical		
Date Sampled:	6/18/2013		
Container:	IsoBag		
Field/Site Name:	074922 / Area 6 / SJ 32-8		
Location:	San Juan County, NM		
Formation/Depth:			
Sampling Point:			
Date Received:	6/19/2013	Date Reported:	7/05/2013

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.615			
Oxygen	7.99			
Nitrogen	88.68			
Carbon Dioxide	2.53			
Methane	0.181			
Ethane	0.0058			
Ethylene	0.0003			
Propane	0.0007			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-99.8	-12.82

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.70
Concentration of methane in water = 0.079 cc/L ; 0.052 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	363784	Job #:	22011	IS-63575
Sample Name/Number:	GW-074922-061813-CM-MW-1-Z3			
Company:	Pace Analytical			
Date Sampled:	6/18/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:	San Juan County, NM			
Formation/Depth:				
Sampling Point:				
Date Received:	6/19/2013	Date Reported:	7/05/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.114			
Oxygen	1.80			
Nitrogen	96.65			
Carbon Dioxide	0.90			
Methane	0.520			
Ethane	0.0154			
Ethylene	nd			
Propane	0.0016			
Propylene	nd			
Iso-butane	0.0001			
N-butane	0.0002			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-93.4	-12.02

Remarks:
Concentration of methane in water = 1.9 cc/L ; 1.3 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	363785	Job #:	22011	IS-63575
Sample Name/Number:	GW-074922-061813-CM-MW-1-DUP			
Company:	Pace Analytical			
Date Sampled:	6/18/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 6 / SJ 32-8			
Location:	San Juan County, NM			
Formation/Depth:				
Sampling Point:				
Date Received:	6/19/2013	Date Reported:	7/05/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.622			
Oxygen	8.88			
Nitrogen	89.31			
Carbon Dioxide	1.12			
Methane	0.0643			
Ethane	0.0024			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-99.8	-12.71

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.74
Concentration of methane in water = 0.026 cc/L ; 0.017 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH®

Send Data and Invoice to

Name: Christine Matthews
Company: CRA
Address: 6121 Indian School Rd #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmatthews@craworld.com

Project: 074922 - SJ 32830 Area
Location: San Juan County, NM
Sampled by: CM, JK

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

6014727001
COC #2

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Dissolved Methane	Analyses Requested: Oxygen & Hydrogen Isotopes δD and δ18O	Analyses Requested:	Comments
	GW-074922-061813-CM-MW-1-Z1	6/18/13	X	X		Collected @ 10:45
	GW-074922-061813-CM-MW-1-Z2	6/18/13	X	X		10:25
	GW-074922-061813-CM-MW-1-Z3	6/18/13	X	X		11:55
	GW-074922-061813-CM-MW-1-DUP	6/18/13	X	X		10:10
						* Please report to Alice Flanagan Pace Analytical Lenexa, KS

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	[signature]	CRA	6/18/13	1830
Received by	[signature]	Isotech	6/19/13	0900
Relinquished by				
Received by				
Relinquished by				
Received by				

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

September 25, 2013

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on September 20, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Kelly Blanchard, COP Conestoga-Rovers & Associa
Angela Bown, COP Conestoga-Rovers & Associa
Jeff Walker, COP Conestoga-Rovers & Associa

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60153626001	GW-074922-091913-CM-3823P1COLD	Water	09/19/13 09:20	09/20/13 08:30
60153626002	GW-074922-091913-CM-3823P1-HOT	Water	09/19/13 10:05	09/20/13 08:30
60153626003	GW-074922-091913-CM-2992	Water	09/19/13 13:00	09/20/13 13:28
60153626004	GW-074922-091913-CM-3259	Water	09/19/13 14:25	09/20/13 13:28
60153626005	GW-074922-091913-CM-DUP	Water	09/19/13 14:30	09/20/13 13:28
60153626006	GW-074922-091913-CM-001	Water	09/19/13 15:30	09/20/13 13:28

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SAMPLE ANALYTE COUNT

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60153626001	GW-074922-091913-CM-3823P1COLD	EPA 8015B	JDH	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	JGP	5
		EPA 5030B/8260	PRG	69
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60153626002	GW-074922-091913-CM-3823P1-HOT	EPA 8015B	JDH	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	JGP	5
		EPA 5030B/8260	PRG	69
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60153626003	GW-074922-091913-CM-2992	EPA 8015B	JDH	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	JGP	5
		EPA 5030B/8260	PRG	69
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60153626004	GW-074922-091913-CM-3259	EPA 8015B	JDH	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	JGP	5
		EPA 5030B/8260	PRG	69
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60153626005	GW-074922-091913-CM-DUP	EPA 8015B	JDH	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	JGP	5
		EPA 5030B/8260	PRG	69
		SM 2320B	JMC	2

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60153626006	**GW-074922-091913-CM-001**	EPA 5030B/8260	PRG	69

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Method: EPA 8015B
Description: 8015B Diesel Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 25, 2013

General Information:
5 samples were analyzed for EPA 8015B. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C 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.

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: GCSV/15472

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Method: **EPA 5030B/8015B**
Description: Gasoline Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 25, 2013

General Information:
5 samples were analyzed for EPA 5030B/8015B. 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: GCV/4492

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 25, 2013

General Information:
5 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

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: MPRP/24369

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60153253003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1257909)
  - Calcium, Dissolved
  - Sodium, Dissolved
- MSD (Lab ID: 1257910)
  - Calcium, Dissolved
  - Magnesium, Dissolved
  - Sodium, Dissolved

Additional Comments:

Analyte Comments:

QC Batch: MPRP/24369

1e: Post Digestion Spike Performed - 88.6% Recovery

- MSD (Lab ID: 1257910)
  - Magnesium, Dissolved

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 25, 2013

General Information:
6 samples were analyzed for EPA 5030B/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/56496

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 25, 2013

General Information:
5 samples were analyzed for SM 2320B. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 25, 2013

General Information:
5 samples were analyzed for SM 2540C. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 25, 2013

General Information:
5 samples were analyzed for SM 4500-S-2 D. 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.

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: September 25, 2013

General Information:
5 samples were analyzed for EPA 300.0. 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.

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: WETA/26305

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60153626001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1258512)
  - Sulfate
- MSD (Lab ID: 1258513)
  - Sulfate

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-3823P1COLD **Lab ID: 60153626001** Collected: 09/19/13 09:20 Received: 09/20/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	ND	mg/L	0.50	0.25	1	09/21/13 00:00	09/24/13 08:29		
Surrogates									
p-Terphenyl (S)	95	%	28-127		1	09/21/13 00:00	09/24/13 08:29	92-94-4	
n-Tetracosane (S)	96	%	22-121		1	09/21/13 00:00	09/24/13 08:29	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		09/24/13 21:59		
Surrogates									
4-Bromofluorobenzene (S)	100	%	65-123		1		09/24/13 21:59	460-00-4	
Preservation pH	**1.0**				1		09/24/13 21:59		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	ND	ug/L	100	50.0	1	09/21/13 10:05	09/24/13 10:56	7440-42-8	
Calcium, Dissolved	**108000**	ug/L	100	10.4	1	09/21/13 10:05	09/24/13 10:56	7440-70-2	
Magnesium, Dissolved	**2940**	ug/L	50.0	6.5	1	09/21/13 10:05	09/24/13 14:02	7439-95-4	
Potassium, Dissolved	**1540**	ug/L	500	44.4	1	09/21/13 10:05	09/24/13 14:02	7440-09-7	
Sodium, Dissolved	**181000**	ug/L	500	21.7	1	09/21/13 10:05	09/24/13 14:02	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	1.9	1		09/23/13 17:46	67-64-1	
Benzene	ND	ug/L	1.0	0.060	1		09/23/13 17:46	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.10	1		09/23/13 17:46	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.15	1		09/23/13 17:46	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.19	1		09/23/13 17:46	75-27-4	
Bromoform	ND	ug/L	1.0	0.070	1		09/23/13 17:46	75-25-2	
Bromomethane	ND	ug/L	5.0	0.16	1		09/23/13 17:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.59	1		09/23/13 17:46	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 17:46	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.050	1		09/23/13 17:46	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.34	1		09/23/13 17:46	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.12	1		09/23/13 17:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.18	1		09/23/13 17:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.21	1		09/23/13 17:46	108-90-7	
Chloroethane	ND	ug/L	1.0	0.15	1		09/23/13 17:46	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/23/13 17:46	67-66-3	
Chloromethane	ND	ug/L	1.0	0.080	1		09/23/13 17:46	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.12	1		09/23/13 17:46	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.14	1		09/23/13 17:46	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.59	1		09/23/13 17:46	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/23/13 17:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.17	1		09/23/13 17:46	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		09/23/13 17:46	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.050	1		09/23/13 17:46	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.070	1		09/23/13 17:46	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.060	1		09/23/13 17:46	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-3823P1COLD **Lab ID: 60153626001** Collected: 09/19/13 09:20 Received: 09/20/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		09/23/13 17:46	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.050	1		09/23/13 17:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/23/13 17:46	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.28	1		09/23/13 17:46	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 17:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.080	1		09/23/13 17:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 17:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		09/23/13 17:46	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.17	1		09/23/13 17:46	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.19	1		09/23/13 17:46	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.090	1		09/23/13 17:46	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.14	1		09/23/13 17:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		09/23/13 17:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.18	1		09/23/13 17:46	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.18	1		09/23/13 17:46	87-68-3	
2-Hexanone	ND	ug/L	10.0	1.2	1		09/23/13 17:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		09/23/13 17:46	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.10	1		09/23/13 17:46	99-87-6	
Methylene chloride	ND	ug/L	1.0	0.15	1		09/23/13 17:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.42	1		09/23/13 17:46	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.060	1		09/23/13 17:46	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.50	1		09/23/13 17:46	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 17:46	103-65-1	
Styrene	ND	ug/L	1.0	0.12	1		09/23/13 17:46	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 17:46	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 17:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		09/23/13 17:46	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		09/23/13 17:46	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.12	1		09/23/13 17:46	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.10	1		09/23/13 17:46	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.11	1		09/23/13 17:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.20	1		09/23/13 17:46	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		09/23/13 17:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.34	1		09/23/13 17:46	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.19	1		09/23/13 17:46	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.090	1		09/23/13 17:46	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 17:46	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.13	1		09/23/13 17:46	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		09/23/13 17:46	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		09/23/13 17:46	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	80-120		1		09/23/13 17:46	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		09/23/13 17:46	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		09/23/13 17:46		

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-3823P1COLD **Lab ID: 60153626001** Collected: 09/19/13 09:20 Received: 09/20/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**224**	mg/L	20.0	1.9	1		09/23/13 08:17		
Alkalinity, Total as CaCO3	**224**	mg/L	20.0	1.9	1		09/23/13 08:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**857**	mg/L	5.0	5.0	1		09/23/13 11:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.016	1		09/23/13 12:45	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	ND	mg/L	1.0	0.090	1		09/24/13 09:41	24959-67-9	
Chloride	**5.7**	mg/L	1.0	0.50	1		09/24/13 09:41	16887-00-6	
Sulfate	**474**	mg/L	50.0	8.0	50		09/24/13 12:45	14808-79-8	M1

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-3823P1-HOT **Lab ID: 60153626002** Collected: 09/19/13 10:05 Received: 09/20/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	ND	mg/L	0.50	0.25	1	09/21/13 00:00	09/24/13 08:35		
Surrogates									
p-Terphenyl (S)	83	%	28-127		1	09/21/13 00:00	09/24/13 08:35	92-94-4	
n-Tetracosane (S)	82	%	22-121		1	09/21/13 00:00	09/24/13 08:35	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		09/24/13 22:21		
Surrogates									
4-Bromofluorobenzene (S)	115	%	65-123		1		09/24/13 22:21	460-00-4	
Preservation pH	**1.0**				1		09/24/13 22:21		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	ND	ug/L	100	50.0	1	09/21/13 10:05	09/24/13 10:59	7440-42-8	
Calcium, Dissolved	**103000**	ug/L	100	10.4	1	09/21/13 10:05	09/24/13 10:59	7440-70-2	
Magnesium, Dissolved	**2820**	ug/L	50.0	6.5	1	09/21/13 10:05	09/24/13 14:05	7439-95-4	
Potassium, Dissolved	**1540**	ug/L	500	44.4	1	09/21/13 10:05	09/24/13 14:05	7440-09-7	
Sodium, Dissolved	**178000**	ug/L	500	21.7	1	09/21/13 10:05	09/24/13 14:05	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	1.9	1		09/23/13 18:01	67-64-1	
Benzene	ND	ug/L	1.0	0.060	1		09/23/13 18:01	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:01	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.15	1		09/23/13 18:01	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.19	1		09/23/13 18:01	75-27-4	
Bromoform	ND	ug/L	1.0	0.070	1		09/23/13 18:01	75-25-2	
Bromomethane	ND	ug/L	5.0	0.16	1		09/23/13 18:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.59	1		09/23/13 18:01	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:01	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.050	1		09/23/13 18:01	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.34	1		09/23/13 18:01	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.12	1		09/23/13 18:01	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.18	1		09/23/13 18:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.21	1		09/23/13 18:01	108-90-7	
Chloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:01	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/23/13 18:01	67-66-3	
Chloromethane	ND	ug/L	1.0	0.080	1		09/23/13 18:01	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.12	1		09/23/13 18:01	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.14	1		09/23/13 18:01	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.59	1		09/23/13 18:01	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/23/13 18:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.17	1		09/23/13 18:01	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		09/23/13 18:01	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.050	1		09/23/13 18:01	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.070	1		09/23/13 18:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.060	1		09/23/13 18:01	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-3823P1-HOT **Lab ID: 60153626002** Collected: 09/19/13 10:05 Received: 09/20/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		09/23/13 18:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.050	1		09/23/13 18:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/23/13 18:01	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.28	1		09/23/13 18:01	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 18:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.080	1		09/23/13 18:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 18:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		09/23/13 18:01	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.17	1		09/23/13 18:01	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.19	1		09/23/13 18:01	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.090	1		09/23/13 18:01	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.14	1		09/23/13 18:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		09/23/13 18:01	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.18	1		09/23/13 18:01	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.18	1		09/23/13 18:01	87-68-3	
2-Hexanone	ND	ug/L	10.0	1.2	1		09/23/13 18:01	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		09/23/13 18:01	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.10	1		09/23/13 18:01	99-87-6	
Methylene chloride	ND	ug/L	1.0	0.15	1		09/23/13 18:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.42	1		09/23/13 18:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.060	1		09/23/13 18:01	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.50	1		09/23/13 18:01	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:01	103-65-1	
Styrene	ND	ug/L	1.0	0.12	1		09/23/13 18:01	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:01	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:01	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		09/23/13 18:01	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		09/23/13 18:01	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.12	1		09/23/13 18:01	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.11	1		09/23/13 18:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.20	1		09/23/13 18:01	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		09/23/13 18:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.34	1		09/23/13 18:01	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.19	1		09/23/13 18:01	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.090	1		09/23/13 18:01	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:01	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.13	1		09/23/13 18:01	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		09/23/13 18:01	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		09/23/13 18:01	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	80-120		1		09/23/13 18:01	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		09/23/13 18:01	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		09/23/13 18:01		

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-3823P1-HOT **Lab ID: 60153626002** Collected: 09/19/13 10:05 Received: 09/20/13 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**210**	mg/L	20.0	1.9	1		09/23/13 08:21		
Alkalinity, Total as CaCO3	**210**	mg/L	20.0	1.9	1		09/23/13 08:21		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**843**	mg/L	5.0	5.0	1		09/23/13 11:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.016	1		09/23/13 12:46	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	ND	mg/L	1.0	0.090	1		09/24/13 11:13	24959-67-9	
Chloride	**5.7**	mg/L	1.0	0.50	1		09/24/13 11:13	16887-00-6	
Sulfate	**394**	mg/L	50.0	8.0	50		09/24/13 13:32	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-2992 **Lab ID: 60153626003** Collected: 09/19/13 13:00 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	ND	mg/L	0.50	0.25	1	09/21/13 00:00	09/24/13 08:42		
Surrogates									
p-Terphenyl (S)	108	%	28-127		1	09/21/13 00:00	09/24/13 08:42	92-94-4	
n-Tetracosane (S)	104	%	22-121		1	09/21/13 00:00	09/24/13 08:42	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		09/24/13 22:42		
Surrogates									
4-Bromofluorobenzene (S)	91	%	65-123		1		09/24/13 22:42	460-00-4	
Preservation pH	**1.0**				1		09/24/13 22:42		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	ND	ug/L	100	50.0	1	09/21/13 10:05	09/24/13 11:02	7440-42-8	
Calcium, Dissolved	**246000**	ug/L	100	10.4	1	09/21/13 10:05	09/24/13 11:02	7440-70-2	
Magnesium, Dissolved	**10700**	ug/L	50.0	6.5	1	09/21/13 10:05	09/24/13 14:08	7439-95-4	
Potassium, Dissolved	**2340**	ug/L	500	44.4	1	09/21/13 10:05	09/24/13 14:08	7440-09-7	
Sodium, Dissolved	**189000**	ug/L	500	21.7	1	09/21/13 10:05	09/24/13 14:08	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**12.3**	ug/L	10.0	1.9	1		09/23/13 18:17	67-64-1	
Benzene	ND	ug/L	1.0	0.060	1		09/23/13 18:17	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:17	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.15	1		09/23/13 18:17	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.19	1		09/23/13 18:17	75-27-4	
Bromoform	ND	ug/L	1.0	0.070	1		09/23/13 18:17	75-25-2	
Bromomethane	ND	ug/L	5.0	0.16	1		09/23/13 18:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.59	1		09/23/13 18:17	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:17	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.050	1		09/23/13 18:17	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.34	1		09/23/13 18:17	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.12	1		09/23/13 18:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.18	1		09/23/13 18:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.21	1		09/23/13 18:17	108-90-7	
Chloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:17	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/23/13 18:17	67-66-3	
Chloromethane	ND	ug/L	1.0	0.080	1		09/23/13 18:17	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.12	1		09/23/13 18:17	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.14	1		09/23/13 18:17	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.59	1		09/23/13 18:17	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/23/13 18:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.17	1		09/23/13 18:17	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		09/23/13 18:17	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.050	1		09/23/13 18:17	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.070	1		09/23/13 18:17	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.060	1		09/23/13 18:17	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-2992 **Lab ID: 60153626003** Collected: 09/19/13 13:00 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		09/23/13 18:17	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.050	1		09/23/13 18:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/23/13 18:17	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.28	1		09/23/13 18:17	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 18:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.080	1		09/23/13 18:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 18:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		09/23/13 18:17	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.17	1		09/23/13 18:17	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.19	1		09/23/13 18:17	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.090	1		09/23/13 18:17	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.14	1		09/23/13 18:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		09/23/13 18:17	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.18	1		09/23/13 18:17	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.18	1		09/23/13 18:17	87-68-3	
2-Hexanone	ND	ug/L	10.0	1.2	1		09/23/13 18:17	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		09/23/13 18:17	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.10	1		09/23/13 18:17	99-87-6	
Methylene chloride	ND	ug/L	1.0	0.15	1		09/23/13 18:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.42	1		09/23/13 18:17	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.060	1		09/23/13 18:17	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.50	1		09/23/13 18:17	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:17	103-65-1	
Styrene	ND	ug/L	1.0	0.12	1		09/23/13 18:17	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:17	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		09/23/13 18:17	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		09/23/13 18:17	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.12	1		09/23/13 18:17	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:17	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.11	1		09/23/13 18:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.20	1		09/23/13 18:17	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		09/23/13 18:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.34	1		09/23/13 18:17	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.19	1		09/23/13 18:17	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.090	1		09/23/13 18:17	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:17	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.13	1		09/23/13 18:17	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		09/23/13 18:17	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		09/23/13 18:17	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	80-120		1		09/23/13 18:17	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		09/23/13 18:17	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		09/23/13 18:17		

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-2992 **Lab ID: 60153626003** Collected: 09/19/13 13:00 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**228**	mg/L	20.0	1.9	1		09/23/13 08:25		
Alkalinity, Total as CaCO3	**228**	mg/L	20.0	1.9	1		09/23/13 08:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1440**	mg/L	5.0	5.0	1		09/23/13 11:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.016	1		09/23/13 12:46	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	ND	mg/L	1.0	0.090	1		09/24/13 11:28	24959-67-9	
Chloride	**7.7**	mg/L	1.0	0.50	1		09/24/13 11:28	16887-00-6	
Sulfate	**771**	mg/L	100	16.0	100		09/24/13 14:18	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-3259 **Lab ID: 60153626004** Collected: 09/19/13 14:25 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	ND	mg/L	0.50	0.25	1	09/21/13 00:00	09/24/13 08:49		
Surrogates									
p-Terphenyl (S)	86	%	28-127		1	09/21/13 00:00	09/24/13 08:49	92-94-4	
n-Tetracosane (S)	86	%	22-121		1	09/21/13 00:00	09/24/13 08:49	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		09/24/13 23:04		
Surrogates									
4-Bromofluorobenzene (S)	109	%	65-123		1		09/24/13 23:04	460-00-4	
Preservation pH	**1.0**				1		09/24/13 23:04		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**169**	ug/L	100	50.0	1	09/21/13 10:05	09/24/13 11:05	7440-42-8	
Calcium, Dissolved	**440000**	ug/L	100	10.4	1	09/21/13 10:05	09/24/13 11:05	7440-70-2	
Magnesium, Dissolved	**9570**	ug/L	50.0	6.5	1	09/21/13 10:05	09/24/13 14:11	7439-95-4	
Potassium, Dissolved	**5280**	ug/L	500	44.4	1	09/21/13 10:05	09/24/13 14:11	7440-09-7	
Sodium, Dissolved	**787000**	ug/L	2500	108	5	09/21/13 10:05	09/24/13 15:00	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	1.9	1		09/23/13 18:33	67-64-1	
Benzene	ND	ug/L	1.0	0.060	1		09/23/13 18:33	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:33	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.15	1		09/23/13 18:33	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.19	1		09/23/13 18:33	75-27-4	
Bromoform	ND	ug/L	1.0	0.070	1		09/23/13 18:33	75-25-2	
Bromomethane	ND	ug/L	5.0	0.16	1		09/23/13 18:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.59	1		09/23/13 18:33	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:33	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.050	1		09/23/13 18:33	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.34	1		09/23/13 18:33	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.12	1		09/23/13 18:33	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.18	1		09/23/13 18:33	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.21	1		09/23/13 18:33	108-90-7	
Chloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:33	75-00-3	
Chloroform	**2.3**	ug/L	1.0	0.14	1		09/23/13 18:33	67-66-3	
Chloromethane	ND	ug/L	1.0	0.080	1		09/23/13 18:33	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.12	1		09/23/13 18:33	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.14	1		09/23/13 18:33	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.59	1		09/23/13 18:33	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/23/13 18:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.17	1		09/23/13 18:33	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		09/23/13 18:33	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.050	1		09/23/13 18:33	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.070	1		09/23/13 18:33	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.060	1		09/23/13 18:33	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-3259 **Lab ID: 60153626004** Collected: 09/19/13 14:25 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		09/23/13 18:33	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.050	1		09/23/13 18:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/23/13 18:33	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.28	1		09/23/13 18:33	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 18:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.080	1		09/23/13 18:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 18:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		09/23/13 18:33	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.17	1		09/23/13 18:33	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.19	1		09/23/13 18:33	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.090	1		09/23/13 18:33	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.14	1		09/23/13 18:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		09/23/13 18:33	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.18	1		09/23/13 18:33	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.18	1		09/23/13 18:33	87-68-3	
2-Hexanone	ND	ug/L	10.0	1.2	1		09/23/13 18:33	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		09/23/13 18:33	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.10	1		09/23/13 18:33	99-87-6	
Methylene chloride	ND	ug/L	1.0	0.15	1		09/23/13 18:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.42	1		09/23/13 18:33	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.060	1		09/23/13 18:33	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.50	1		09/23/13 18:33	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:33	103-65-1	
Styrene	ND	ug/L	1.0	0.12	1		09/23/13 18:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:33	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		09/23/13 18:33	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		09/23/13 18:33	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.12	1		09/23/13 18:33	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:33	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.11	1		09/23/13 18:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.20	1		09/23/13 18:33	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		09/23/13 18:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.34	1		09/23/13 18:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.19	1		09/23/13 18:33	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.090	1		09/23/13 18:33	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:33	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.13	1		09/23/13 18:33	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		09/23/13 18:33	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		09/23/13 18:33	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	80-120		1		09/23/13 18:33	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		09/23/13 18:33	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		09/23/13 18:33		

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-3259 **Lab ID: 60153626004** Collected: 09/19/13 14:25 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**172**	mg/L	20.0	1.9	1		09/23/13 08:30		
Alkalinity, Total as CaCO3	**172**	mg/L	20.0	1.9	1		09/23/13 08:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**4300**	mg/L	5.0	5.0	1		09/23/13 11:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.016	1		09/23/13 12:47	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	ND	mg/L	1.0	0.090	1		09/24/13 11:44	24959-67-9	
Chloride	**5.8**	mg/L	1.0	0.50	1		09/24/13 11:44	16887-00-6	
Sulfate	**2290**	mg/L	500	80.0	500		09/24/13 14:33	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-DUP **Lab ID: 60153626005** Collected: 09/19/13 14:30 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH-DRO	ND	mg/L	0.50	0.25	1	09/21/13 00:00	09/24/13 08:56		
Surrogates									
p-Terphenyl (S)	85	%	28-127		1	09/21/13 00:00	09/24/13 08:56	92-94-4	
n-Tetracosane (S)	85	%	22-121		1	09/21/13 00:00	09/24/13 08:56	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B								
TPH-GRO	ND	mg/L	0.50		1		09/24/13 23:25		
Surrogates									
4-Bromofluorobenzene (S)	103	%	65-123		1		09/24/13 23:25	460-00-4	
Preservation pH	**1.0**				1		09/24/13 23:25		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron, Dissolved	**170**	ug/L	100	50.0	1	09/21/13 10:05	09/24/13 11:09	7440-42-8	
Calcium, Dissolved	**436000**	ug/L	100	10.4	1	09/21/13 10:05	09/24/13 11:09	7440-70-2	
Magnesium, Dissolved	**9890**	ug/L	50.0	6.5	1	09/21/13 10:05	09/24/13 14:15	7439-95-4	
Potassium, Dissolved	**5620**	ug/L	500	44.4	1	09/21/13 10:05	09/24/13 14:15	7440-09-7	
Sodium, Dissolved	**692000**	ug/L	2500	108	5	09/21/13 10:05	09/24/13 15:03	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	1.9	1		09/23/13 18:49	67-64-1	
Benzene	ND	ug/L	1.0	0.060	1		09/23/13 18:49	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:49	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.15	1		09/23/13 18:49	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.19	1		09/23/13 18:49	75-27-4	
Bromoform	ND	ug/L	1.0	0.070	1		09/23/13 18:49	75-25-2	
Bromomethane	ND	ug/L	5.0	0.16	1		09/23/13 18:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.59	1		09/23/13 18:49	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:49	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.050	1		09/23/13 18:49	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.34	1		09/23/13 18:49	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.12	1		09/23/13 18:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.18	1		09/23/13 18:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.21	1		09/23/13 18:49	108-90-7	
Chloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:49	75-00-3	
Chloroform	**2.4**	ug/L	1.0	0.14	1		09/23/13 18:49	67-66-3	
Chloromethane	ND	ug/L	1.0	0.080	1		09/23/13 18:49	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.12	1		09/23/13 18:49	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.14	1		09/23/13 18:49	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.59	1		09/23/13 18:49	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/23/13 18:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.17	1		09/23/13 18:49	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		09/23/13 18:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.050	1		09/23/13 18:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.070	1		09/23/13 18:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.060	1		09/23/13 18:49	106-46-7	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-DUP **Lab ID: 60153626005** Collected: 09/19/13 14:30 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		09/23/13 18:49	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.050	1		09/23/13 18:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/23/13 18:49	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.28	1		09/23/13 18:49	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 18:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.080	1		09/23/13 18:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 18:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		09/23/13 18:49	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.17	1		09/23/13 18:49	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.19	1		09/23/13 18:49	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.090	1		09/23/13 18:49	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.14	1		09/23/13 18:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		09/23/13 18:49	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.18	1		09/23/13 18:49	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.18	1		09/23/13 18:49	87-68-3	
2-Hexanone	ND	ug/L	10.0	1.2	1		09/23/13 18:49	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		09/23/13 18:49	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.10	1		09/23/13 18:49	99-87-6	
Methylene chloride	ND	ug/L	1.0	0.15	1		09/23/13 18:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.42	1		09/23/13 18:49	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.060	1		09/23/13 18:49	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.50	1		09/23/13 18:49	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:49	103-65-1	
Styrene	ND	ug/L	1.0	0.12	1		09/23/13 18:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 18:49	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		09/23/13 18:49	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		09/23/13 18:49	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.12	1		09/23/13 18:49	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.11	1		09/23/13 18:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.20	1		09/23/13 18:49	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		09/23/13 18:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.34	1		09/23/13 18:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.19	1		09/23/13 18:49	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.090	1		09/23/13 18:49	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 18:49	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.13	1		09/23/13 18:49	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		09/23/13 18:49	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		09/23/13 18:49	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	80-120		1		09/23/13 18:49	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		09/23/13 18:49	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		09/23/13 18:49		

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-DUP **Lab ID: 60153626005** Collected: 09/19/13 14:30 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**175**	mg/L	20.0	1.9	1		09/23/13 08:42		
Alkalinity, Total as CaCO3	**175**	mg/L	20.0	1.9	1		09/23/13 08:42		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**4400**	mg/L	5.0	5.0	1		09/23/13 11:31		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.016	1		09/23/13 12:48	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Bromide	ND	mg/L	1.0	0.090	1		09/24/13 11:59	24959-67-9	
Chloride	**5.7**	mg/L	1.0	0.50	1		09/24/13 11:59	16887-00-6	
Sulfate	**2250**	mg/L	500	80.0	500		09/24/13 14:49	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-001 **Lab ID: 60153626006** Collected: 09/19/13 15:30 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	1.9	1		09/23/13 16:11	67-64-1	
Benzene	ND	ug/L	1.0	0.060	1		09/23/13 16:11	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.10	1		09/23/13 16:11	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.15	1		09/23/13 16:11	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.19	1		09/23/13 16:11	75-27-4	
Bromoform	ND	ug/L	1.0	0.070	1		09/23/13 16:11	75-25-2	
Bromomethane	ND	ug/L	5.0	0.16	1		09/23/13 16:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.59	1		09/23/13 16:11	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 16:11	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.050	1		09/23/13 16:11	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.34	1		09/23/13 16:11	98-06-6	
Carbon disulfide	ND	ug/L	5.0	0.12	1		09/23/13 16:11	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.18	1		09/23/13 16:11	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.21	1		09/23/13 16:11	108-90-7	
Chloroethane	ND	ug/L	1.0	0.15	1		09/23/13 16:11	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/23/13 16:11	67-66-3	
Chloromethane	ND	ug/L	1.0	0.080	1		09/23/13 16:11	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.12	1		09/23/13 16:11	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.14	1		09/23/13 16:11	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	0.59	1		09/23/13 16:11	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/23/13 16:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.17	1		09/23/13 16:11	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.18	1		09/23/13 16:11	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.050	1		09/23/13 16:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.070	1		09/23/13 16:11	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.060	1		09/23/13 16:11	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		09/23/13 16:11	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.050	1		09/23/13 16:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/23/13 16:11	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	0.28	1		09/23/13 16:11	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 16:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.080	1		09/23/13 16:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.20	1		09/23/13 16:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.16	1		09/23/13 16:11	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.17	1		09/23/13 16:11	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.19	1		09/23/13 16:11	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.090	1		09/23/13 16:11	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.14	1		09/23/13 16:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		09/23/13 16:11	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.18	1		09/23/13 16:11	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.18	1		09/23/13 16:11	87-68-3	
2-Hexanone	ND	ug/L	10.0	1.2	1		09/23/13 16:11	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		09/23/13 16:11	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.10	1		09/23/13 16:11	99-87-6	
Methylene chloride	ND	ug/L	1.0	0.15	1		09/23/13 16:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.42	1		09/23/13 16:11	108-10-1	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Sample: GW-074922-091913-CM-001 **Lab ID: 60153626006** Collected: 09/19/13 15:30 Received: 09/20/13 13:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Methyl-tert-butyl ether	ND	ug/L	1.0	0.060	1		09/23/13 16:11	1634-04-4	
Naphthalene	ND	ug/L	10.0	0.50	1		09/23/13 16:11	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 16:11	103-65-1	
Styrene	ND	ug/L	1.0	0.12	1		09/23/13 16:11	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 16:11	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.15	1		09/23/13 16:11	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.10	1		09/23/13 16:11	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		09/23/13 16:11	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.12	1		09/23/13 16:11	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.10	1		09/23/13 16:11	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.11	1		09/23/13 16:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.20	1		09/23/13 16:11	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		09/23/13 16:11	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.34	1		09/23/13 16:11	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	0.19	1		09/23/13 16:11	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.090	1		09/23/13 16:11	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		09/23/13 16:11	108-67-8	
Vinyl chloride	ND	ug/L	1.0	0.13	1		09/23/13 16:11	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		09/23/13 16:11	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		09/23/13 16:11	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	80-120		1		09/23/13 16:11	17060-07-0	
Toluene-d8 (S)	103	%	80-120		1		09/23/13 16:11	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		09/23/13 16:11		

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

QC Batch: GCV/4492 Analysis Method: EPA 5030B/8015B
QC Batch Method: EPA 5030B/8015B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

METHOD BLANK: 1258843 Matrix: Water
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	09/24/13 19:07	
4-Bromofluorobenzene (S)	%	102	65-123	09/24/13 19:07	

LABORATORY CONTROL SAMPLE: 1258844

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	1.0	102	67-134	
4-Bromofluorobenzene (S)	%			103	65-123	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

QC Batch: MPRP/24369 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

METHOD BLANK: 1257907 Matrix: Water
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron, Dissolved	ug/L	ND	100	09/24/13 10:50	
Calcium, Dissolved	ug/L	ND	100	09/24/13 10:50	
Magnesium, Dissolved	ug/L	ND	50.0	09/24/13 13:56	
Potassium, Dissolved	ug/L	ND	500	09/24/13 13:56	
Sodium, Dissolved	ug/L	ND	500	09/24/13 13:56	

LABORATORY CONTROL SAMPLE: 1257908

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron, Dissolved	ug/L	1000	1030	103	80-120	
Calcium, Dissolved	ug/L	10000	10800	108	80-120	
Magnesium, Dissolved	ug/L	10000	10400	104	80-120	
Potassium, Dissolved	ug/L	10000	10300	103	80-120	
Sodium, Dissolved	ug/L	10000	10400	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1257909 1257910

Parameter	Units	60153253003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron, Dissolved	ug/L	236	1000	1000	1280	1200	104	97	75-125	6	20	
Calcium, Dissolved	ug/L	476000	10000	10000	480000	447000	40	-281	75-125	7	20	M1
Magnesium, Dissolved	ug/L	34200	10000	10000	41900	41200	77	70	75-125	2	20	1e,M1
Potassium, Dissolved	ug/L	2640	10000	10000	13200	12700	106	101	75-125	4	20	
Sodium, Dissolved	ug/L	299000	10000	10000	323000	299000	238	-5	75-125	8	20	M1

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

QC Batch: MSV/56496 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005, 60153626006

METHOD BLANK: 1258627 Matrix: Water
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005, 60153626006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	09/23/13 15:55	
1,1,1-Trichloroethane	ug/L	ND	1.0	09/23/13 15:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	09/23/13 15:55	
1,1,2-Trichloroethane	ug/L	ND	1.0	09/23/13 15:55	
1,1-Dichloroethane	ug/L	ND	1.0	09/23/13 15:55	
1,1-Dichloroethene	ug/L	ND	1.0	09/23/13 15:55	
1,1-Dichloropropene	ug/L	ND	1.0	09/23/13 15:55	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	09/23/13 15:55	
1,2,3-Trichloropropane	ug/L	ND	2.5	09/23/13 15:55	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	09/23/13 15:55	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	09/23/13 15:55	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	09/23/13 15:55	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	09/23/13 15:55	
1,2-Dichlorobenzene	ug/L	ND	1.0	09/23/13 15:55	
1,2-Dichloroethane	ug/L	ND	1.0	09/23/13 15:55	
1,2-Dichloroethene (Total)	ug/L	ND	1.0	09/23/13 15:55	
1,2-Dichloropropane	ug/L	ND	1.0	09/23/13 15:55	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	09/23/13 15:55	
1,3-Dichlorobenzene	ug/L	ND	1.0	09/23/13 15:55	
1,3-Dichloropropane	ug/L	ND	1.0	09/23/13 15:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/23/13 15:55	
2,2-Dichloropropane	ug/L	ND	1.0	09/23/13 15:55	
2-Butanone (MEK)	ug/L	ND	10.0	09/23/13 15:55	
2-Chlorotoluene	ug/L	ND	1.0	09/23/13 15:55	
2-Hexanone	ug/L	ND	10.0	09/23/13 15:55	
4-Chlorotoluene	ug/L	ND	1.0	09/23/13 15:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	09/23/13 15:55	
Acetone	ug/L	ND	10.0	09/23/13 15:55	
Benzene	ug/L	ND	1.0	09/23/13 15:55	
Bromobenzene	ug/L	ND	1.0	09/23/13 15:55	
Bromochloromethane	ug/L	ND	1.0	09/23/13 15:55	
Bromodichloromethane	ug/L	ND	1.0	09/23/13 15:55	
Bromoform	ug/L	ND	1.0	09/23/13 15:55	
Bromomethane	ug/L	ND	5.0	09/23/13 15:55	
Carbon disulfide	ug/L	ND	5.0	09/23/13 15:55	
Carbon tetrachloride	ug/L	ND	1.0	09/23/13 15:55	
Chlorobenzene	ug/L	ND	1.0	09/23/13 15:55	
Chloroethane	ug/L	ND	1.0	09/23/13 15:55	
Chloroform	ug/L	ND	1.0	09/23/13 15:55	
Chloromethane	ug/L	ND	1.0	09/23/13 15:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	09/23/13 15:55	
cis-1,3-Dichloropropene	ug/L	ND	1.0	09/23/13 15:55	
Dibromochloromethane	ug/L	ND	1.0	09/23/13 15:55	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

METHOD BLANK: 1258627 Matrix: Water

Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005, 60153626006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	09/23/13 15:55	
Dichlorodifluoromethane	ug/L	ND	1.0	09/23/13 15:55	
Ethylbenzene	ug/L	ND	1.0	09/23/13 15:55	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	09/23/13 15:55	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	09/23/13 15:55	
Methyl-tert-butyl ether	ug/L	ND	1.0	09/23/13 15:55	
Methylene chloride	ug/L	ND	1.0	09/23/13 15:55	
n-Butylbenzene	ug/L	ND	1.0	09/23/13 15:55	
n-Propylbenzene	ug/L	ND	1.0	09/23/13 15:55	
Naphthalene	ug/L	ND	10.0	09/23/13 15:55	
p-Isopropyltoluene	ug/L	ND	1.0	09/23/13 15:55	
sec-Butylbenzene	ug/L	ND	1.0	09/23/13 15:55	
Styrene	ug/L	ND	1.0	09/23/13 15:55	
tert-Butylbenzene	ug/L	ND	1.0	09/23/13 15:55	
Tetrachloroethene	ug/L	ND	1.0	09/23/13 15:55	
Toluene	ug/L	ND	1.0	09/23/13 15:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	09/23/13 15:55	
trans-1,3-Dichloropropene	ug/L	ND	1.0	09/23/13 15:55	
Trichloroethene	ug/L	ND	1.0	09/23/13 15:55	
Trichlorofluoromethane	ug/L	ND	1.0	09/23/13 15:55	
Vinyl chloride	ug/L	ND	1.0	09/23/13 15:55	
Xylene (Total)	ug/L	ND	3.0	09/23/13 15:55	
1,2-Dichloroethane-d4 (S)	%	98	80-120	09/23/13 15:55	
4-Bromofluorobenzene (S)	%	102	80-120	09/23/13 15:55	
Toluene-d8 (S)	%	101	80-120	09/23/13 15:55	

LABORATORY CONTROL SAMPLE: 1258628

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	22.7	114	79-121	
1,1,1-Trichloroethane	ug/L	20	21.2	106	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	19.5	97	73-120	
1,1,2-Trichloroethane	ug/L	20	19.2	96	76-120	
1,1-Dichloroethane	ug/L	20	19.0	95	73-120	
1,1-Dichloroethene	ug/L	20	20.3	102	70-127	
1,1-Dichloropropene	ug/L	20	21.2	106	79-124	
1,2,3-Trichlorobenzene	ug/L	20	20.8	104	68-130	
1,2,3-Trichloropropane	ug/L	20	18.6	93	72-124	
1,2,4-Trichlorobenzene	ug/L	20	20.6	103	73-125	
1,2,4-Trimethylbenzene	ug/L	20	21.4	107	76-120	
1,2-Dibromo-3-chloropropane	ug/L	20	18.7	93	68-126	
1,2-Dibromoethane (EDB)	ug/L	20	20.4	102	79-121	
1,2-Dichlorobenzene	ug/L	20	21.3	106	79-120	
1,2-Dichloroethane	ug/L	20	20.6	103	72-122	
1,2-Dichloroethene (Total)	ug/L	40	42.1	105	77-120	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

LABORATORY CONTROL SAMPLE: 1258628

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloropropane	ug/L	20	20.7	103	77-120	
1,3,5-Trimethylbenzene	ug/L	20	21.0	105	75-120	
1,3-Dichlorobenzene	ug/L	20	21.2	106	80-120	
1,3-Dichloropropane	ug/L	20	19.9	100	76-120	
1,4-Dichlorobenzene	ug/L	20	21.0	105	80-120	
2,2-Dichloropropane	ug/L	20	20.5	102	52-135	
2-Butanone (MEK)	ug/L	100	94.2	94	69-124	
2-Chlorotoluene	ug/L	20	21.4	107	78-120	
2-Hexanone	ug/L	100	91.5	92	70-125	
4-Chlorotoluene	ug/L	20	21.3	106	80-120	
4-Methyl-2-pentanone (MIBK)	ug/L	100	101	101	72-123	
Acetone	ug/L	100	86.1	86	60-126	
Benzene	ug/L	20	20.2	101	73-122	
Bromobenzene	ug/L	20	21.2	106	79-120	
Bromochloromethane	ug/L	20	21.7	108	76-125	
Bromodichloromethane	ug/L	20	20.5	102	73-120	
Bromoform	ug/L	20	21.9	110	74-120	
Bromomethane	ug/L	20	15.7	78	40-146	
Carbon disulfide	ug/L	20	17.8	89	62-125	
Carbon tetrachloride	ug/L	20	22.0	110	73-125	
Chlorobenzene	ug/L	20	21.4	107	80-120	
Chloroethane	ug/L	20	18.8	94	56-159	
Chloroform	ug/L	20	21.0	105	76-120	
Chloromethane	ug/L	20	13.3	66	40-148	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	69-120	
cis-1,3-Dichloropropene	ug/L	20	20.0	100	76-120	
Dibromochloromethane	ug/L	20	22.9	115	79-121	
Dibromomethane	ug/L	20	20.6	103	77-120	
Dichlorodifluoromethane	ug/L	20	12.3	62	40-141	
Ethylbenzene	ug/L	20	21.9	109	76-123	
Hexachloro-1,3-butadiene	ug/L	20	20.7	104	69-125	
Isopropylbenzene (Cumene)	ug/L	20	23.6	118	80-130	
Methyl-tert-butyl ether	ug/L	20	18.9	95	67-128	
Methylene chloride	ug/L	20	21.0	105	71-123	
n-Butylbenzene	ug/L	20	20.7	104	77-124	
n-Propylbenzene	ug/L	20	21.9	110	78-120	
Naphthalene	ug/L	20	19.8	99	64-127	
p-Isopropyltoluene	ug/L	20	21.9	109	78-120	
sec-Butylbenzene	ug/L	20	21.6	108	77-122	
Styrene	ug/L	20	20.9	104	79-120	
tert-Butylbenzene	ug/L	20	24.2	121	76-123	
Tetrachloroethene	ug/L	20	21.7	108	79-122	
Toluene	ug/L	20	20.6	103	76-122	
trans-1,2-Dichloroethene	ug/L	20	21.5	108	78-126	
trans-1,3-Dichloropropene	ug/L	20	21.9	109	79-124	
Trichloroethene	ug/L	20	19.8	99	76-120	
Trichlorofluoromethane	ug/L	20	18.8	94	69-133	
Vinyl chloride	ug/L	20	15.5	77	57-140	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

LABORATORY CONTROL SAMPLE: 1258628

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/L	60	64.6	108	76-122	
1,2-Dichloroethane-d4 (S)	%			95	80-120	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			100	80-120	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

QC Batch: OEXT/40588 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

METHOD BLANK: 1257859 Matrix: Water
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	0.50	09/24/13 08:15	
n-Tetracosane (S)	%	78	22-121	09/24/13 08:15	
p-Terphenyl (S)	%	83	28-127	09/24/13 08:15	

LABORATORY CONTROL SAMPLE: 1257860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	12.5	10.2	82	39-120	
n-Tetracosane (S)	%			85	22-121	
p-Terphenyl (S)	%			85	28-127	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

QC Batch: WET/43547 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

METHOD BLANK: 1258234 Matrix: Water
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	09/23/13 07:58	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	09/23/13 07:58	

LABORATORY CONTROL SAMPLE: 1258235

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	486	97	90-110	

SAMPLE DUPLICATE: 1258238

Parameter	Units	60153048003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	167	167	0	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	167	167	0	10	

SAMPLE DUPLICATE: 1258239

Parameter	Units	60152902001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	1350	1350	0	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	1350	1350	0	10	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

QC Batch: WET/43552 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

METHOD BLANK: 1258309 Matrix: Water
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	09/23/13 11:28	

LABORATORY CONTROL SAMPLE: 1258310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	977	98	80-120	

SAMPLE DUPLICATE: 1258311

Parameter	Units	60153626001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	857	879	3	17	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

QC Batch: WET/43553 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

METHOD BLANK: 1258424 Matrix: Water
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	09/23/13 12:45	

LABORATORY CONTROL SAMPLE: 1258425

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.5	0.53	105	80-120	

MATRIX SPIKE SAMPLE: 1258426

Parameter	Units	60153626001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.5	0.52	104	75-125	

SAMPLE DUPLICATE: 1258428

Parameter	Units	60153626002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

QC Batch: WETA/26305 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

METHOD BLANK: 1258510 Matrix: Water
Associated Lab Samples: 60153626001, 60153626002, 60153626003, 60153626004, 60153626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	09/24/13 09:10	
Chloride	mg/L	ND	1.0	09/24/13 09:10	
Sulfate	mg/L	ND	1.0	09/24/13 09:10	

LABORATORY CONTROL SAMPLE: 1258511

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	5.0	101	90-110	
Chloride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1258512 1258513

Parameter	Units	60153626001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Bromide	mg/L	ND	5	5	5.1	5.2	102	105	80-120	3	15	
Chloride	mg/L	5.7	5	5	10.4	10.6	95	98	80-120	2	15	
Sulfate	mg/L	474	250	250	668	637	77	65	80-120	5	15	M1

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QUALIFIERS

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: OEXT/40588

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/56496

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: GCV/4492

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1e Post Digestion Spike Performed - 88.6% Recovery

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60153626001	GW-074922-091913-CM-3823P1COLD	EPA 3510C	OEXT/40588	EPA 8015B	GCSV/15472
60153626002	GW-074922-091913-CM-3823P1-HOT	EPA 3510C	OEXT/40588	EPA 8015B	GCSV/15472
60153626003	GW-074922-091913-CM-2992	EPA 3510C	OEXT/40588	EPA 8015B	GCSV/15472
60153626004	GW-074922-091913-CM-3259	EPA 3510C	OEXT/40588	EPA 8015B	GCSV/15472
60153626005	GW-074922-091913-CM-DUP	EPA 3510C	OEXT/40588	EPA 8015B	GCSV/15472
60153626001	GW-074922-091913-CM-3823P1COLD	EPA 5030B/8015B	GCV/4492		
60153626002	GW-074922-091913-CM-3823P1-HOT	EPA 5030B/8015B	GCV/4492		
60153626003	GW-074922-091913-CM-2992	EPA 5030B/8015B	GCV/4492		
60153626004	GW-074922-091913-CM-3259	EPA 5030B/8015B	GCV/4492		
60153626005	GW-074922-091913-CM-DUP	EPA 5030B/8015B	GCV/4492		
60153626001	GW-074922-091913-CM-3823P1COLD	EPA 3010	MPRP/24369	EPA 6010	ICP/19003
60153626002	GW-074922-091913-CM-3823P1-HOT	EPA 3010	MPRP/24369	EPA 6010	ICP/19003
60153626003	GW-074922-091913-CM-2992	EPA 3010	MPRP/24369	EPA 6010	ICP/19003
60153626004	GW-074922-091913-CM-3259	EPA 3010	MPRP/24369	EPA 6010	ICP/19003
60153626005	GW-074922-091913-CM-DUP	EPA 3010	MPRP/24369	EPA 6010	ICP/19003
60153626001	GW-074922-091913-CM-3823P1COLD	EPA 5030B/8260	MSV/56496		
60153626002	GW-074922-091913-CM-3823P1-HOT	EPA 5030B/8260	MSV/56496		
60153626003	GW-074922-091913-CM-2992	EPA 5030B/8260	MSV/56496		
60153626004	GW-074922-091913-CM-3259	EPA 5030B/8260	MSV/56496		
60153626005	GW-074922-091913-CM-DUP	EPA 5030B/8260	MSV/56496		
60153626006	GW-074922-091913-CM-001	EPA 5030B/8260	MSV/56496		
60153626001	GW-074922-091913-CM-3823P1COLD	SM 2320B	WET/43547		
60153626002	GW-074922-091913-CM-3823P1-HOT	SM 2320B	WET/43547		
60153626003	GW-074922-091913-CM-2992	SM 2320B	WET/43547		
60153626004	GW-074922-091913-CM-3259	SM 2320B	WET/43547		
60153626005	GW-074922-091913-CM-DUP	SM 2320B	WET/43547		
60153626001	GW-074922-091913-CM-3823P1COLD	SM 2540C	WET/43552		
60153626002	GW-074922-091913-CM-3823P1-HOT	SM 2540C	WET/43552		
60153626003	GW-074922-091913-CM-2992	SM 2540C	WET/43552		
60153626004	GW-074922-091913-CM-3259	SM 2540C	WET/43552		
60153626005	GW-074922-091913-CM-DUP	SM 2540C	WET/43552		
60153626001	GW-074922-091913-CM-3823P1COLD	SM 4500-S-2 D	WET/43553		
60153626002	GW-074922-091913-CM-3823P1-HOT	SM 4500-S-2 D	WET/43553		
60153626003	GW-074922-091913-CM-2992	SM 4500-S-2 D	WET/43553		
60153626004	GW-074922-091913-CM-3259	SM 4500-S-2 D	WET/43553		
60153626005	GW-074922-091913-CM-DUP	SM 4500-S-2 D	WET/43553		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60153626

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60153626001	GW-074922-091913-CM-3823P1COLD	EPA 300.0	WETA/26305		
60153626002	GW-074922-091913-CM-3823P1-HOT	EPA 300.0	WETA/26305		
60153626003	GW-074922-091913-CM-2992	EPA 300.0	WETA/26305		
60153626004	GW-074922-091913-CM-3259	EPA 300.0	WETA/26305		
60153626005	GW-074922-091913-CM-DUP	EPA 300.0	WETA/26305		

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ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	382624	Job #:	22926	IS-63575
Sample Name/Number:	GW-074922-091913-CM-3823PI-Cold			
Company:	Pace Analytical			
Date Sampled:	9/19/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 30 / SJ 32-8			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	9/20/2013	Date Reported:	9/24/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.42			
Oxygen	16.50			
Nitrogen	76.58			
Carbon Dioxide	5.50			
Methane	0.0037			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-111.9	-14.83

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.78
Concentration of methane in water = 0.0013 cc/L ; 0.00088 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	382625	Job #:	22926	IS-63575
Sample Name/Number:	GW-074922-091913-CM-3823PI-Hot			
Company:	Pace Analytical			
Date Sampled:	9/19/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 30 / SJ 32-8			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	9/20/2013	Date Reported:	9/24/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.33			
Oxygen	16.40			
Nitrogen	76.18			
Carbon Dioxide	6.08			
Methane	0.0081			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-113.3	-14.91

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.75
Concentration of methane in water = 0.0031 cc/L ; 0.0020 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	382626	Job #:	22926	IS-63575
Sample Name/Number:	GW-074922-091913-CM-2992			
Company:	Pace Analytical			
Date Sampled:	9/19/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 30 / SJ 32-8			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	9/20/2013	Date Reported:	9/24/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.21			
Oxygen	14.57			
Nitrogen	76.93			
Carbon Dioxide	6.70			
Methane	0.584			
Ethane	0.0069			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-104.7	-13.85

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.70
Concentration of methane in water = 0.30 cc/L ; 0.20 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	382627	Job #:	22926	IS-63575
Sample Name/Number:	GW-074922-091913-CM-3259			
Company:	Pace Analytical			
Date Sampled:	9/19/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 30 / SJ 32-8			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	9/20/2013	Date Reported:	9/24/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.40			
Oxygen	12.41			
Nitrogen	77.52			
Carbon Dioxide	4.50			
Methane	4.16			
Ethane	0.0051			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-114.1	-14.77

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.74
Concentration of methane in water = 1.4 cc/L ; 0.96 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	382628	Job #:	22926	IS-63575
Sample Name/Number:	GW-074922-091913-CM-DUP			
Company:	Pace Analytical			
Date Sampled:	9/19/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 30 / SJ 32-8			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	9/20/2013	Date Reported:	9/24/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.36			
Oxygen	13.44			
Nitrogen	76.75			
Carbon Dioxide	4.58			
Methane	3.87			
Ethane	0.0049			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-113.5	-14.79

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.75
Concentration of methane in water = 1.4 cc/L ; 0.97 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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REVISED

October 24, 2013

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory between September 28, 2013 and October 04, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Angela Bown, COP Conestoga-Rovers & Associa
Jeff Walker, COP Conestoga-Rovers & Associa

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60154273001	GW-074922-092613-CM-MW-1-Z1	Water	09/26/13 11:45	09/28/13 09:00
60154273002	GW-074922-092613-CM-MW-1-Z2	Water	09/26/13 15:25	09/28/13 09:00
60154273003	GW-074922-092613-CM-MW-1-DUP	Water	09/26/13 12:05	09/28/13 09:00
60154781001	GW-074922-100213-CM-MW-1-Z3	Water	10/02/13 13:30	10/04/13 08:45

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SAMPLE ANALYTE COUNT

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60154273001	GW-074922-092613-CM-MW-1-Z1	EPA 8015B	JDH	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	NDJ	5
		EPA 5030B/8260	PRG	69
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60154273002	GW-074922-092613-CM-MW-1-Z2	EPA 8015B	JDH	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	NDJ	5
		EPA 5030B/8260	PRG	69
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60154273003	GW-074922-092613-CM-MW-1-DUP	EPA 8015B	JDH	3
		EPA 5030B/8015B	SDR	3
		EPA 6010	NDJ	5
		EPA 5030B/8260	PRG	69
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60154781001	GW-074922-100213-CM-MW-1-Z3	EPA 8015B	JDE	3
		EPA 5030B/8015B	SDR	2
		EPA 6010	TJT	5
		EPA 5030B/8260	PRG	69
		SM 2320B	JMC1	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	4

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Method: EPA 8015B
Description: 8015B Diesel Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 24, 2013

General Information:
4 samples were analyzed for EPA 8015B. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C 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.

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, where applicable, 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: GCSV/15535

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

QC Batch: GCSV/15580

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Method: **EPA 5030B/8015B**
Description: Gasoline Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 24, 2013

General Information:
4 samples were analyzed for EPA 5030B/8015B. 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, where applicable, 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: GCV/4513

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Method: EPA 6010
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 24, 2013

General Information:
4 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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: MPRP/24558

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60154273001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1265506)
  - Sodium, Dissolved
- MSD (Lab ID: 1265507)
  - Calcium, Dissolved
  - Sodium, Dissolved

QC Batch: MPRP/24679

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60154781001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1269704)
  - Calcium, Dissolved
  - Sodium, Dissolved
- MSD (Lab ID: 1269705)
  - Calcium, Dissolved
  - Sodium, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 24, 2013

General Information:
4 samples were analyzed for EPA 5030B/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, where applicable, 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/56777

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

QC Batch: MSV/56842

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 24, 2013

General Information:
4 samples were analyzed for SM 2320B. 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.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- GW-074922-092613-CM-MW-1-DUP (Lab ID: 60154273003)
- GW-074922-092613-CM-MW-1-Z1 (Lab ID: 60154273001)
- GW-074922-092613-CM-MW-1-Z2 (Lab ID: 60154273002)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 24, 2013

General Information:
4 samples were analyzed for SM 2540C. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 24, 2013

General Information:
4 samples were analyzed for SM 4500-S-2 D. 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.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- GW-074922-100213-CM-MW-1-Z3 (Lab ID: 60154781001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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: WET/43785

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60154109002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 1264860)
  - Sulfide, Total

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: October 24, 2013

General Information:
4 samples were analyzed for EPA 300.0. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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: WETA/26546

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60154045001,60154111001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1267858)
  - Sulfate

QC Batch: WETA/26660

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60154700001,60154700002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1271436)
  - Chloride
- MSD (Lab ID: 1271437)
  - Chloride

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-092613-CM-MW-1-Z1 **Lab ID: 60154273001** Collected: 09/26/13 11:45 Received: 09/28/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	ND	mg/L	0.50	1	09/30/13 00:00	10/01/13 17:03		
Surrogates								
p-Terphenyl (S)	77	%	28-127	1	09/30/13 00:00	10/01/13 17:03	92-94-4	
n-Tetracosane (S)	81	%	22-121	1	09/30/13 00:00	10/01/13 17:03	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		10/04/13 18:42		
Surrogates								
4-Bromofluorobenzene (S)	100	%	65-123	1		10/04/13 18:42	460-00-4	
Preservation pH	**1.0**			1		10/04/13 18:42		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron, Dissolved	**289**	ug/L	100	1	10/03/13 17:10	10/04/13 12:37	7440-42-8	
Calcium, Dissolved	**460000**	ug/L	100	1	10/03/13 17:10	10/04/13 12:37	7440-70-2	M1
Magnesium, Dissolved	**11700**	ug/L	50.0	1	10/03/13 17:10	10/04/13 12:37	7439-95-4	
Potassium, Dissolved	**14100**	ug/L	500	1	10/03/13 17:10	10/04/13 12:37	7440-09-7	
Sodium, Dissolved	**906000**	ug/L	1000	2	10/03/13 17:10	10/04/13 13:25	7440-23-5	M1
8260 MSV	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	10.0	1		10/04/13 16:10	67-64-1	
Benzene	ND	ug/L	1.0	1		10/04/13 16:10	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		10/04/13 16:10	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		10/04/13 16:10	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		10/04/13 16:10	75-27-4	
Bromoform	ND	ug/L	1.0	1		10/04/13 16:10	75-25-2	
Bromomethane	ND	ug/L	5.0	1		10/04/13 16:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		10/04/13 16:10	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		10/04/13 16:10	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		10/04/13 16:10	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		10/04/13 16:10	98-06-6	
Carbon disulfide	ND	ug/L	5.0	1		10/04/13 16:10	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		10/04/13 16:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		10/04/13 16:10	108-90-7	
Chloroethane	ND	ug/L	1.0	1		10/04/13 16:10	75-00-3	
Chloroform	**1.7**	ug/L	1.0	1		10/04/13 16:10	67-66-3	
Chloromethane	ND	ug/L	1.0	1		10/04/13 16:10	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		10/04/13 16:10	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		10/04/13 16:10	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		10/04/13 16:10	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		10/04/13 16:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		10/04/13 16:10	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		10/04/13 16:10	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:10	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		10/04/13 16:10	75-71-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-092613-CM-MW-1-Z1 **Lab ID: 60154273001** Collected: 09/26/13 11:45 Received: 09/28/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1-Dichloroethane	ND	ug/L	1.0	1		10/04/13 16:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		10/04/13 16:10	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	1		10/04/13 16:10	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		10/04/13 16:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		10/04/13 16:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		10/04/13 16:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		10/04/13 16:10	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		10/04/13 16:10	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		10/04/13 16:10	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		10/04/13 16:10	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		10/04/13 16:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		10/04/13 16:10	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		10/04/13 16:10	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		10/04/13 16:10	87-68-3	
2-Hexanone	ND	ug/L	10.0	1		10/04/13 16:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		10/04/13 16:10	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		10/04/13 16:10	99-87-6	
Methylene chloride	ND	ug/L	1.0	1		10/04/13 16:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		10/04/13 16:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		10/04/13 16:10	1634-04-4	
Naphthalene	ND	ug/L	10.0	1		10/04/13 16:10	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		10/04/13 16:10	103-65-1	
Styrene	ND	ug/L	1.0	1		10/04/13 16:10	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		10/04/13 16:10	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		10/04/13 16:10	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		10/04/13 16:10	127-18-4	
Toluene	**2.0**	ug/L	1.0	1		10/04/13 16:10	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:10	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:10	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		10/04/13 16:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		10/04/13 16:10	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		10/04/13 16:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		10/04/13 16:10	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		10/04/13 16:10	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		10/04/13 16:10	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		10/04/13 16:10	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		10/04/13 16:10	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		10/04/13 16:10	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101	%	80-120	1		10/04/13 16:10	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-120	1		10/04/13 16:10	17060-07-0	
Toluene-d8 (S)	98	%	80-120	1		10/04/13 16:10	2037-26-5	
Preservation pH	**1.0**		0.10	1		10/04/13 16:10		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**246**	mg/L	20.0	1		10/22/13 16:10		H3

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-092613-CM-MW-1-Z1 **Lab ID: 60154273001** Collected: 09/26/13 11:45 Received: 09/28/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**246**	mg/L	20.0	1		10/22/13 16:10		H3
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4230**	mg/L	5.0	1		10/02/13 11:13		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**1.6**	mg/L	0.10	2		10/03/13 12:48	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		10/08/13 21:05	24959-67-9	
Chloride	**43.6**	mg/L	5.0	5		10/09/13 18:16	16887-00-6	
Sulfate	**4180**	mg/L	500	500		10/09/13 18:31	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-092613-CM-MW-1-Z2 **Lab ID: 60154273002** Collected: 09/26/13 15:25 Received: 09/28/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	ND	mg/L	0.50	1	09/30/13 00:00	10/01/13 17:09		
Surrogates								
p-Terphenyl (S)	81	%	28-127	1	09/30/13 00:00	10/01/13 17:09	92-94-4	
n-Tetracosane (S)	81	%	22-121	1	09/30/13 00:00	10/01/13 17:09	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		10/04/13 19:04		
Surrogates								
4-Bromofluorobenzene (S)	99	%	65-123	1		10/04/13 19:04	460-00-4	
Preservation pH	**1.0**			1		10/04/13 19:04		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron, Dissolved	**416**	ug/L	100	1	10/03/13 17:10	10/04/13 12:51	7440-42-8	
Calcium, Dissolved	**444000**	ug/L	100	1	10/03/13 17:10	10/04/13 12:51	7440-70-2	
Magnesium, Dissolved	**11300**	ug/L	50.0	1	10/03/13 17:10	10/04/13 12:51	7439-95-4	
Potassium, Dissolved	**13300**	ug/L	500	1	10/03/13 17:10	10/04/13 12:51	7440-09-7	
Sodium, Dissolved	**1440000**	ug/L	5000	10	10/03/13 17:10	10/04/13 13:34	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	10.0	1		10/04/13 16:24	67-64-1	
Benzene	**1.2**	ug/L	1.0	1		10/04/13 16:24	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		10/04/13 16:24	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		10/04/13 16:24	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		10/04/13 16:24	75-27-4	
Bromoform	ND	ug/L	1.0	1		10/04/13 16:24	75-25-2	
Bromomethane	ND	ug/L	5.0	1		10/04/13 16:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		10/04/13 16:24	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		10/04/13 16:24	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		10/04/13 16:24	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		10/04/13 16:24	98-06-6	
Carbon disulfide	ND	ug/L	5.0	1		10/04/13 16:24	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		10/04/13 16:24	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		10/04/13 16:24	108-90-7	
Chloroethane	ND	ug/L	1.0	1		10/04/13 16:24	75-00-3	
Chloroform	ND	ug/L	1.0	1		10/04/13 16:24	67-66-3	
Chloromethane	ND	ug/L	1.0	1		10/04/13 16:24	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		10/04/13 16:24	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		10/04/13 16:24	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		10/04/13 16:24	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		10/04/13 16:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		10/04/13 16:24	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		10/04/13 16:24	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:24	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:24	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:24	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		10/04/13 16:24	75-71-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-092613-CM-MW-1-Z2 **Lab ID: 60154273002** Collected: 09/26/13 15:25 Received: 09/28/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1-Dichloroethane	ND	ug/L	1.0	1		10/04/13 16:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		10/04/13 16:24	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	1		10/04/13 16:24	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		10/04/13 16:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		10/04/13 16:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		10/04/13 16:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		10/04/13 16:24	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		10/04/13 16:24	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		10/04/13 16:24	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		10/04/13 16:24	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		10/04/13 16:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		10/04/13 16:24	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		10/04/13 16:24	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		10/04/13 16:24	87-68-3	
2-Hexanone	ND	ug/L	10.0	1		10/04/13 16:24	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		10/04/13 16:24	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		10/04/13 16:24	99-87-6	
Methylene chloride	ND	ug/L	1.0	1		10/04/13 16:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		10/04/13 16:24	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		10/04/13 16:24	1634-04-4	
Naphthalene	ND	ug/L	10.0	1		10/04/13 16:24	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		10/04/13 16:24	103-65-1	
Styrene	ND	ug/L	1.0	1		10/04/13 16:24	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		10/04/13 16:24	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		10/04/13 16:24	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		10/04/13 16:24	127-18-4	
Toluene	**2.3**	ug/L	1.0	1		10/04/13 16:24	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:24	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:24	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		10/04/13 16:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		10/04/13 16:24	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		10/04/13 16:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		10/04/13 16:24	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		10/04/13 16:24	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		10/04/13 16:24	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		10/04/13 16:24	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		10/04/13 16:24	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		10/04/13 16:24	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102	%	80-120	1		10/04/13 16:24	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-120	1		10/04/13 16:24	17060-07-0	
Toluene-d8 (S)	102	%	80-120	1		10/04/13 16:24	2037-26-5	
Preservation pH	**1.0**		0.10	1		10/04/13 16:24		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**365**	mg/L	20.0	1		10/22/13 16:17		H3

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-092613-CM-MW-1-Z2 **Lab ID: 60154273002** Collected: 09/26/13 15:25 Received: 09/28/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**365**	mg/L	20.0	1		10/22/13 16:17		H3
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**6000**	mg/L	5.0	1		10/02/13 11:14		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**12.4**	mg/L	0.50	10		10/03/13 12:49	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		10/08/13 21:21	24959-67-9	
Chloride	**107**	mg/L	10.0	10		10/09/13 18:47	16887-00-6	
Sulfate	**4490**	mg/L	500	500		10/09/13 19:02	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-092613-CM-MW-1-DUP **Lab ID: 60154273003** Collected: 09/26/13 12:05 Received: 09/28/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	ND	mg/L	0.50	1	09/30/13 00:00	10/01/13 17:16		
Surrogates								
p-Terphenyl (S)	79	%	28-127	1	09/30/13 00:00	10/01/13 17:16	92-94-4	
n-Tetracosane (S)	81	%	22-121	1	09/30/13 00:00	10/01/13 17:16	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		10/04/13 19:25		
Surrogates								
4-Bromofluorobenzene (S)	83	%	65-123	1		10/04/13 19:25	460-00-4	
Preservation pH	**1.0**			1		10/04/13 19:25		
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron, Dissolved	**302**	ug/L	100	1	10/03/13 17:10	10/04/13 12:53	7440-42-8	
Calcium, Dissolved	**476000**	ug/L	100	1	10/03/13 17:10	10/04/13 12:53	7440-70-2	
Magnesium, Dissolved	**12000**	ug/L	50.0	1	10/03/13 17:10	10/04/13 12:53	7439-95-4	
Potassium, Dissolved	**14800**	ug/L	500	1	10/03/13 17:10	10/04/13 12:53	7440-09-7	
Sodium, Dissolved	**860000**	ug/L	5000	10	10/03/13 17:10	10/04/13 13:36	7440-23-5	
8260 MSV	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	10.0	1		10/04/13 16:38	67-64-1	
Benzene	ND	ug/L	1.0	1		10/04/13 16:38	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		10/04/13 16:38	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		10/04/13 16:38	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		10/04/13 16:38	75-27-4	
Bromoform	ND	ug/L	1.0	1		10/04/13 16:38	75-25-2	
Bromomethane	ND	ug/L	5.0	1		10/04/13 16:38	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		10/04/13 16:38	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		10/04/13 16:38	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		10/04/13 16:38	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		10/04/13 16:38	98-06-6	
Carbon disulfide	ND	ug/L	5.0	1		10/04/13 16:38	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		10/04/13 16:38	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		10/04/13 16:38	108-90-7	
Chloroethane	ND	ug/L	1.0	1		10/04/13 16:38	75-00-3	
Chloroform	**1.4**	ug/L	1.0	1		10/04/13 16:38	67-66-3	
Chloromethane	ND	ug/L	1.0	1		10/04/13 16:38	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		10/04/13 16:38	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		10/04/13 16:38	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		10/04/13 16:38	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		10/04/13 16:38	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		10/04/13 16:38	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		10/04/13 16:38	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:38	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:38	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:38	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		10/04/13 16:38	75-71-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-092613-CM-MW-1-DUP **Lab ID: 60154273003** Collected: 09/26/13 12:05 Received: 09/28/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1-Dichloroethane	ND	ug/L	1.0	1		10/04/13 16:38	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		10/04/13 16:38	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	1		10/04/13 16:38	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		10/04/13 16:38	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		10/04/13 16:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		10/04/13 16:38	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		10/04/13 16:38	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		10/04/13 16:38	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		10/04/13 16:38	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		10/04/13 16:38	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		10/04/13 16:38	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		10/04/13 16:38	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		10/04/13 16:38	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		10/04/13 16:38	87-68-3	
2-Hexanone	ND	ug/L	10.0	1		10/04/13 16:38	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		10/04/13 16:38	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		10/04/13 16:38	99-87-6	
Methylene chloride	ND	ug/L	1.0	1		10/04/13 16:38	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		10/04/13 16:38	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		10/04/13 16:38	1634-04-4	
Naphthalene	ND	ug/L	10.0	1		10/04/13 16:38	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		10/04/13 16:38	103-65-1	
Styrene	ND	ug/L	1.0	1		10/04/13 16:38	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		10/04/13 16:38	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		10/04/13 16:38	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		10/04/13 16:38	127-18-4	
Toluene	**1.9**	ug/L	1.0	1		10/04/13 16:38	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:38	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		10/04/13 16:38	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		10/04/13 16:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		10/04/13 16:38	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		10/04/13 16:38	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		10/04/13 16:38	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		10/04/13 16:38	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		10/04/13 16:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		10/04/13 16:38	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		10/04/13 16:38	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		10/04/13 16:38	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101	%	80-120	1		10/04/13 16:38	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-120	1		10/04/13 16:38	17060-07-0	
Toluene-d8 (S)	99	%	80-120	1		10/04/13 16:38	2037-26-5	
Preservation pH	**1.0**		0.10	1		10/04/13 16:38		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**246**	mg/L	20.0	1		10/22/13 16:27		H3

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-092613-CM-MW-1-DUP **Lab ID: 60154273003** Collected: 09/26/13 12:05 Received: 09/28/13 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**246**	mg/L	20.0	1		10/22/13 16:27		H3
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4230**	mg/L	5.0	1		10/02/13 11:14		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**1.5**	mg/L	0.10	2		10/03/13 12:49	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		10/08/13 21:36	24959-67-9	
Chloride	**42.6**	mg/L	5.0	5		10/09/13 19:17	16887-00-6	
Sulfate	**4150**	mg/L	500	500		10/09/13 19:33	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-100213-CM-MW-1-Z3 **Lab ID: 60154781001** Collected: 10/02/13 13:30 Received: 10/04/13 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO	**1.3**	mg/L	0.50	1	10/07/13 00:00	10/09/13 12:53		
Surrogates								
p-Terphenyl (S)	83	%	28-127	1	10/07/13 00:00	10/09/13 12:53	92-94-4	
n-Tetracosane (S)	84	%	22-121	1	10/07/13 00:00	10/09/13 12:53	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		10/16/13 11:38		
Surrogates								
4-Bromofluorobenzene (S)	109	%	65-123	1		10/16/13 11:38	460-00-4	
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron, Dissolved	**150**	ug/L	100	1	10/11/13 08:26	10/15/13 17:21	7440-42-8	
Calcium, Dissolved	**295000**	ug/L	200	2	10/11/13 08:26	10/14/13 14:53	7440-70-2	M1
Magnesium, Dissolved	**9320**	ug/L	100	2	10/11/13 08:26	10/14/13 14:53	7439-95-4	
Potassium, Dissolved	**14200**	ug/L	1000	2	10/11/13 08:26	10/14/13 14:53	7440-09-7	
Sodium, Dissolved	**635000**	ug/L	1000	2	10/11/13 08:26	10/14/13 14:53	7440-23-5	M1
8260 MSV	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	10.0	1		10/08/13 11:49	67-64-1	
Benzene	**1.1**	ug/L	1.0	1		10/08/13 11:49	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		10/08/13 11:49	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		10/08/13 11:49	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		10/08/13 11:49	75-27-4	
Bromoform	ND	ug/L	1.0	1		10/08/13 11:49	75-25-2	
Bromomethane	ND	ug/L	5.0	1		10/08/13 11:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		10/08/13 11:49	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		10/08/13 11:49	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		10/08/13 11:49	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		10/08/13 11:49	98-06-6	
Carbon disulfide	ND	ug/L	5.0	1		10/08/13 11:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		10/08/13 11:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		10/08/13 11:49	108-90-7	
Chloroethane	ND	ug/L	1.0	1		10/08/13 11:49	75-00-3	
Chloroform	ND	ug/L	1.0	1		10/08/13 11:49	67-66-3	
Chloromethane	ND	ug/L	1.0	1		10/08/13 11:49	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		10/08/13 11:49	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		10/08/13 11:49	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		10/08/13 11:49	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		10/08/13 11:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		10/08/13 11:49	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		10/08/13 11:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		10/08/13 11:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		10/08/13 11:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		10/08/13 11:49	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		10/08/13 11:49	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		10/08/13 11:49	75-34-3	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-100213-CM-MW-1-Z3 **Lab ID: 60154781001** Collected: 10/02/13 13:30 Received: 10/04/13 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,2-Dichloroethane	ND	ug/L	1.0	1		10/08/13 11:49	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	1.0	1		10/08/13 11:49	540-59-0	
1,1-Dichloroethene	ND	ug/L	1.0	1		10/08/13 11:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		10/08/13 11:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		10/08/13 11:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		10/08/13 11:49	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		10/08/13 11:49	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		10/08/13 11:49	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		10/08/13 11:49	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		10/08/13 11:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		10/08/13 11:49	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		10/08/13 11:49	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		10/08/13 11:49	87-68-3	
2-Hexanone	ND	ug/L	10.0	1		10/08/13 11:49	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		10/08/13 11:49	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		10/08/13 11:49	99-87-6	
Methylene chloride	ND	ug/L	1.0	1		10/08/13 11:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		10/08/13 11:49	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		10/08/13 11:49	1634-04-4	
Naphthalene	ND	ug/L	10.0	1		10/08/13 11:49	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		10/08/13 11:49	103-65-1	
Styrene	ND	ug/L	1.0	1		10/08/13 11:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		10/08/13 11:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		10/08/13 11:49	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		10/08/13 11:49	127-18-4	
Toluene	**2.0**	ug/L	1.0	1		10/08/13 11:49	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		10/08/13 11:49	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		10/08/13 11:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		10/08/13 11:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		10/08/13 11:49	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		10/08/13 11:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		10/08/13 11:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		10/08/13 11:49	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		10/08/13 11:49	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		10/08/13 11:49	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		10/08/13 11:49	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		10/08/13 11:49	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99	%	80-120	1		10/08/13 11:49	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	80-120	1		10/08/13 11:49	17060-07-0	
Toluene-d8 (S)	96	%	80-120	1		10/08/13 11:49	2037-26-5	
Preservation pH	**1.0**		0.10	1		10/08/13 11:49		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**1290**	mg/L	40.0	2		10/09/13 10:29		
Alkalinity, Total as CaCO3	**1290**	mg/L	40.0	2		10/09/13 10:29		

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Sample: GW-074922-100213-CM-MW-1-Z3 **Lab ID: 60154781001** Collected: 10/02/13 13:30 Received: 10/04/13 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2770**	mg/L	5.0	1		10/09/13 12:56		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**3.4**	mg/L	0.10	2		10/16/13 14:33	18496-25-8	H3
	Analytical Method: SM 4500-S-2 F							
Sulfide	**5.7**	mg/L	0.50	1		10/07/13 13:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		10/14/13 13:45	24959-67-9	
Chloride	**186**	mg/L	50.0	50		10/14/13 14:00	16887-00-6	
Fluoride	**0.59**	mg/L	0.20	1		10/14/13 13:45	16984-48-8	
Sulfate	**593**	mg/L	50.0	50		10/14/13 14:00	14808-79-8	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: GCV/4513 Analysis Method: EPA 5030B/8015B
QC Batch Method: EPA 5030B/8015B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60154273001, 60154273002, 60154273003

METHOD BLANK: 1265905 Matrix: Water
Associated Lab Samples: 60154273001, 60154273002, 60154273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	10/04/13 18:21	
4-Bromofluorobenzene (S)	%	93	65-123	10/04/13 18:21	

LABORATORY CONTROL SAMPLE: 1265906

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	1.0	100	67-134	
4-Bromofluorobenzene (S)	%			101	65-123	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: GCV/4518
QC Batch Method: EPA 5030B/8015B
Analysis Method: EPA 5030B/8015B
Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60154781001

METHOD BLANK: 1273364 Matrix: Water
Associated Lab Samples: 60154781001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	10/16/13 11:17	
4-Bromofluorobenzene (S)	%	86	65-123	10/16/13 11:17	

LABORATORY CONTROL SAMPLE: 1273365

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	1.0	104	67-134	
4-Bromofluorobenzene (S)	%			71	65-123	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1269939 1269940

Parameter	Units	60155138002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-GRO	mg/L	ND	1	1	1.0	1.1	99	104	40-158	5	30	
4-Bromofluorobenzene (S)	%						115	111	65-123			

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: MPRP/24558 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60154273001, 60154273002, 60154273003

METHOD BLANK: 1265504 Matrix: Water
Associated Lab Samples: 60154273001, 60154273002, 60154273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron, Dissolved	ug/L	ND	100	10/04/13 12:34	
Calcium, Dissolved	ug/L	ND	100	10/04/13 12:34	
Magnesium, Dissolved	ug/L	ND	50.0	10/04/13 12:34	
Potassium, Dissolved	ug/L	ND	500	10/04/13 12:34	
Sodium, Dissolved	ug/L	ND	500	10/04/13 12:34	

LABORATORY CONTROL SAMPLE: 1265505

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron, Dissolved	ug/L	1000	928	93	80-120	
Calcium, Dissolved	ug/L	10000	9660	97	80-120	
Magnesium, Dissolved	ug/L	10000	9470	95	80-120	
Potassium, Dissolved	ug/L	10000	9660	97	80-120	
Sodium, Dissolved	ug/L	10000	9490	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1265506 1265507

Parameter	Units	60154273001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron, Dissolved	ug/L	289	1000	1000	1220	1240	93	95	75-125	1	20	
Calcium, Dissolved	ug/L	460000	10000	10000	471000	464000	107	31	75-125	2	20	M1
Magnesium, Dissolved	ug/L	11700	10000	10000	20200	20300	85	86	75-125	0	20	
Potassium, Dissolved	ug/L	14100	10000	10000	24400	24700	102	105	75-125	1	20	
Sodium, Dissolved	ug/L	906000	10000	10000	895000	926000	-108	200	75-125	3	20	M1

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: MPRP/24679
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60154781001

METHOD BLANK: 1269702 Matrix: Water
Associated Lab Samples: 60154781001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron, Dissolved	ug/L	ND	100	10/15/13 17:19	
Calcium, Dissolved	ug/L	ND	100	10/14/13 14:49	
Magnesium, Dissolved	ug/L	ND	50.0	10/14/13 14:49	
Potassium, Dissolved	ug/L	ND	500	10/14/13 14:49	
Sodium, Dissolved	ug/L	ND	500	10/14/13 14:49	

LABORATORY CONTROL SAMPLE: 1269703

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron, Dissolved	ug/L	1000	962	96	80-120	
Calcium, Dissolved	ug/L	10000	10200	102	80-120	
Magnesium, Dissolved	ug/L	10000	10000	100	80-120	
Potassium, Dissolved	ug/L	10000	9950	99	80-120	
Sodium, Dissolved	ug/L	10000	10500	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1269704 1269705

Parameter	Units	60154781001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron, Dissolved	ug/L	150	1000	1000	1110	1110	96	96	75-125	1	20	
Calcium, Dissolved	ug/L	295000	10000	10000	309000	303000	142	74	75-125	2	20	M1
Magnesium, Dissolved	ug/L	9320	10000	10000	19000	18800	97	95	75-125	1	20	
Potassium, Dissolved	ug/L	14200	10000	10000	24600	24100	104	98	75-125	2	20	
Sodium, Dissolved	ug/L	635000	10000	10000	662000	640000	272	52	75-125	3	20	M1

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: MSV/56777 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60154273001, 60154273002, 60154273003

METHOD BLANK: 1265831 Matrix: Water
Associated Lab Samples: 60154273001, 60154273002, 60154273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	10/04/13 13:59	
1,1,1-Trichloroethane	ug/L	ND	1.0	10/04/13 13:59	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	10/04/13 13:59	
1,1,2-Trichloroethane	ug/L	ND	1.0	10/04/13 13:59	
1,1-Dichloroethane	ug/L	ND	1.0	10/04/13 13:59	
1,1-Dichloroethene	ug/L	ND	1.0	10/04/13 13:59	
1,1-Dichloropropene	ug/L	ND	1.0	10/04/13 13:59	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	10/04/13 13:59	
1,2,3-Trichloropropane	ug/L	ND	2.5	10/04/13 13:59	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	10/04/13 13:59	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	10/04/13 13:59	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	10/04/13 13:59	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	10/04/13 13:59	
1,2-Dichlorobenzene	ug/L	ND	1.0	10/04/13 13:59	
1,2-Dichloroethane	ug/L	ND	1.0	10/04/13 13:59	
1,2-Dichloroethene (Total)	ug/L	ND	1.0	10/04/13 13:59	
1,2-Dichloropropane	ug/L	ND	1.0	10/04/13 13:59	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	10/04/13 13:59	
1,3-Dichlorobenzene	ug/L	ND	1.0	10/04/13 13:59	
1,3-Dichloropropane	ug/L	ND	1.0	10/04/13 13:59	
1,4-Dichlorobenzene	ug/L	ND	1.0	10/04/13 13:59	
2,2-Dichloropropane	ug/L	ND	1.0	10/04/13 13:59	
2-Butanone (MEK)	ug/L	ND	10.0	10/04/13 13:59	
2-Chlorotoluene	ug/L	ND	1.0	10/04/13 13:59	
2-Hexanone	ug/L	ND	10.0	10/04/13 13:59	
4-Chlorotoluene	ug/L	ND	1.0	10/04/13 13:59	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	10/04/13 13:59	
Acetone	ug/L	ND	10.0	10/04/13 13:59	
Benzene	ug/L	ND	1.0	10/04/13 13:59	
Bromobenzene	ug/L	ND	1.0	10/04/13 13:59	
Bromochloromethane	ug/L	ND	1.0	10/04/13 13:59	
Bromodichloromethane	ug/L	ND	1.0	10/04/13 13:59	
Bromoform	ug/L	ND	1.0	10/04/13 13:59	
Bromomethane	ug/L	ND	5.0	10/04/13 13:59	
Carbon disulfide	ug/L	ND	5.0	10/04/13 13:59	
Carbon tetrachloride	ug/L	ND	1.0	10/04/13 13:59	
Chlorobenzene	ug/L	ND	1.0	10/04/13 13:59	
Chloroethane	ug/L	ND	1.0	10/04/13 13:59	
Chloroform	ug/L	ND	1.0	10/04/13 13:59	
Chloromethane	ug/L	ND	1.0	10/04/13 13:59	
cis-1,2-Dichloroethene	ug/L	ND	1.0	10/04/13 13:59	
cis-1,3-Dichloropropene	ug/L	ND	1.0	10/04/13 13:59	
Dibromochloromethane	ug/L	ND	1.0	10/04/13 13:59	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

METHOD BLANK: 1265831 Matrix: Water

Associated Lab Samples: 60154273001, 60154273002, 60154273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	10/04/13 13:59	
Dichlorodifluoromethane	ug/L	ND	1.0	10/04/13 13:59	
Ethylbenzene	ug/L	ND	1.0	10/04/13 13:59	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	10/04/13 13:59	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	10/04/13 13:59	
Methyl-tert-butyl ether	ug/L	ND	1.0	10/04/13 13:59	
Methylene chloride	ug/L	ND	1.0	10/04/13 13:59	
n-Butylbenzene	ug/L	ND	1.0	10/04/13 13:59	
n-Propylbenzene	ug/L	ND	1.0	10/04/13 13:59	
Naphthalene	ug/L	ND	10.0	10/04/13 13:59	
p-Isopropyltoluene	ug/L	ND	1.0	10/04/13 13:59	
sec-Butylbenzene	ug/L	ND	1.0	10/04/13 13:59	
Styrene	ug/L	ND	1.0	10/04/13 13:59	
tert-Butylbenzene	ug/L	ND	1.0	10/04/13 13:59	
Tetrachloroethene	ug/L	ND	1.0	10/04/13 13:59	
Toluene	ug/L	ND	1.0	10/04/13 13:59	
trans-1,2-Dichloroethene	ug/L	ND	1.0	10/04/13 13:59	
trans-1,3-Dichloropropene	ug/L	ND	1.0	10/04/13 13:59	
Trichloroethene	ug/L	ND	1.0	10/04/13 13:59	
Trichlorofluoromethane	ug/L	ND	1.0	10/04/13 13:59	
Vinyl chloride	ug/L	ND	1.0	10/04/13 13:59	
Xylene (Total)	ug/L	ND	3.0	10/04/13 13:59	
1,2-Dichloroethane-d4 (S)	%	100	80-120	10/04/13 13:59	
4-Bromofluorobenzene (S)	%	102	80-120	10/04/13 13:59	
Toluene-d8 (S)	%	102	80-120	10/04/13 13:59	

LABORATORY CONTROL SAMPLE: 1265832

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.7	108	79-121	
1,1,1-Trichloroethane	ug/L	20	20.8	104	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	20.8	104	73-120	
1,1,2-Trichloroethane	ug/L	20	21.6	108	76-120	
1,1-Dichloroethane	ug/L	20	20.9	105	73-120	
1,1-Dichloroethene	ug/L	20	21.7	109	70-127	
1,1-Dichloropropene	ug/L	20	22.6	113	79-124	
1,2,3-Trichlorobenzene	ug/L	20	21.4	107	68-130	
1,2,3-Trichloropropane	ug/L	20	21.5	107	72-124	
1,2,4-Trichlorobenzene	ug/L	20	22.9	114	73-125	
1,2,4-Trimethylbenzene	ug/L	20	22.1	110	76-120	
1,2-Dibromo-3-chloropropane	ug/L	20	19.9	100	68-126	
1,2-Dibromoethane (EDB)	ug/L	20	22.8	114	79-121	
1,2-Dichlorobenzene	ug/L	20	22.3	112	79-120	
1,2-Dichloroethane	ug/L	20	20.7	103	72-122	
1,2-Dichloroethene (Total)	ug/L	40	43.2	108	77-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

LABORATORY CONTROL SAMPLE: 1265832

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloropropane	ug/L	20	22.2	111	77-120	
1,3,5-Trimethylbenzene	ug/L	20	21.8	109	75-120	
1,3-Dichlorobenzene	ug/L	20	21.8	109	80-120	
1,3-Dichloropropane	ug/L	20	20.8	104	76-120	
1,4-Dichlorobenzene	ug/L	20	21.6	108	80-120	
2,2-Dichloropropane	ug/L	20	17.7	89	52-135	
2-Butanone (MEK)	ug/L	100	94.9	95	69-124	
2-Chlorotoluene	ug/L	20	21.2	106	78-120	
2-Hexanone	ug/L	100	106	106	70-125	
4-Chlorotoluene	ug/L	20	21.1	105	80-120	
4-Methyl-2-pentanone (MIBK)	ug/L	100	107	107	72-123	
Acetone	ug/L	100	96.0	96	60-126	
Benzene	ug/L	20	21.2	106	73-122	
Bromobenzene	ug/L	20	21.3	106	79-120	
Bromochloromethane	ug/L	20	21.0	105	76-125	
Bromodichloromethane	ug/L	20	19.7	99	73-120	
Bromoform	ug/L	20	21.2	106	74-120	
Bromomethane	ug/L	20	21.5	108	40-146	
Carbon disulfide	ug/L	20	19.3	96	62-125	
Carbon tetrachloride	ug/L	20	20.5	102	73-125	
Chlorobenzene	ug/L	20	22.1	110	80-120	
Chloroethane	ug/L	20	19.2	96	56-159	
Chloroform	ug/L	20	21.4	107	76-120	
Chloromethane	ug/L	20	18.6	93	40-148	
cis-1,2-Dichloroethene	ug/L	20	20.7	104	69-120	
cis-1,3-Dichloropropene	ug/L	20	20.0	100	76-120	
Dibromochloromethane	ug/L	20	22.1	110	79-121	
Dibromomethane	ug/L	20	19.4	97	77-120	
Dichlorodifluoromethane	ug/L	20	14.4	72	40-141	
Ethylbenzene	ug/L	20	22.2	111	76-123	
Hexachloro-1,3-butadiene	ug/L	20	21.7	109	69-125	
Isopropylbenzene (Cumene)	ug/L	20	24.4	122	80-130	
Methyl-tert-butyl ether	ug/L	20	20.8	104	67-128	
Methylene chloride	ug/L	20	23.1	116	71-123	
n-Butylbenzene	ug/L	20	21.4	107	77-124	
n-Propylbenzene	ug/L	20	21.5	107	78-120	
Naphthalene	ug/L	20	22.1	111	64-127	
p-Isopropyltoluene	ug/L	20	22.2	111	78-120	
sec-Butylbenzene	ug/L	20	22.6	113	77-122	
Styrene	ug/L	20	21.3	107	79-120	
tert-Butylbenzene	ug/L	20	21.8	109	76-123	
Tetrachloroethene	ug/L	20	21.4	107	79-122	
Toluene	ug/L	20	23.1	116	76-122	
trans-1,2-Dichloroethene	ug/L	20	22.5	112	78-126	
trans-1,3-Dichloropropene	ug/L	20	22.6	113	79-124	
Trichloroethene	ug/L	20	20.6	103	76-120	
Trichlorofluoromethane	ug/L	20	17.6	88	69-133	
Vinyl chloride	ug/L	20	19.1	95	57-140	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

LABORATORY CONTROL SAMPLE: 1265832

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/L	60	66.2	110	76-122	
1,2-Dichloroethane-d4 (S)	%			96	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			103	80-120	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: MSV/56842
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60154781001

METHOD BLANK: 1267545
Matrix: Water
Associated Lab Samples: 60154781001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	10/08/13 09:43	
1,1,1-Trichloroethane	ug/L	ND	1.0	10/08/13 09:43	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	10/08/13 09:43	
1,1,2-Trichloroethane	ug/L	ND	1.0	10/08/13 09:43	
1,1-Dichloroethane	ug/L	ND	1.0	10/08/13 09:43	
1,1-Dichloroethene	ug/L	ND	1.0	10/08/13 09:43	
1,1-Dichloropropene	ug/L	ND	1.0	10/08/13 09:43	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	10/08/13 09:43	
1,2,3-Trichloropropane	ug/L	ND	2.5	10/08/13 09:43	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	10/08/13 09:43	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	10/08/13 09:43	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	10/08/13 09:43	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	10/08/13 09:43	
1,2-Dichlorobenzene	ug/L	ND	1.0	10/08/13 09:43	
1,2-Dichloroethane	ug/L	ND	1.0	10/08/13 09:43	
1,2-Dichloroethene (Total)	ug/L	ND	1.0	10/08/13 09:43	
1,2-Dichloropropane	ug/L	ND	1.0	10/08/13 09:43	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	10/08/13 09:43	
1,3-Dichlorobenzene	ug/L	ND	1.0	10/08/13 09:43	
1,3-Dichloropropane	ug/L	ND	1.0	10/08/13 09:43	
1,4-Dichlorobenzene	ug/L	ND	1.0	10/08/13 09:43	
2,2-Dichloropropane	ug/L	ND	1.0	10/08/13 09:43	
2-Butanone (MEK)	ug/L	ND	10.0	10/08/13 09:43	
2-Chlorotoluene	ug/L	ND	1.0	10/08/13 09:43	
2-Hexanone	ug/L	ND	10.0	10/08/13 09:43	
4-Chlorotoluene	ug/L	ND	1.0	10/08/13 09:43	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	10/08/13 09:43	
Acetone	ug/L	ND	10.0	10/08/13 09:43	
Benzene	ug/L	ND	1.0	10/08/13 09:43	
Bromobenzene	ug/L	ND	1.0	10/08/13 09:43	
Bromochloromethane	ug/L	ND	1.0	10/08/13 09:43	
Bromodichloromethane	ug/L	ND	1.0	10/08/13 09:43	
Bromoform	ug/L	ND	1.0	10/08/13 09:43	
Bromomethane	ug/L	ND	5.0	10/08/13 09:43	
Carbon disulfide	ug/L	ND	5.0	10/08/13 09:43	
Carbon tetrachloride	ug/L	ND	1.0	10/08/13 09:43	
Chlorobenzene	ug/L	ND	1.0	10/08/13 09:43	
Chloroethane	ug/L	ND	1.0	10/08/13 09:43	
Chloroform	ug/L	ND	1.0	10/08/13 09:43	
Chloromethane	ug/L	ND	1.0	10/08/13 09:43	
cis-1,2-Dichloroethene	ug/L	ND	1.0	10/08/13 09:43	
cis-1,3-Dichloropropene	ug/L	ND	1.0	10/08/13 09:43	
Dibromochloromethane	ug/L	ND	1.0	10/08/13 09:43	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

METHOD BLANK: 1267545 Matrix: Water

Associated Lab Samples: 60154781001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	10/08/13 09:43	
Dichlorodifluoromethane	ug/L	ND	1.0	10/08/13 09:43	
Ethylbenzene	ug/L	ND	1.0	10/08/13 09:43	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	10/08/13 09:43	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	10/08/13 09:43	
Methyl-tert-butyl ether	ug/L	ND	1.0	10/08/13 09:43	
Methylene chloride	ug/L	ND	1.0	10/08/13 09:43	
n-Butylbenzene	ug/L	ND	1.0	10/08/13 09:43	
n-Propylbenzene	ug/L	ND	1.0	10/08/13 09:43	
Naphthalene	ug/L	ND	10.0	10/08/13 09:43	
p-Isopropyltoluene	ug/L	ND	1.0	10/08/13 09:43	
sec-Butylbenzene	ug/L	ND	1.0	10/08/13 09:43	
Styrene	ug/L	ND	1.0	10/08/13 09:43	
tert-Butylbenzene	ug/L	ND	1.0	10/08/13 09:43	
Tetrachloroethene	ug/L	ND	1.0	10/08/13 09:43	
Toluene	ug/L	ND	1.0	10/08/13 09:43	
trans-1,2-Dichloroethene	ug/L	ND	1.0	10/08/13 09:43	
trans-1,3-Dichloropropene	ug/L	ND	1.0	10/08/13 09:43	
Trichloroethene	ug/L	ND	1.0	10/08/13 09:43	
Trichlorofluoromethane	ug/L	ND	1.0	10/08/13 09:43	
Vinyl chloride	ug/L	ND	1.0	10/08/13 09:43	
Xylene (Total)	ug/L	ND	3.0	10/08/13 09:43	
1,2-Dichloroethane-d4 (S)	%	102	80-120	10/08/13 09:43	
4-Bromofluorobenzene (S)	%	103	80-120	10/08/13 09:43	
Toluene-d8 (S)	%	99	80-120	10/08/13 09:43	

LABORATORY CONTROL SAMPLE: 1267546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.5	108	79-121	
1,1,1-Trichloroethane	ug/L	20	21.4	107	75-124	
1,1,2,2-Tetrachloroethane	ug/L	20	20.9	104	73-120	
1,1,2-Trichloroethane	ug/L	20	21.3	107	76-120	
1,1-Dichloroethane	ug/L	20	19.6	98	73-120	
1,1-Dichloroethene	ug/L	20	21.8	109	70-127	
1,1-Dichloropropene	ug/L	20	23.0	115	79-124	
1,2,3-Trichlorobenzene	ug/L	20	21.8	109	68-130	
1,2,3-Trichloropropane	ug/L	20	21.2	106	72-124	
1,2,4-Trichlorobenzene	ug/L	20	22.3	112	73-125	
1,2,4-Trimethylbenzene	ug/L	20	21.1	106	76-120	
1,2-Dibromo-3-chloropropane	ug/L	20	20.9	104	68-126	
1,2-Dibromoethane (EDB)	ug/L	20	22.7	113	79-121	
1,2-Dichlorobenzene	ug/L	20	21.2	106	79-120	
1,2-Dichloroethane	ug/L	20	21.9	110	72-122	
1,2-Dichloroethene (Total)	ug/L	40	41.4	103	77-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

LABORATORY CONTROL SAMPLE: 1267546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloropropane	ug/L	20	22.8	114	77-120	
1,3,5-Trimethylbenzene	ug/L	20	20.7	104	75-120	
1,3-Dichlorobenzene	ug/L	20	20.7	103	80-120	
1,3-Dichloropropane	ug/L	20	20.8	104	76-120	
1,4-Dichlorobenzene	ug/L	20	21.1	105	80-120	
2,2-Dichloropropane	ug/L	20	21.8	109	52-135	
2-Butanone (MEK)	ug/L	100	103	103	69-124	
2-Chlorotoluene	ug/L	20	20.6	103	78-120	
2-Hexanone	ug/L	100	104	104	70-125	
4-Chlorotoluene	ug/L	20	19.7	98	80-120	
4-Methyl-2-pentanone (MIBK)	ug/L	100	111	111	72-123	
Acetone	ug/L	100	91.0	91	60-126	
Benzene	ug/L	20	21.8	109	73-122	
Bromobenzene	ug/L	20	20.4	102	79-120	
Bromochloromethane	ug/L	20	21.7	108	76-125	
Bromodichloromethane	ug/L	20	20.8	104	73-120	
Bromoform	ug/L	20	21.6	108	74-120	
Bromomethane	ug/L	20	17.8	89	40-146	
Carbon disulfide	ug/L	20	18.4	92	62-125	
Carbon tetrachloride	ug/L	20	21.7	108	73-125	
Chlorobenzene	ug/L	20	21.9	109	80-120	
Chloroethane	ug/L	20	17.0	85	56-159	
Chloroform	ug/L	20	22.0	110	76-120	
Chloromethane	ug/L	20	12.2	61	40-148	
cis-1,2-Dichloroethene	ug/L	20	19.8	99	69-120	
cis-1,3-Dichloropropene	ug/L	20	21.7	109	76-120	
Dibromochloromethane	ug/L	20	22.6	113	79-121	
Dibromomethane	ug/L	20	20.4	102	77-120	
Dichlorodifluoromethane	ug/L	20	13.5	68	40-141	
Ethylbenzene	ug/L	20	21.2	106	76-123	
Hexachloro-1,3-butadiene	ug/L	20	20.9	105	69-125	
Isopropylbenzene (Cumene)	ug/L	20	23.8	119	80-130	
Methyl-tert-butyl ether	ug/L	20	21.8	109	67-128	
Methylene chloride	ug/L	20	21.2	106	71-123	
n-Butylbenzene	ug/L	20	20.5	102	77-124	
n-Propylbenzene	ug/L	20	20.4	102	78-120	
Naphthalene	ug/L	20	21.5	107	64-127	
p-Isopropyltoluene	ug/L	20	21.3	106	78-120	
sec-Butylbenzene	ug/L	20	21.2	106	77-122	
Styrene	ug/L	20	21.0	105	79-120	
tert-Butylbenzene	ug/L	20	20.4	102	76-123	
Tetrachloroethene	ug/L	20	21.3	106	79-122	
Toluene	ug/L	20	22.2	111	76-122	
trans-1,2-Dichloroethene	ug/L	20	21.5	108	78-126	
trans-1,3-Dichloropropene	ug/L	20	23.4	117	79-124	
Trichloroethene	ug/L	20	19.9	100	76-120	
Trichlorofluoromethane	ug/L	20	17.9	89	69-133	
Vinyl chloride	ug/L	20	17.5	88	57-140	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

LABORATORY CONTROL SAMPLE: 1267546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/L	60	64.9	108	76-122	
1,2-Dichloroethane-d4 (S)	%			100	80-120	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			100	80-120	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: OEXT/40739 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B
Associated Lab Samples: 60154273001, 60154273002, 60154273003

METHOD BLANK: 1262785 Matrix: Water
Associated Lab Samples: 60154273001, 60154273002, 60154273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	0.50	10/01/13 16:03	
n-Tetracosane (S)	%	88	22-121	10/01/13 16:03	
p-Terphenyl (S)	%	86	28-127	10/01/13 16:03	

LABORATORY CONTROL SAMPLE: 1262786

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	12.5	10.6	85	39-120	
n-Tetracosane (S)	%			88	22-121	
p-Terphenyl (S)	%			87	28-127	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: OEXT/40857
QC Batch Method: EPA 3510C
Analysis Method: EPA 8015B
Analysis Description: EPA 8015B
Associated Lab Samples: 60154781001

METHOD BLANK: 1266921 Matrix: Water
Associated Lab Samples: 60154781001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	0.50	10/09/13 12:32	
n-Tetracosane (S)	%	56	22-121	10/09/13 12:32	
p-Terphenyl (S)	%	85	28-127	10/09/13 12:32	

LABORATORY CONTROL SAMPLE: 1266922

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	12.5	9.8	78	39-120	
n-Tetracosane (S)	%			101	22-121	
p-Terphenyl (S)	%			117	28-127	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: WET/43881
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60154781001

METHOD BLANK: 1268147
Matrix: Water
Associated Lab Samples: 60154781001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	10/09/13 08:12	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	10/09/13 08:12	

LABORATORY CONTROL SAMPLE: 1268148

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	519	104	90-110	

SAMPLE DUPLICATE: 1268151

Parameter	Units	60154705002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	382	385	1	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	382	385	1	10	

SAMPLE DUPLICATE: 1268152

Parameter	Units	60154591001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	299	302	1	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	299	302	1	10	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: WET/44162 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60154273001, 60154273002, 60154273003

METHOD BLANK: 1276406 Matrix: Water
Associated Lab Samples: 60154273001, 60154273002, 60154273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	10/22/13 16:06	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	10/22/13 16:06	

LABORATORY CONTROL SAMPLE: 1276407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	503	101	90-110	

SAMPLE DUPLICATE: 1276410

Parameter	Units	60154273002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	365	372	2	10	H3
Alkalinity,Bicarbonate (CaCO3)	mg/L	365	372	2	10	H3

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: WET/43754 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60154273001, 60154273002, 60154273003

METHOD BLANK: 1264041 Matrix: Water
Associated Lab Samples: 60154273001, 60154273002, 60154273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	10/02/13 11:06	

LABORATORY CONTROL SAMPLE: 1264042

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 1264043

Parameter	Units	60154000001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	197	195	1	17	

SAMPLE DUPLICATE: 1264044

Parameter	Units	60154026001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	595	590	1	17	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: WET/43892
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60154781001

METHOD BLANK: 1268249 Matrix: Water
Associated Lab Samples: 60154781001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	10/09/13 12:45	

LABORATORY CONTROL SAMPLE: 1268250

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	954	95	80-120	

SAMPLE DUPLICATE: 1268251

Parameter	Units	60154567001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1170	1190	2	17	

SAMPLE DUPLICATE: 1268252

Parameter	Units	60154595009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	695	693	0	17	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: WET/43785 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60154273001, 60154273002, 60154273003

METHOD BLANK: 1264858 Matrix: Water
Associated Lab Samples: 60154273001, 60154273002, 60154273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	10/03/13 12:39	

LABORATORY CONTROL SAMPLE: 1264859

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.5	0.49	99	80-120	

MATRIX SPIKE SAMPLE: 1264860

Parameter	Units	60154109002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.5	0.28	54	75-125	M1

SAMPLE DUPLICATE: 1264861

Parameter	Units	60154150001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: WET/44025
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60154781001

METHOD BLANK: 1272373 Matrix: Water
Associated Lab Samples: 60154781001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	10/16/13 14:20	

LABORATORY CONTROL SAMPLE: 1272374

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.5	0.48	95	80-120	

MATRIX SPIKE SAMPLE: 1272375

Parameter	Units	60155219002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.5	0.32	58	75-125	

SAMPLE DUPLICATE: 1272376

Parameter	Units	60155349004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: WET/43837
QC Batch Method: SM 4500-S-2 F
Analysis Method: SM 4500-S-2 F
Analysis Description: 4500S2F Sulfide, Iodometric
Associated Lab Samples: 60154781001

METHOD BLANK: 1267079 Matrix: Water
Associated Lab Samples: 60154781001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.50	10/07/13 13:00	

LABORATORY CONTROL SAMPLE: 1267080

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	10	9.1	91	80-120	

MATRIX SPIKE SAMPLE: 1267081

Parameter	Units	60154781001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	5.7	20	22.6	85	75-125	

SAMPLE DUPLICATE: 1267082

Parameter	Units	60154788002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide	mg/L	ND	ND		15	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: WETA/26546 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60154273001, 60154273002, 60154273003

METHOD BLANK: 1267854 Matrix: Water
Associated Lab Samples: 60154273001, 60154273002, 60154273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	10/08/13 15:11	
Chloride	mg/L	ND	1.0	10/08/13 15:11	
Sulfate	mg/L	ND	1.0	10/08/13 15:11	

METHOD BLANK: 1269406 Matrix: Water
Associated Lab Samples: 60154273001, 60154273002, 60154273003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	10/09/13 16:28	
Chloride	mg/L	ND	1.0	10/09/13 16:28	
Sulfate	mg/L	ND	1.0	10/09/13 16:28	

LABORATORY CONTROL SAMPLE: 1267855

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	4.9	99	90-110	
Chloride	mg/L	5	4.9	98	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

LABORATORY CONTROL SAMPLE: 1269407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	4.9	98	90-110	
Chloride	mg/L	5	4.9	98	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1267856 1267857

Parameter	Units	60154111001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Bromide	mg/L	ND	5	5	5.1	5.1	101	102	80-120	1	15	
Chloride	mg/L	14.3	5	5	19.1	19.2	96	97	80-120	0	15	
Sulfate	mg/L	89.0	50	50	133	134	89	90	80-120	0	15	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

MATRIX SPIKE SAMPLE: 1267858

Parameter	Units	60154045001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	ND	50	49.1	98	80-120	
Chloride	mg/L	21.9	50	64.6	85	80-120	
Sulfate	mg/L	130	50	160	61	80-120	M1

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

QC Batch: WETA/26660
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60154781001

METHOD BLANK: 1271434 Matrix: Water
Associated Lab Samples: 60154781001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	10/14/13 08:57	
Chloride	mg/L	ND	1.0	10/14/13 08:57	
Fluoride	mg/L	ND	0.20	10/14/13 08:57	
Sulfate	mg/L	ND	1.0	10/14/13 08:57	

LABORATORY CONTROL SAMPLE: 1271435

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	4.7	94	90-110	
Chloride	mg/L	5	4.6	93	90-110	
Fluoride	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1271436 1271437

Parameter	Units	60154700001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Bromide	mg/L	ND	2500	2500	2320	2330	93	93	80-120	0	15	
Chloride	mg/L	ND	2500	2500	2410	2410	79	79	80-120	0	15	M1
Fluoride	mg/L	ND	1250	1250	1120	1140	90	91	80-120	2	15	
Sulfate	mg/L	2290	2500	2500	4610	4640	93	94	80-120	0	15	

MATRIX SPIKE SAMPLE: 1271438

Parameter	Units	60154700002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	ND	2500	2320	93	80-120	
Chloride	mg/L	604	2500	2600	80	80-120	
Fluoride	mg/L	ND	1250	1140	91	80-120	
Sulfate	mg/L	2300	2500	4680	95	80-120	

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QUALIFIERS

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: OEXT/40739
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: MSV/56777
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: GCV/4513
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: OEXT/40857
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: MSV/56842
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

H3 Sample was received or analysis requested beyond the recognized method holding time.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 San Juan 32-8.30 Area
Pace Project No.: 60154273

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60154273001	GW-074922-092613-CM-MW-1-Z1	EPA 3510C	OEXT/40739	EPA 8015B	GCSV/15535
60154273002	GW-074922-092613-CM-MW-1-Z2	EPA 3510C	OEXT/40739	EPA 8015B	GCSV/15535
60154273003	GW-074922-092613-CM-MW-1-DUP	EPA 3510C	OEXT/40739	EPA 8015B	GCSV/15535
60154781001	GW-074922-100213-CM-MW-1-Z3	EPA 3510C	OEXT/40857	EPA 8015B	GCSV/15580
60154273001	GW-074922-092613-CM-MW-1-Z1	EPA 5030B/8015B	GCV/4513		
60154273002	GW-074922-092613-CM-MW-1-Z2	EPA 5030B/8015B	GCV/4513		
60154273003	GW-074922-092613-CM-MW-1-DUP	EPA 5030B/8015B	GCV/4513		
60154781001	GW-074922-100213-CM-MW-1-Z3	EPA 5030B/8015B	GCV/4518		
60154273001	GW-074922-092613-CM-MW-1-Z1	EPA 3010	MPRP/24558	EPA 6010	ICP/19111
60154273002	GW-074922-092613-CM-MW-1-Z2	EPA 3010	MPRP/24558	EPA 6010	ICP/19111
60154273003	GW-074922-092613-CM-MW-1-DUP	EPA 3010	MPRP/24558	EPA 6010	ICP/19111
60154781001	GW-074922-100213-CM-MW-1-Z3	EPA 3010	MPRP/24679	EPA 6010	ICP/19181
60154273001	GW-074922-092613-CM-MW-1-Z1	EPA 5030B/8260	MSV/56777		
60154273002	GW-074922-092613-CM-MW-1-Z2	EPA 5030B/8260	MSV/56777		
60154273003	GW-074922-092613-CM-MW-1-DUP	EPA 5030B/8260	MSV/56777		
60154781001	GW-074922-100213-CM-MW-1-Z3	EPA 5030B/8260	MSV/56842		
60154273001	GW-074922-092613-CM-MW-1-Z1	SM 2320B	WET/44162		
60154273002	GW-074922-092613-CM-MW-1-Z2	SM 2320B	WET/44162		
60154273003	GW-074922-092613-CM-MW-1-DUP	SM 2320B	WET/44162		
60154781001	GW-074922-100213-CM-MW-1-Z3	SM 2320B	WET/43881		
60154273001	GW-074922-092613-CM-MW-1-Z1	SM 2540C	WET/43754		
60154273002	GW-074922-092613-CM-MW-1-Z2	SM 2540C	WET/43754		
60154273003	GW-074922-092613-CM-MW-1-DUP	SM 2540C	WET/43754		
60154781001	GW-074922-100213-CM-MW-1-Z3	SM 2540C	WET/43892		
60154273001	GW-074922-092613-CM-MW-1-Z1	SM 4500-S-2 D	WET/43785		
60154273002	GW-074922-092613-CM-MW-1-Z2	SM 4500-S-2 D	WET/43785		
60154273003	GW-074922-092613-CM-MW-1-DUP	SM 4500-S-2 D	WET/43785		
60154781001	GW-074922-100213-CM-MW-1-Z3	SM 4500-S-2 D	WET/44025		
60154273001	GW-074922-092613-CM-MW-1-Z1	EPA 300.0	WETA/26546		
60154273002	GW-074922-092613-CM-MW-1-Z2	EPA 300.0	WETA/26546		
60154273003	GW-074922-092613-CM-MW-1-DUP	EPA 300.0	WETA/26546		
60154781001	GW-074922-100213-CM-MW-1-Z3	EPA 300.0	WETA/26660		

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ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	384922	Job #:	23049	IS-63575
Sample Name/Number:	GW-074922-092613-CM-MW-1-Z1			
Company:	Pace Analytical			
Date Sampled:	9/26/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 30 / SJ 32-8			
Location:	San Juan County, NM			
Formation/Depth:				
Sampling Point:				
Date Received:	9/30/2013	Date Reported:	10/11/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.23			
Oxygen	23.75			
Nitrogen	66.85			
Carbon Dioxide	3.91			
Methane	4.15			
Ethane	0.100			
Ethylene	0.0012			
Propane	0.0049			
Propylene	0.0004			
Iso-butane	nd			
N-butane	0.0008			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.75
Concentration of methane in water = 1.7 cc/L ; 1.1 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	384923	Job #:	23049	IS-63575
Sample Name/Number:	GW-074922-092613-CM-MW-1-Z2			
Company:	Pace Analytical			
Date Sampled:	9/26/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 30 / SJ 32-8			
Location:	San Juan County, NM			
Formation/Depth:				
Sampling Point:				
Date Received:	9/30/2013	Date Reported:	10/11/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.690			
Oxygen	13.18			
Nitrogen	83.19			
Carbon Dioxide	2.54			
Methane	0.380			
Ethane	0.0147			
Ethylene	0.0006			
Propane	0.0015			
Propylene	0.0002			
Iso-butane	nd			
N-butane	0.0002			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.46
Concentration of methane in water = 0.35 cc/L ; 0.23 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	384924	Job #:	23049	IS-63575
Sample Name/Number:	GW-074922-092613-CM-MW-1-DUP			
Company:	Pace Analytical			
Date Sampled:	9/26/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 30 / SJ 32-8			
Location:	San Juan County, NM			
Formation/Depth:				
Sampling Point:				
Date Received:	9/30/2013	Date Reported:	10/11/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.17			
Oxygen	23.66			
Nitrogen	68.57			
Carbon Dioxide	3.13			
Methane	3.37			
Ethane	0.0890			
Ethylene	0.0008			
Propane	0.0046			
Propylene	nd			
Iso-butane	nd			
N-butane	0.0008			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.75
Concentration of methane in water = 1.8 cc/L ; 1.2 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	386079	Job #:	23112	IS-63575
Sample Name/Number:	GW-074922-100213-CM-MW-1-Z3			
Company:	Pace Analytical			
Date Sampled:	10/02/2013			
Container:	IsoBag			
Field/Site Name:	074922 / Area 30 / SJ 32-8			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	10/04/2013	Date Reported:	10/14/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.112			
Oxygen	2.45			
Nitrogen	96.70			
Carbon Dioxide	0.67			
Methane	0.0676			
Ethane	0.0017			
Ethylene	nd			
Propane	0.0002			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.23 cc/L ; 0.16 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

1308 Parkland Court Champaign, IL 61821 • (877) 362-4190 • www.isotechlabs.com

Send Data and Invoice to

Name: Christine Mathews
Company: CRA
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-269-0088
Fax:
Email: cmathews@craworld.com

Project: 074922-San Juan 32-8 30 Area
Purchase Order #:
Location: San Juan County, NM
Sampled By: CM, BC
Circle one: Standard
Priority
Rush

Sample Description

~~Container Number~~	Sample Identification	Date Sampled	Time	Analysis Requested: Oxygen & Hydrogen isotopes	Analysis Requested: dissolved methane		Comments
GW-074922-	092613-CM-MW-1-Z1	9/26/13	1145	X	X	\	
GW-074922	092613-CM-MW-1-Z2	9/26/13	1525	X	X		
GW-074922-	092613-CM-MW-1-DUP	9/26/13	1205	X	X		

* Please report to Alice Flanagan
Pace Lenexa 913-563-1409

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	[signature]	CRA	9/27/13	1500
Received by	Peter Cabelo	Isotech	9/30/13	0845
Relinquished by				
Received by				
Relinquished by				
Received by				

ISOTECH
ISOTECH LABORATORIES INC
1308 Parkland Court Champaign, IL 61821 • (877) 362-4190 • www.isotechlabs.com

Send Data and Invoice to

Name: Christine Mathews
Company: CRA
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-269-0088
Fax:
Email: cmathews@craworld.com

Project: 074922- San Juan 32-8 30 Area
Purchase Order #: Bill to Alice Flanagan@ Pace
Location: San Juan County, NM
Sampled By: CM, JW
Circle one: (Standard) Priority Rush

Sample Description

~~Container Number~~	Sample Identification	Date Sampled	Time	Analysis Requested: Oxygen & hydrogen isotopes	Analysis Requested: Dissolved methane		Comments
SW-074922-00213	CM-MW1-Z3	10/2/13	1300	X	X		

* Please report and bill to Alice Flanagan@ Pace Lenexa 913-563-1409

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	Christine Mathews	CRA	10/3/13	1630
Received by	Pete Caleb	Isotech	10/4/13	0830
Relinquished by				
Received by				
Relinquished by				
Received by				

1

AirTECHNOLOGY *Laboratories, Inc.*

October 25, 2013

ACLASS ACCREDITED DoD ELAP
ADE-1461
EPA Methods TO-3, TO14A,TO15 SIM & Scan, ASTM D1946

nelac
LA Cert 04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175
TX Cert T104704450-09-TX
EPA Methods TO14A, TO15

Pace Analytical
ATTN: Alice Flanagan
9608 Loiret Blvd.
Lenexa, KS 66219

REVISED LABORATORY TEST RESULTS

Project Reference: 60154295; 074922 San Juan 32-8 30 AREA
Lab Number: E093002-01/04

Enclosed are REVISED results for sample(s) received 9/30/13 by Air Technology Laboratories. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- This revision reflects the results of the re-analysis of sample E093002-01 for ASTM D1946 and TO3.
- This revision corrects the transposition error of ASTM D1946 results for samples E093002-03 and -04 which were transposed in the original results.
- This revision replaces in its entirety the revised report dated October 17, 2013.
- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com
Note: The cover letter is an integral part of this analytical report.

Chain of Custody

E093002-01/04

Pace Analytical®
www.pacelabs.com

Workorder: 60154295 **Workorder Name:** 074922 San Juan 32-8 30 AREA **Results Requested** 10/3/2013

Report / Invoice To	Subcontract To
Alice Flanagan Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665 Email: alice.flanagan@pacelabs.com	Air Technology Laboratories, City of Industry, CA 91748

	Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: SilcoCan						Requested Analysis: EPA TO15 Full Scan	ASTMD1946 Methane,BTU,Acetylene	EPA 15/16 Hydrogen Sulfide	EPA TO3 GAS	EPA TO3 Diesel								LAB USE ONLY
01	1	A-074922-092713-CM-DUP	9/27/2013 10:50	60154295001	Air	1						X	X	x	x	x								
02	2	A-074922-092713-CM-MW-2	9/27/2013 11:35	60154295002	Air	1						X	X	x	x	X								
03	3	A-074922-092713-CM-MW-3	9/27/2013 11:20	60154295003	Air	1						X	x	x	X	X								
04	4	A-074922-092713-CM-MW-4	9/27/2013 10:55	60154295004	Air	1						x	x	x	x	X								
	5																							

Transfers	Released By	Date/Time	Received By	Date/Time
1			[signature]	9/28/13 0930
2				
3				

Comments

Cooler Temperature on Receipt °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

Client: Pace Analytical
Attn: Alice Flanagan
Project Name: San Juan 32-8 30 Area
Project No.: 074922
Date Received: 09/28/13
Matrix: Air
Reporting Units: % v/v

ASTM D1946/3588

Lab No.:	E093002-01		E093002-02		E093002-03		E093002-04	
Client Sample I.D.:	A-074922-092713-CM-DUP		A-074922-092713-CM-MW-2		A-074922-092713-CM-MW-3		A-074922-092713-CM-MW-4	
Date Sampled:	09/27/13		09/27/13		09/27/13		09/27/13	
Date Analyzed:	10/08/13		10/08/13		10/08/13		10/08/13	
QC Batch No.:	131008GC8A1		131008GC8A1		131007GC8A1		131007GC8A1	
Analyst Initials:	MJ		MJ		MJ		MJ	
Dilution Factor:	3.2		3.4		3.0		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Methane	61	0.0032	74	0.0034	25	0.0030	58	0.0032
Ethane	0.93	0.0032	1.1	0.0034	0.37	0.0030	0.85	0.0032
Acetylene	ND	0.0032	ND	0.0034	ND	0.0030	ND	0.0032
Net Heating Value (BTU/ft3)	566	3.2	690	3.4	236	3.0	542	3.2
Gross Heating Value (BTU/ft3)	628	3.2	767	3.4	262	3.0	602	3.2

ND = Not Detected (below RL)
RL = Reporting Limit
BTU content based on methane and acetylene content only

Reviewed/Approved By: _____ **Date** 10-25-13

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 131008GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date Analyzed:	10/08/13		10/08/13		10/08/13			
Analyst Initials:	MJ		MJ		MJ			
Datafile:	08oct018		08oct009/014		08oct010/015			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	**Results**	**RL**	**% Rec.**	**Criteria**	**% Rec.**	**Criteria**	**%RPD**	**Criteria**
Methane	ND	0.0010	101	70-130%	100	70-130%	0.5	<30
Ethane	ND	0.0010	103	70-130%	101	70-130%	1.3	<30
Acetylene	ND	0.0010	100	70-130%	98	70-130%	1.8	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 10-25-13

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

820

Client: Pace Analytical
Attn: Alice Flanagan
Project Name: 074922 San Juan 32-8 30 AREA
Project No.: 60154295
Date Received: 09/28/13
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	E093002-01		E093002-02		E093002-03		E093002-04	
Client Sample I.D.:	A-074922-092713-CM-DUP / 60154295001		A-074922-092713-CM-MW-2 / 60154295002		A-074922-092713-CM-MW-3 / 60154295003		A-074922-092713-CM-MW-4 / 60154295004	
Date Sampled:	09/27/13		09/27/13		09/27/13		09/27/13	
Date Analyzed:	10/04/13		10/04/13		10/04/13		10/04/13	
QC Batch No.:	131004MS2A1		131004MS2A1		131004MS2A1		131004MS2A1	
Analyst Initials:	DT		DT		DT		DT	
Dilution Factor:	63		59		32		63	
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Dichlorodifluoromethane (12)	ND	63	ND	59	ND	32	ND	63
Chloromethane	4,300	130	5,400	120	2,100	63	4,000	130
1,2-Cl-1,1,2,2-F ethane (114)	ND	63	ND	59	ND	32	ND	63
Vinyl Chloride	ND	63	ND	59	ND	32	ND	63
Bromomethane	ND	63	ND	59	ND	32	ND	63
Chloroethane	ND	63	ND	59	ND	32	ND	63
Trichlorofluoromethane (11)	ND	63	ND	59	ND	32	ND	63
1,1-Dichloroethene	ND	63	ND	59	ND	32	ND	63
Carbon Disulfide	ND	320	ND	300	ND	160	ND	320
1,1,2-Cl 1,2,2-F ethane (113)	ND	63	ND	59	ND	32	ND	63
Acetone	ND	320	ND	300	420	160	ND	320
Methylene Chloride	ND	63	ND	59	ND	32	ND	63
t-1,2-Dichloroethene	ND	63	ND	59	ND	32	ND	63
1,1-Dichloroethane	ND	63	ND	59	ND	32	ND	63
Vinyl Acetate	ND	320	ND	300	ND	160	ND	320
c-1,2-Dichloroethene	ND	63	ND	59	ND	32	ND	63
2-Butanone	ND	63	ND	59	ND	32	ND	63
t-Butyl Methyl Ether (MTBE)	ND	63	ND	59	ND	32	ND	63
Chloroform	ND	63	ND	59	ND	32	ND	63
1,1,1-Trichloroethane	ND	63	ND	59	ND	32	ND	63
Carbon Tetrachloride	ND	63	ND	59	ND	32	ND	63
Benzene	1,400	63	ND	59	650	32	1,100	63
1,2-Dichloroethane	ND	63	ND	59	ND	32	ND	63
Trichloroethene	ND	63	ND	59	ND	32	ND	63
1,2-Dichloropropane	ND	63	ND	59	ND	32	ND	63
Bromodichloromethane	ND	63	ND	59	ND	32	ND	63
c-1,3-Dichloropropene	ND	63	ND	59	ND	32	ND	63
4-Methyl-2-Pentanone	ND	63	ND	59	ND	32	ND	63
Toluene	ND	63	ND	59	190	32	ND	63
t-1,3-Dichloropropene	ND	63	ND	59	ND	32	ND	63
1,1,2-Trichloroethane	ND	63	ND	59	ND	32	ND	63

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Alice Flanagan
Project Name: 074922 San Juan 32-8 30 AREA
Project No.: 60154295
Date Received: 09/28/13
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	E093002-01		E093002-02		E093002-03		E093002-04	
Client Sample I.D.:	A-074922-092713-CM-DUP / 60154295001		A-074922-092713-CM-MW-2 / 60154295002		A-074922-092713-CM-MW-3 / 60154295003		A-074922-092713-CM-MW-4 / 60154295004	
Date Sampled:	09/27/13		09/27/13		09/27/13		09/27/13	
Date Analyzed:	10/04/13		10/04/13		10/04/13		10/04/13	
QC Batch No.:	131004MS2A1		131004MS2A1		131004MS2A1		131004MS2A1	
Analyst Initials:	DT		DT		DT		DT	
Dilution Factor:	63		59		32		63	
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Tetrachloroethene	ND	63	ND	59	ND	32	ND	63
2-Hexanone	ND	63	ND	59	ND	32	ND	63
Dibromochloromethane	ND	63	ND	59	ND	32	ND	63
1,2-Dibromoethane	ND	63	ND	59	ND	32	ND	63
Chlorobenzene	ND	63	ND	59	ND	32	ND	63
Ethylbenzene	ND	63	ND	59	ND	32	ND	63
p,&m-Xylene	ND	63	ND	59	ND	32	ND	63
o-Xylene	ND	63	ND	59	ND	32	ND	63
Styrene	ND	63	ND	59	ND	32	ND	63
Bromoform	ND	63	ND	59	ND	32	ND	63
1,1,2,2-Tetrachloroethane	ND	130	ND	120	ND	63	ND	130
Benzyl Chloride	ND	63	ND	59	ND	32	ND	63
4-Ethyl Toluene	ND	63	ND	59	ND	32	ND	63
1,3,5-Trimethylbenzene	ND	130	ND	120	ND	63	ND	130
1,2,4-Trimethylbenzene	ND	130	ND	120	ND	63	ND	130
1,3-Dichlorobenzene	ND	63	ND	59	ND	32	ND	63
1,4-Dichlorobenzene	ND	63	ND	59	ND	32	ND	63
1,2-Dichlorobenzene	ND	63	ND	59	ND	32	ND	63
1,2,4-Trichlorobenzene	ND	130	ND	120	ND	63	ND	130
Hexachlorobutadiene	ND	63	ND	59	ND	32	ND	63

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 10/25/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 131004MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date Analyzed:	10/04/13		10/04/13		10/04/13						
Data File ID:	04OCT010.D		04OCT008.D		04OCT009.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	10.7	107	10.6	106	1.0	70	130	30	Pass
Methylene Chloride	0.0	10.0	10.7	107	10.6	106	0.9	70	130	30	Pass
Trichloroethene	0.0	10.0	10.4	104	10.2	102	1.5	70	130	30	Pass
Toluene	0.0	10.0	10.5	105	10.2	102	2.8	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	10.5	105	10.6	106	0.6	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 10/25/13

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Pace Analytical
Attn: Alice Flanagan
Project Name: 074922 San Juan 32-8 30 AREA
Project No.: 60154295
Date Received: 09/28/13
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	E093002-01		E093002-02		E093002-03		E093002-04	
Client Sample I.D.:	A-074922-092713-CM-DUP / 60154295001		A-074922-092713-CM-MW-2 / 60154295002		A-074922-092713-CM-MW-3 / 60154295003		A-074922-092713-CM-MW-4 / 60154295004	
Date Sampled:	09/27/13		09/27/13		09/27/13		09/27/13	
Date Analyzed:	10/02/13		10/02/13		10/02/13		10/02/13	
QC Batch No.:	131002GC3A1		131002GC3A1		131002GC3A1		131002GC3A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	3.2		3.4		3.0		3.2	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	ND	0.63	ND	0.67	ND	0.59	ND	0.63

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 10/25/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 131002GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date Analyzed:	10/02/13		10/02/13		10/02/13			
Analyst Initials:	VM		VM		VM			
Datafile:	02OCT003		02OCT001		02OCT002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	93	70-130%	87	70-130%	7.0	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 10/25/13
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Pace Analytical
Attn: Alice Flanagan
Project Name: 074922 San Juan 32-8 30 AREA
Project No.: 60154295
Date Received: 09/28/13
Matrix: Air
Reporting Units: ppmv

EPA METHOD TO3

Lab No.:	E093002-01		E093002-02		E093002-03		E093002-04	
Client Sample I.D.:	A-074922-092713-CM-DUP / 60154295001		A-074922-092713-CM-MW-2 / 60154295002		A-074922-092713-CM-MW-3 / 60154295003		A-074922-092713-CM-MW-4 / 60154295004	
Date Sampled:	09/27/13		09/27/13		09/27/13		09/27/13	
Date Analyzed:	10/22/13		10/04/13		10/04/13		10/04/13	
QC Batch No.:	131022GC11A1		131004GC11A1		131004GC11A1		131004GC11A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	44		34		3.0		32	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
TVOC as Gasoline	800	44	1,300	34	360	3.0	860	32
TVOC as Diesel	2,400	44	3,800	34	1,100	3.0	2,600	32

ND = Not Detected (below RL)
RL = Reporting Limit
Note: The chromatographic patterns are not indicative of gasoline or diesel.

Reviewed/Approved By: _____ Date 10/25/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 131004GC11A1
Matrix: Air
Reporting Units: ppmv

EPA Method TO3
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK		LCS		LCSD					
Date Analyzed:	10/04/13		10/04/13		10/04/13					
Analyst Initials:	VM		VM		VM					
Dilution Factor:	1.0		1.0		1.0					
ANALYTE	Result ppmv	RL ppmv	Result ppmv	% Rec.	Result ppmv	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
TVOC as Diesel	ND	1.0	88	96	82	90	6.5	70	130	25

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 10/25/13
Mark Johnson
Operations Manager

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18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 131004GC11A1
Matrix: Air
Reporting Units: ppmv

EPA Method TO3
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK		LCS		LCSD					
Date Analyzed:	10/04/13		10/04/13		10/04/13					
Analyst Initials:	VM		VM		VM					
Dilution Factor:	1.0		1.0		1.0					
ANALYTE	Result ppmv	RL ppmv	Result ppmv	% Rec.	Result ppmv	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
TVOC as Gasoline	ND	1.0	91	99	89	97	2.6	70	130	25

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 10/25/13
Mark Johnson
Operations Manager

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AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 131022GC11A1
Matrix: Air
Reporting Units: ppmv

EPA Method TO3
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK		LCS		LCSD					
Date Analyzed:	10/22/13		10/22/13		10/22/13					
Analyst Initials:	VM		VM		VM					
Dilution Factor:	1.0		1.0		1.0					
ANALYTE	Result ppmv	RL ppmv	Result ppmv	% Rec.	Result ppmv	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
TVOC as Gasoline	ND	1.0	83	90	81	89	2.0	70	130	25

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 10/25/13
Mark Johnson
Operations Manager

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AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 131022GC11A1
Matrix: Air
Reporting Units: ppmv

EPA Method TO3
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK		LCS		LCSD					
Date Analyzed:	10/22/13		10/22/13		10/22/13					
Analyst Initials:	VM		VM		VM					
Dilution Factor:	1.0		1.0		1.0					
ANALYTE	Result ppmv	RL ppmv	Result ppmv	% Rec.	Result ppmv	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
TVOC as Diesel	ND	1.0	82	89	77	84	6.1	70	130	25

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 10/25/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

830

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

October 10, 2013

Christine Matthews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60154295

Dear Christine Matthews:
Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Angela Bown, COP Conestoga-Rovers & Associa
Jeff Walker, COP Conestoga-Rovers & Associa

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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 074922 San Juan 32-8 30 AREA
Pace Project No.: 60154295

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60154295001	A-074922-092713-CM-DUP	Air	09/27/13 10:50	09/28/13 09:30
60154295002	A-074922-092713-CM-MW-2	Air	09/27/13 11:35	09/28/13 09:30
60154295003	A-074922-092713-CM-MW-3	Air	09/27/13 11:20	09/28/13 09:30
60154295004	A-074922-092713-CM-MW-4	Air	09/27/13 10:55	09/28/13 09:30

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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project:
Pace Project No.:

Method:
Description:
Client:
Date:

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

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Air TECHNOLOGY Laboratories, Inc.

October 9, 2013

DoD ELAP
ADE-1461
EPA Methods TO-3, TO14A,TO15 SIM & Scan, ASTM D1946

LA Cert 04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175
TX Cert T104704450-09-TX
EPA Methods TO14A, TO15

Pace Analytical
ATTN: Alice Flanagan
9608 Loiret Blvd.
Lenexa, KS 66219

LABORATORY TEST RESULTS

Project Reference: 60154295; 074922 San Juan 32-8 30 AREA
Lab Number: E093002-01/04

Enclosed are results for sample(s) received 9/30/13 by Air Technology Laboratories. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Chain of Custody

E093002-01/04

Pace Analytical®
www.pacelabs.com

Workorder: 60154295 **Workorder Name:** 074922 San Juan 32-8 30 AREA **Results Requested** 10/3/2013

Report / Invoice To	Subcontract To
Alice Flanagan Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665 Email: alice.flanagan@pacelabs.com	Air Technology Laboratories, City of Industry, CA 91748

					Preserved Containers						Requested Analysis												
Item	Sample ID	Collect Date/Time	Lab ID	Matrix	SilcoCan						EPA TO15 Full Scan	ASTMD1946 Methane,BTU,Acetylene	EPA 15/16 Hydrogen Sulfide	EPA TO3 GAS	EPA TO3 Diesel								LAB USE ONLY
01 1	A-074922-092713-CM-DUP	9/27/2013 10:50	60154295001	Air	1						X	X	x	x	x								
02 2	A-074922-092713-CM-MW-2	9/27/2013 11:35	60154295002	Air	1						X	X	x	x	X								
03 3	A-074922-092713-CM-MW-3	9/27/2013 11:20	60154295003	Air	1						X	x	x	X	X								
04 4	A-074922-092713-CM-MW-4	9/27/2013 10:55	60154295004	Air	1						x	x	x	x	X								
5																							

Transfers	Released By	Date/Time	Received By	Date/Time
1			[signature]	9/28/13 0930
2				
3				

Comments

Cooler Temperature on Receipt °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

Client: Pace Analytical
Attn: Alice Flanagan
Project Name: 074922 San Juan 32-8 30 AREA
Project No.: 60154295
Date Received: 09/28/13
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	E093002-01		E093002-02		E093002-03		E093002-04	
Client Sample I.D.:	A-074922-092713-CM-DUP / 60154295001		A-074922-092713-CM-MW-2 / 60154295002		A-074922-092713-CM-MW-3 / 60154295003		A-074922-092713-CM-MW-4 / 60154295004	
Date Sampled:	09/27/13		09/27/13		09/27/13		09/27/13	
Date Analyzed:	10/04/13		10/04/13		10/04/13		10/04/13	
QC Batch No.:	131004MS2A1		131004MS2A1		131004MS2A1		131004MS2A1	
Analyst Initials:	DT		DT		DT		DT	
Dilution Factor:	63		59		32		63	
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Dichlorodifluoromethane (12)	ND	63	ND	59	ND	32	ND	63
Chloromethane	4,300	130	5,400	120	2,100	63	4,000	130
1,2-Cl-1,1,2,2-F ethane (114)	ND	63	ND	59	ND	32	ND	63
Vinyl Chloride	ND	63	ND	59	ND	32	ND	63
Bromomethane	ND	63	ND	59	ND	32	ND	63
Chloroethane	ND	63	ND	59	ND	32	ND	63
Trichlorofluoromethane (11)	ND	63	ND	59	ND	32	ND	63
1,1-Dichloroethene	ND	63	ND	59	ND	32	ND	63
Carbon Disulfide	ND	320	ND	300	ND	160	ND	320
1,1,2-Cl 1,2,2-F ethane (113)	ND	63	ND	59	ND	32	ND	63
Acetone	ND	320	ND	300	420	160	ND	320
Methylene Chloride	ND	63	ND	59	ND	32	ND	63
t-1,2-Dichloroethene	ND	63	ND	59	ND	32	ND	63
1,1-Dichloroethane	ND	63	ND	59	ND	32	ND	63
Vinyl Acetate	ND	320	ND	300	ND	160	ND	320
c-1,2-Dichloroethene	ND	63	ND	59	ND	32	ND	63
2-Butanone	ND	63	ND	59	ND	32	ND	63
t-Butyl Methyl Ether (MTBE)	ND	63	ND	59	ND	32	ND	63
Chloroform	ND	63	ND	59	ND	32	ND	63
1,1,1-Trichloroethane	ND	63	ND	59	ND	32	ND	63
Carbon Tetrachloride	ND	63	ND	59	ND	32	ND	63
Benzene	1,400	63	ND	59	650	32	1,100	63
1,2-Dichloroethane	ND	63	ND	59	ND	32	ND	63
Trichloroethene	ND	63	ND	59	ND	32	ND	63
1,2-Dichloropropane	ND	63	ND	59	ND	32	ND	63
Bromodichloromethane	ND	63	ND	59	ND	32	ND	63
c-1,3-Dichloropropene	ND	63	ND	59	ND	32	ND	63
4-Methyl-2-Pentanone	ND	63	ND	59	ND	32	ND	63
Toluene	ND	63	ND	59	190	32	ND	63
t-1,3-Dichloropropene	ND	63	ND	59	ND	32	ND	63

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Alice Flanagan
Project Name: 074922 San Juan 32-8 30 AREA
Project No.: 60154295
Date Received: 09/28/13
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	E093002-01		E093002-02		E093002-03		E093002-04	
Client Sample I.D.:	A-074922-092713-CM-DUP / 60154295001		A-074922-092713-CM-MW-2 / 60154295002		A-074922-092713-CM-MW-3 / 60154295003		A-074922-092713-CM-MW-4 / 60154295004	
Date Sampled:	09/27/13		09/27/13		09/27/13		09/27/13	
Date Analyzed:	10/04/13		10/04/13		10/04/13		10/04/13	
QC Batch No.:	131004MS2A1		131004MS2A1		131004MS2A1		131004MS2A1	
Analyst Initials:	DT		DT		DT		DT	
Dilution Factor:	63		59		32		63	
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
1,1,2-Trichloroethane	ND	63	ND	59	ND	32	ND	63
Tetrachloroethene	ND	63	ND	59	ND	32	ND	63
2-Hexanone	ND	63	ND	59	ND	32	ND	63
Dibromochloromethane	ND	63	ND	59	ND	32	ND	63
1,2-Dibromoethane	ND	63	ND	59	ND	32	ND	63
Chlorobenzene	ND	63	ND	59	ND	32	ND	63
Ethylbenzene	ND	63	ND	59	ND	32	ND	63
p,&m-Xylene	ND	63	ND	59	ND	32	ND	63
o-Xylene	ND	63	ND	59	ND	32	ND	63
Styrene	ND	63	ND	59	ND	32	ND	63
Bromoform	ND	63	ND	59	ND	32	ND	63
1,1,2,2-Tetrachloroethane	ND	130	ND	120	ND	63	ND	130
Benzyl Chloride	ND	63	ND	59	ND	32	ND	63
4-Ethyl Toluene	ND	63	ND	59	ND	32	ND	63
1,3,5-Trimethylbenzene	ND	130	ND	120	ND	63	ND	130
1,2,4-Trimethylbenzene	ND	130	ND	120	ND	63	ND	130
1,3-Dichlorobenzene	ND	63	ND	59	ND	32	ND	63
1,4-Dichlorobenzene	ND	63	ND	59	ND	32	ND	63
1,2-Dichlorobenzene	ND	63	ND	59	ND	32	ND	63
1,2,4-Trichlorobenzene	ND	130	ND	120	ND	63	ND	130
Hexachlorobutadiene	ND	63	ND	59	ND	32	ND	63

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 10/9/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch #: 131004MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date Analyzed:	10/04/13		10/04/13		10/04/13						
Data File ID:	04OCT010.D		04OCT008.D		04OCT009.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	10.7	107	10.6	106	1.0	70	130	30	Pass
Methylene Chloride	0.0	10.0	10.7	107	10.6	106	0.9	70	130	30	Pass
Trichloroethene	0.0	10.0	10.4	104	10.2	102	1.5	70	130	30	Pass
Toluene	0.0	10.0	10.5	105	10.2	102	2.8	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	10.5	105	10.6	106	0.6	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 10/9/13

Mark Johnson
Operations Manager

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18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Alice Flanagan
Project Name: 074922 San Juan 32-8 30 AREA
Project No.: 60154295
Date Received: 09/28/13
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	E093002-01		E093002-02		E093002-03		E093002-04	
Client Sample I.D.:	A-074922-092713-CM-DUP / 60154295001		A-074922-092713-CM-MW-2 / 60154295002		A-074922-092713-CM-MW-3 / 60154295003		A-074922-092713-CM-MW-4 / 60154295004	
Date Sampled:	09/27/13		09/27/13		09/27/13		09/27/13	
Date Analyzed:	10/02/13		10/02/13		10/02/13		10/02/13	
QC Batch No.:	131002GC3A1		131002GC3A1		131002GC3A1		131002GC3A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	3.2		3.4		3.0		3.2	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	ND	0.63	ND	0.67	ND	0.59	ND	0.63

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 10/9/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 131002GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date Analyzed:	10/02/13		10/02/13		10/02/13			
Analyst Initials:	VM		VM		VM			
Datafile:	02OCT003		02OCT001		02OCT002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	93	70-130%	87	70-130%	7.0	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 10/9/13
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Pace Analytical
Attn: Alice Flanagan
Project Name: 074922 San Juan 32-8 30 AREA
Project No.: 60154295
Date Received: 09/28/13
Matrix: Air
Reporting Units: ppmv

EPA METHOD TO3

Lab No.:	E093002-01		E093002-02		E093002-03		E093002-04	
Client Sample I.D.:	A-074922-092713-CM-DUP / 60154295001		A-074922-092713-CM-MW-2 / 60154295002		A-074922-092713-CM-MW-3 / 60154295003		A-074922-092713-CM-MW-4 / 60154295004	
Date Sampled:	09/27/13		09/27/13		09/27/13		09/27/13	
Date Analyzed:	10/04/13		10/04/13		10/04/13		10/04/13	
QC Batch No.:	131004GC11A1		131004GC11A1		131004GC11A1		131004GC11A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	32		34		3.0		32	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
TVOC as Gasoline	1,300	32	1,300	34	360	3.0	860	32
TVOC as Diesel	3,900	32	3,800	34	1,100	3.0	2,600	32

ND = Not Detected (below RL)
RL = Reporting Limit
Note: The chromatographic patterns are not indicative of gasoline or diesel.

Reviewed/Approved By: _____ Date 10/9/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 131004GC11A1
Matrix: Air
Reporting Units: ppmv

EPA Method TO3
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK		LCS		LCSD					
Date Analyzed:	10/04/13		10/04/13		10/04/13					
Analyst Initials:	VM		VM		VM					
Dilution Factor:	1.0		1.0		1.0					
ANALYTE	Result ppmv	RL ppmv	Result ppmv	% Rec.	Result ppmv	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
TVOC as Gasoline	ND	1.0	91	99	89	97	2.6	70	130	25

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 10/9/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 131004GC11A1
Matrix: Air
Reporting Units: ppmv

EPA Method TO3
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK		LCS		LCSD					
Date Analyzed:	10/04/13		10/04/13		10/04/13					
Analyst Initials:	VM		VM		VM					
Dilution Factor:	1.0		1.0		1.0					
ANALYTE	Result ppmv	RL ppmv	Result ppmv	% Rec.	Result ppmv	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
TVOC as Diesel	ND	1.0	88	96	82	90	6.5	70	130	25

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 10/5/13
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Pace Analytical
Attn: Alice Flanagan
Project Name: San Juan 32-8 30 Area
Project No.: 074922
Date Received: 09/28/13
Matrix: Air
Reporting Units: % v/v

ASTM D1946/3588

Lab No.:	E093002-01		E093002-02		E093002-03		E093002-04	
Client Sample I.D.:	A-074922-092713-CM-DUP		A-074922-092713-CM-MW-2		A-074922-092713-CM-MW-3		A-074922-092713-CM-MW-4	
Date Sampled:	09/27/13		09/27/13		09/27/13		09/27/13	
Date Analyzed:	10/08/13		10/08/13		10/08/13		10/08/13	
QC Batch No.:	131008GC8A1		131008GC8A1		131007GC8A1		131007GC8A1	
Analyst Initials:	MJ		MJ		MJ		MJ	
Dilution Factor:	3.2		3.4		3.0		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Methane	61	0.0032	74	0.0034	58	0.0030	25	0.0032
Acetylene	ND	0.0032	ND	0.0034	ND	0.0030	ND	0.0032
Net Heating Value (BTU/ft3)	552	3.2	673	3.4	529	3.0	230	3.2
Gross Heating Value (BTU/ft3)	613	3.2	748	3.4	588	3.0	256	3.2

ND = Not Detected (below RL)
RL = Reporting Limit
BTU content based on methane and acetylene content only

Reviewed/Approved By: _____ **Date** 10-9-13

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 131007GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date Analyzed:	10/07/13		10/07/13		10/07/13			
Analyst Initials:	MJ		MJ		MJ			
Datafile:	07oct015		07oct008		07oct009			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	**Results**	**RL**	**% Rec.**	**Criteria**	**% Rec.**	**Criteria**	**%RPD**	**Criteria**
Methane	ND	0.0010	89	70-130%	89	70-130%	0.2	<30
Acetylene	ND	0.0010	97	70-130%	96	70-130%	1.3	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ **Date:** 10-9-13

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 131008GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date Analyzed:	10/08/13		10/08/13		10/08/13			
Analyst Initials:	MJ		MJ		MJ			
Datafile:	08oct018		08oct009		08oct010			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	**Results**	**RL**	**% Rec.**	**Criteria**	**% Rec.**	**Criteria**	**%RPD**	**Criteria**
Methane	ND	0.0010	101	70-130%	100	70-130%	0.5	<30
Acetylene	ND	0.0010	100	70-130%	98	70-130%	1.8	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ **Date:** 10-9-13

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 384918 Job #: 23048 IS-63575 Co. Job#:
Sample Name: A-074922-092713-CM-DUP Co. Lab#:
Company: Pace Analytical
Date Sampled: 9/27/2013
Container: Cali-5-Bond Bag
Field/Site Name: 074922 / Area 30 / SJ 32-8
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Received: 9/30/2013 Date Reported: 10/10/2013

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.411			
Oxygen	0.65			
Nitrogen	34.90			
Carbon Dioxide	0.25			
Methane	62.61	-37.33	-172.9	
Ethane	1.02			
Ethylene	nd			
Propane	0.114			
Propylene	nd			
Iso-butane	0.0234			
N-butane	0.0109			
Iso-pentane	0.0049			
N-pentane	0.0015			
Hexanes +	0.0027			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 657
Specific gravity, calculated: 0.714

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 384919 Job #: 23048 IS-63575 Co. Job#:
Sample Name: A-074922-092713-CM-MW-2 Co. Lab#:
Company: Pace Analytical
Date Sampled: 9/27/2013
Container: Cali-5-Bond Bag
Field/Site Name: 074922 / Area 30 / SJ 32-8
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Received: 9/30/2013 Date Reported: 10/10/2013

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.154			
Oxygen	2.29			
Nitrogen	13.07			
Carbon Dioxide	1.14			
Methane	81.74	-36.58	-174.3	
Ethane	1.37			
Ethylene	nd			
Propane	0.164			
Propylene	nd			
Iso-butane	0.0364			
N-butane	0.0170			
Iso-pentane	0.0081			
N-pentane	0.0024			
Hexanes +	0.0048			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 859
Specific gravity, calculated: 0.642

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 384920 Job #: 23048 IS-63575 Co. Job#:
Sample Name: A-074922-092713-CM-MW-3 Co. Lab#:
Company: Pace Analytical
Date Sampled: 9/27/2013
Container: Cali-5-Bond Bag
Field/Site Name: 074922 / Area 30 / SJ 32-8
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Received: 9/30/2013 Date Reported: 10/10/2013

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.184			
Oxygen	1.49			
Nitrogen	15.68			
Carbon Dioxide	0.91			
Methane	80.17	-36.53	-175.8	
Ethane	1.34			
Ethylene	nd			
Propane	0.158			
Propylene	nd			
Iso-butane	0.0342			
N-butane	0.0159			
Iso-pentane	0.0077			
N-pentane	0.0024			
Hexanes +	0.0050			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 843
Specific gravity, calculated: 0.646

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 384921 Job #: 23048 IS-63575 Co. Job#:
Sample Name: A-074922-092713-CM-MW-4 Co. Lab#:
Company: Pace Analytical
Date Sampled: 9/27/2013
Container: Cali-5-Bond Bag
Field/Site Name: 074922 / Area 30 / SJ 32-8
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Received: 9/30/2013 Date Reported: 10/10/2013

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0051			
Hydrogen	nd			
Argon	0.415			
Oxygen	0.87			
Nitrogen	35.40			
Carbon Dioxide	0.25			
Methane	61.89	-37.34	-174.8	
Ethane	1.01			
Ethylene	nd			
Propane	0.113			
Propylene	nd			
Iso-butane	0.0232			
N-butane	0.0108			
Iso-pentane	0.0049			
N-pentane	0.0015			
Hexanes +	0.0043			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 649
Specific gravity, calculated: 0.718

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

1 850

ISOTECH
ISOTECH LABORATORIES INC
1308 Parkland Court Champaign, IL 61821 · (877) 362-4190 · www.isotechlabs.com

Send Data and Invoice to

Name: Christine Mathews
Company: CRA
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-269-0088
Fax:
Email: CMathews@crawarld.com

Project: 074922- San Juan 32-8 30 Area
Purchase Order #:
Location: San Juan County, NM
Sampled By: CM, BC
Circle one: Standard / Priority / Rush

Sample Description

~~N/A~~	Sample Identification	Date Sampled	Time	Analysis Requested: Carbon & Hydrogen Isotopes	Hydrocarbons & Fixed Gases	BTU & Specific Gravity	Comments
~~N/A~~	~~A-074922-092713-CM~~						
	A-074922-092713-CM-DUP	9/27/13	1050	X	X	X	
	A-074922-092713-CM-MW-2	9/27/13	1135	X	X	X	
	A-074922-092713-CM-MW-3	9/27/13	1120	X	X	X	
	A-074922-092713-CM-MW-4	9/27/13	1055	X	X	X	

* Please Report to Alice Flanagan Pace Lenexa 913-563-1409

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	Christine Mathews	CRA	9/27/13	1500
Received by	Peter Cebulo	Isotech	9/30/13	0945
Relinquished by				
Received by				
Relinquished by				
Received by				

60154295

Air TECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

Standard ☐ 48 hours ☐
Same Day ☐ 72 hours ☐
24 hours ☐ 96 hours ☒
Other:

DELIVERABLES

EDD ☐
EDF ☐
LEVEL 3 ☐
LEVEL 4 ☐

PAGE: | **OF**

Condition upon receipt:
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.:	074922
Project Name:	San Juan 32-8 30 Area
Report To:	Alice Flanagan - Pace in Lenexa
Company:	CRA
Street:	6121 Indian School Rd #200
City/State/Zip:	Albuquerque, NM 87110
Phone& Fax:	505-269-0088
e-mail:	Cmathews@craworld.com

BILLING

P.O. No.:
Bill to: Alice Flanagan Pace Lenexa

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	CONTAINER TYPE	BTU	TPH GRO & DRO	Acetylene and Hydrogen Sulfide	Full list VOCs (TO15	methane	
	A-074922-092713-CM-DUP	9/27/13	1050	Air	Silco	X	X	X	X	X	
	A-074922-092713-CM-MW-2	9/27/13	1135	Air	Silco	X	X	X	X	X	
	A-074922-092713-CM-MW-3	9/27/13	1120	Air	Silco	X	X	X	X	X	
	A-074922-092713-CM-MW-4	9/27/13	1055	Air	Silco	X	X	X	X	X	

AUTHORIZATION TO PERFORM WORK	Christine Mathews	COMPANY CRA	DATE/TIME 9/27/13 1500
SAMPLED BY	Christine Mathews	COMPANY CRA	DATE/TIME 9/27/13 1500
RELINQUISHED BY	Christine Mathews	DATE/TIME 9/27/13 1500	RECEIVED BY / DATE/TIME
RELINQUISHED BY	FED EX	DATE/TIME 9/28/13 0930	RECEIVED BY / DATE/TIME 9/28/13 0930
RELINQUISHED BY		DATE/TIME	RECEIVED BY / DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In (FedEx) UPS Courier ATLI Other _____

COMMENTS

Please run with a 96HR Turn around and report results to Alice Flanagan, Pace Lenexa 913-563-1409

Page 22 of 22

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCL **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

January 23, 2014

Jeff Walker
COP Conestoga-Rovers & Associa
6121 Indian School Rd. NE
Ste 200
Albuquerque, NM 87110

RE: Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory between December 07, 2013 and December 11, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

REVISED

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan
alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Angela Bown, COP Conestoga-Rovers & Associa
Christine Matthews, CRA

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Pace Analytical Services, Inc.
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Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159189001	GW-074922-120313-CM-MW-2-Z1	Water	12/03/13 10:35	12/07/13 10:40
60159189002	GW-074922-120313-CM-MW-2-Z2	Water	12/03/13 12:25	12/07/13 10:40
60159189003	GW-074922-120313-CM-MW-4-Z1	Water	12/03/13 16:30	12/07/13 10:40
60159189004	GW-074922-120413-CM-MW-4-Z2	Water	12/04/13 09:55	12/07/13 10:40
60159189005	GW-074922-120513-CM-MW-1-Z1	Water	12/05/13 15:10	12/07/13 10:40
60159189006	GW-074922-120513-CM-DUP	Water	12/05/13 15:20	12/07/13 10:40
60159189007	GW-074922-120613-CM-MW-1-Z2	Water	12/06/13 10:30	12/07/13 10:40
60159189008	GW-074922-120613-CM-MW-1-Z3	Water	12/06/13 14:15	12/07/13 10:40
60159189009	GW-074922-120513-CM-MW-3-Z2	Water	12/05/13 11:00	12/07/13 10:40
60160091001	A-074922-120213-WM-MW-4-1	Air	12/02/13 15:05	12/11/13 10:05
60160091002	A-074922-120213-WM-MW-3	Air	12/02/13 16:40	12/11/13 10:05
60160091003	A-074922-120213-CM-MW-2	Air	12/02/13 14:10	12/11/13 10:05
60160091004	A-074922-120213-CM-DUP	Air	12/02/13 14:15	12/11/13 10:05
60160091005	A-074922-120413-KW-MW-4-2	Air	12/02/13 09:45	12/11/13 10:05
60160094001	GW-074922-120613-CM-MW-1-Z3	Water	12/06/13 14:15	12/11/13 10:00
60160094002	GW-074922-120313-CM-MW-2-Z2	Water	12/03/13 12:25	12/11/13 10:00
60160094003	GW-074922-120513-CM-MW-1-Z1	Water	12/05/13 15:10	12/11/13 10:00
60160094004	GW-074922-120613-CM-MW-1-Z2	Water	12/06/13 10:30	12/11/13 10:00
60160094005	GW-074922-120513-CM-DUP	Water	12/05/13 15:20	12/11/13 10:00
60160094006	GW-074922-120513-CM-MW-3-Z2	Water	12/05/13 11:00	12/11/13 10:00
60160094007	GW-074922-120413-CM-MW-4-Z2	Water	12/04/13 09:55	12/11/13 10:00
60160094008	GW-074922-120313-CM-MW-4-Z1	Water	12/03/13 16:30	12/11/13 10:00
60160094009	GW-074922-120313-CM-MW-2-Z1	Water	12/03/13 11:05	12/11/13 10:00

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(913)599-5665

SAMPLE ANALYTE COUNT

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159189001	GW-074922-120313-CM-MW-2-Z1	EPA 6010	TDS	7
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60159189002	GW-074922-120313-CM-MW-2-Z2	EPA 6010	TDS	7
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60159189003	GW-074922-120313-CM-MW-4-Z1	EPA 6010	TDS	7
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60159189004	GW-074922-120413-CM-MW-4-Z2	EPA 6010	TDS	7
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60159189005	GW-074922-120513-CM-MW-1-Z1	EPA 6010	TDS	7
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60159189006	GW-074922-120513-CM-DUP	EPA 6010	TDS	7
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60159189007	GW-074922-120613-CM-MW-1-Z2	EPA 6010	TDS	7
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60159189008	GW-074922-120613-CM-MW-1-Z3	EPA 6010	TDS	7
		SM 2320B	JMC	2

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9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60159189009	**GW-074922-120513-CM-MW-3-Z2**	EPA 6010	TDS	7
		SM 2320B	JMC	2
		SM 2540C	RAH	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3

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Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Method: EPA 6010
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: January 23, 2014

General Information:
9 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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: MPRP/25568

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60159189001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1304287)
  - Calcium, Dissolved
  - Sodium, Dissolved
- MSD (Lab ID: 1304288)
  - Calcium, Dissolved
  - Sodium, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: January 23, 2014

General Information:
9 samples were analyzed for SM 2320B. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: January 23, 2014

General Information:
9 samples were analyzed for SM 2540C. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: January 23, 2014

General Information:
9 samples were analyzed for SM 4500-S-2 D. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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: WET/45014

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60159180001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1302634)
  - Sulfide, Total

QC Batch: WET/45063

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60159189004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1303602)
  - Sulfide, Total

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: January 23, 2014

General Information:
9 samples were analyzed for EPA 300.0. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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: WETA/27503

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60158976001,60159189001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1306109)
  - Sulfate
- MSD (Lab ID: 1306108)
  - Sulfate

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Sample: GW-074922-120313-CM-MW-2-Z1 **Lab ID: 60159189001** Collected: 12/03/13 10:35 Received: 12/07/13 10:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**237**	ug/L	10.0	1	12/12/13 14:15	12/17/13 14:38	7440-39-3	
Boron, Dissolved	**159**	ug/L	100	1	12/12/13 14:15	12/17/13 14:38	7440-42-8	
Calcium, Dissolved	**237000**	ug/L	100	1	12/12/13 14:15	12/17/13 14:38	7440-70-2	M1
Magnesium, Dissolved	**13200**	ug/L	50.0	1	12/12/13 14:15	12/17/13 14:38	7439-95-4	
Potassium, Dissolved	**5390**	ug/L	500	1	12/12/13 14:15	12/17/13 14:38	7440-09-7	
Sodium, Dissolved	**376000**	ug/L	500	1	12/12/13 14:15	12/17/13 14:38	7440-23-5	M1
Strontium, Dissolved	**2390**	ug/L	10.0	1	12/12/13 14:15	12/17/13 14:38	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**201**	mg/L	20.0	1		12/16/13 14:38		
Alkalinity, Total as CaCO3	**201**	mg/L	20.0	1		12/16/13 14:38		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2200**	mg/L	5.0	1		12/10/13 11:30		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**0.10**	mg/L	0.050	1		12/10/13 14:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		12/16/13 20:02	24959-67-9	
Chloride	**22.2**	mg/L	2.0	2		12/16/13 20:32	16887-00-6	
Sulfate	**458**	mg/L	50.0	50		12/18/13 09:45	14808-79-8	M1

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Sample: GW-074922-120313-CM-MW-2-Z2 **Lab ID: 60159189002** Collected: 12/03/13 12:25 Received: 12/07/13 10:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**54.7**	ug/L	10.0	1	12/12/13 14:15	12/17/13 14:47	7440-39-3	
Boron, Dissolved	**146**	ug/L	100	1	12/12/13 14:15	12/17/13 14:47	7440-42-8	
Calcium, Dissolved	**7590**	ug/L	100	1	12/12/13 14:15	12/17/13 14:47	7440-70-2	
Magnesium, Dissolved	**849**	ug/L	50.0	1	12/12/13 14:15	12/17/13 14:47	7439-95-4	
Potassium, Dissolved	**1860**	ug/L	500	1	12/12/13 14:15	12/17/13 14:47	7440-09-7	
Sodium, Dissolved	**274000**	ug/L	500	1	12/12/13 14:15	12/17/13 14:47	7440-23-5	
Strontium, Dissolved	**128**	ug/L	10.0	1	12/12/13 14:15	12/17/13 14:47	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**325**	mg/L	20.0	1		12/16/13 14:45		
Alkalinity, Total as CaCO3	**325**	mg/L	20.0	1		12/16/13 14:45		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1160**	mg/L	5.0	1		12/10/13 11:31		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	ND	mg/L	0.050	1		12/10/13 14:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		12/16/13 21:02	24959-67-9	
Chloride	**19.0**	mg/L	1.0	1		12/16/13 21:02	16887-00-6	
Sulfate	**58.0**	mg/L	5.0	5		12/18/13 10:16	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Sample: GW-074922-120313-CM-MW-4-Z1 **Lab ID: 60159189003** Collected: 12/03/13 16:30 Received: 12/07/13 10:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**117**	ug/L	10.0	1	12/12/13 14:15	12/17/13 14:49	7440-39-3	
Boron, Dissolved	**100**	ug/L	100	1	12/12/13 14:15	12/17/13 14:49	7440-42-8	
Calcium, Dissolved	**517000**	ug/L	200	2	12/12/13 14:15	12/17/13 15:11	7440-70-2	
Magnesium, Dissolved	**17800**	ug/L	50.0	1	12/12/13 14:15	12/17/13 14:49	7439-95-4	
Potassium, Dissolved	**4920**	ug/L	500	1	12/12/13 14:15	12/17/13 14:49	7440-09-7	
Sodium, Dissolved	**339000**	ug/L	500	1	12/12/13 14:15	12/17/13 14:49	7440-23-5	
Strontium, Dissolved	**6060**	ug/L	10.0	1	12/12/13 14:15	12/17/13 14:49	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**1370**	mg/L	40.0	2		12/16/13 17:14		
Alkalinity, Total as CaCO3	**1370**	mg/L	40.0	2		12/16/13 17:14		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2510**	mg/L	5.0	1		12/10/13 11:31		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**70.0**	mg/L	2.5	50		12/10/13 14:43	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		12/16/13 21:48	24959-67-9	
Chloride	**19.4**	mg/L	1.0	1		12/16/13 21:48	16887-00-6	
Sulfate	**442**	mg/L	100	100		12/18/13 10:31	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Sample: GW-074922-120413-CM-MW-4-Z2 **Lab ID: 60159189004** Collected: 12/04/13 09:55 Received: 12/07/13 10:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**77.4**	ug/L	50.0	5	12/12/13 14:15	12/17/13 14:52	7440-39-3	
Boron, Dissolved	ND	ug/L	500	5	12/12/13 14:15	12/17/13 14:52	7440-42-8	
Calcium, Dissolved	**362000**	ug/L	500	5	12/12/13 14:15	12/17/13 14:52	7440-70-2	
Magnesium, Dissolved	**11200**	ug/L	250	5	12/12/13 14:15	12/17/13 14:52	7439-95-4	
Potassium, Dissolved	**5900**	ug/L	2500	5	12/12/13 14:15	12/17/13 14:52	7440-09-7	
Sodium, Dissolved	**638000**	ug/L	2500	5	12/12/13 14:15	12/17/13 14:52	7440-23-5	
Strontium, Dissolved	**4950**	ug/L	50.0	5	12/12/13 14:15	12/17/13 14:52	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**838**	mg/L	20.0	1		12/16/13 15:30		
Alkalinity, Total as CaCO3	**838**	mg/L	20.0	1		12/16/13 15:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3160**	mg/L	5.0	1		12/10/13 11:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**1.5**	mg/L	0.050	1		12/11/13 14:11	18496-25-8	M1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		12/16/13 23:04	24959-67-9	
Chloride	**50.3**	mg/L	5.0	5		12/16/13 23:19	16887-00-6	
Sulfate	**915**	mg/L	100	100		12/16/13 22:19	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Sample: GW-074922-120513-CM-MW-1-Z1 **Lab ID: 60159189005** Collected: 12/05/13 15:10 Received: 12/07/13 10:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	ND	ug/L	50.0	5	12/12/13 14:15	12/17/13 14:54	7440-39-3	
Boron, Dissolved	ND	ug/L	500	5	12/12/13 14:15	12/17/13 14:54	7440-42-8	
Calcium, Dissolved	**495000**	ug/L	500	5	12/12/13 14:15	12/17/13 14:54	7440-70-2	
Magnesium, Dissolved	**13100**	ug/L	250	5	12/12/13 14:15	12/17/13 14:54	7439-95-4	
Potassium, Dissolved	**14100**	ug/L	2500	5	12/12/13 14:15	12/17/13 14:54	7440-09-7	
Sodium, Dissolved	**940000**	ug/L	2500	5	12/12/13 14:15	12/17/13 14:54	7440-23-5	
Strontium, Dissolved	**7760**	ug/L	50.0	5	12/12/13 14:15	12/17/13 14:54	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**237**	mg/L	20.0	1		12/16/13 15:35		
Alkalinity, Total as CaCO3	**237**	mg/L	20.0	1		12/16/13 15:35		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4300**	mg/L	5.0	1		12/10/13 11:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**0.97**	mg/L	0.050	1		12/11/13 14:14	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		12/16/13 23:34	24959-67-9	
Chloride	**39.6**	mg/L	5.0	5		12/20/13 11:22	16887-00-6	
Sulfate	**2950**	mg/L	500	500		12/20/13 09:41	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Sample: GW-074922-120513-CM-DUP **Lab ID: 60159189006** Collected: 12/05/13 15:20 Received: 12/07/13 10:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**41.9**	ug/L	10.0	1	12/12/13 14:15	12/17/13 15:01	7440-39-3	
Boron, Dissolved	**306**	ug/L	100	1	12/12/13 14:15	12/17/13 15:01	7440-42-8	
Calcium, Dissolved	**478000**	ug/L	100	1	12/12/13 14:15	12/17/13 15:01	7440-70-2	
Magnesium, Dissolved	**12400**	ug/L	50.0	1	12/12/13 14:15	12/17/13 15:01	7439-95-4	
Potassium, Dissolved	**14400**	ug/L	500	1	12/12/13 14:15	12/17/13 15:01	7440-09-7	
Sodium, Dissolved	**1040000**	ug/L	2500	5	12/12/13 14:15	12/17/13 15:18	7440-23-5	
Strontium, Dissolved	**7600**	ug/L	10.0	1	12/12/13 14:15	12/17/13 15:01	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**224**	mg/L	20.0	1		12/16/13 15:41		
Alkalinity, Total as CaCO3	**224**	mg/L	20.0	1		12/16/13 15:41		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3590**	mg/L	5.0	1		12/10/13 11:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**1.0**	mg/L	0.050	1		12/11/13 14:14	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		12/16/13 23:50	24959-67-9	
Chloride	**38.9**	mg/L	5.0	5		12/20/13 11:36	16887-00-6	
Sulfate	**2960**	mg/L	500	500		12/20/13 09:55	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Sample: GW-074922-120613-CM-MW-1-Z2 **Lab ID: 60159189007** Collected: 12/06/13 10:30 Received: 12/07/13 10:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**46.5**	ug/L	10.0	1	12/12/13 14:15	12/17/13 15:04	7440-39-3	
Boron, Dissolved	**479**	ug/L	100	1	12/12/13 14:15	12/17/13 15:04	7440-42-8	
Calcium, Dissolved	**432000**	ug/L	100	1	12/12/13 14:15	12/17/13 15:04	7440-70-2	
Magnesium, Dissolved	**11500**	ug/L	50.0	1	12/12/13 14:15	12/17/13 15:04	7439-95-4	
Potassium, Dissolved	**11900**	ug/L	500	1	12/12/13 14:15	12/17/13 15:04	7440-09-7	
Sodium, Dissolved	**1620000**	ug/L	2500	5	12/12/13 14:15	12/17/13 15:20	7440-23-5	
Strontium, Dissolved	**6270**	ug/L	10.0	1	12/12/13 14:15	12/17/13 15:04	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**423**	mg/L	20.0	1		12/16/13 15:47		
Alkalinity, Total as CaCO3	**423**	mg/L	20.0	1		12/16/13 15:47		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**6100**	mg/L	5.0	1		12/10/13 11:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**7.2**	mg/L	0.25	5		12/13/13 14:04	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		12/17/13 00:05	24959-67-9	
Chloride	**84.3**	mg/L	10.0	10		12/20/13 11:51	16887-00-6	
Sulfate	**4070**	mg/L	500	500		12/20/13 10:10	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Sample: GW-074922-120613-CM-MW-1-Z3 **Lab ID: 60159189008** Collected: 12/06/13 14:15 Received: 12/07/13 10:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**188**	ug/L	10.0	1	12/12/13 14:15	12/17/13 15:06	7440-39-3	
Boron, Dissolved	**141**	ug/L	100	1	12/12/13 14:15	12/17/13 15:06	7440-42-8	
Calcium, Dissolved	**317000**	ug/L	100	1	12/12/13 14:15	12/17/13 15:06	7440-70-2	
Magnesium, Dissolved	**9540**	ug/L	50.0	1	12/12/13 14:15	12/17/13 15:06	7439-95-4	
Potassium, Dissolved	**15000**	ug/L	500	1	12/12/13 14:15	12/17/13 15:06	7440-09-7	
Sodium, Dissolved	**674000**	ug/L	2500	5	12/12/13 14:15	12/17/13 15:22	7440-23-5	
Strontium, Dissolved	**4830**	ug/L	10.0	1	12/12/13 14:15	12/17/13 15:06	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**1240**	mg/L	40.0	2		12/16/13 17:22		
Alkalinity, Total as CaCO3	**1240**	mg/L	40.0	2		12/16/13 17:22		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3370**	mg/L	5.0	1		12/10/13 11:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**5.1**	mg/L	0.25	5		12/13/13 14:05	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		12/17/13 00:20	24959-67-9	
Chloride	**160**	mg/L	20.0	20		12/20/13 12:05	16887-00-6	
Sulfate	**836**	mg/L	100	100		12/20/13 10:24	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Sample: GW-074922-120513-CM-MW-3-Z2 **Lab ID: 60159189009** Collected: 12/05/13 11:00 Received: 12/07/13 10:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**12.9**	ug/L	10.0	1	12/12/13 14:15	12/17/13 15:09	7440-39-3	
Boron, Dissolved	**264**	ug/L	100	1	12/12/13 14:15	12/17/13 15:09	7440-42-8	
Calcium, Dissolved	**372000**	ug/L	100	1	12/12/13 14:15	12/17/13 15:09	7440-70-2	
Magnesium, Dissolved	**13000**	ug/L	50.0	1	12/12/13 14:15	12/17/13 15:09	7439-95-4	
Potassium, Dissolved	**4770**	ug/L	500	1	12/12/13 14:15	12/17/13 15:09	7440-09-7	
Sodium, Dissolved	**1050000**	ug/L	2500	5	12/12/13 14:15	12/17/13 15:24	7440-23-5	
Strontium, Dissolved	**6120**	ug/L	10.0	1	12/12/13 14:15	12/17/13 15:09	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**147**	mg/L	20.0	1		12/16/13 16:03		
Alkalinity, Total as CaCO3	**147**	mg/L	20.0	1		12/16/13 16:03		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4410**	mg/L	5.0	1		12/10/13 11:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	ND	mg/L	0.050	1		12/11/13 14:15	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		12/17/13 00:35	24959-67-9	
Chloride	**11.5**	mg/L	1.0	1		12/17/13 00:35	16887-00-6	
Sulfate	**2930**	mg/L	500	500		12/20/13 11:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

QC Batch: MPRP/25568 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60159189001, 60159189002, 60159189003, 60159189004, 60159189005, 60159189006, 60159189007, 60159189008, 60159189009

METHOD BLANK: 1304285 Matrix: Water
Associated Lab Samples: 60159189001, 60159189002, 60159189003, 60159189004, 60159189005, 60159189006, 60159189007, 60159189008, 60159189009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium, Dissolved	ug/L	ND	10.0	12/17/13 14:34	
Boron, Dissolved	ug/L	ND	100	12/17/13 14:34	
Calcium, Dissolved	ug/L	ND	100	12/17/13 14:34	
Magnesium, Dissolved	ug/L	ND	50.0	12/17/13 14:34	
Potassium, Dissolved	ug/L	ND	500	12/17/13 14:34	
Sodium, Dissolved	ug/L	ND	500	12/17/13 14:34	
Strontium, Dissolved	ug/L	ND	10.0	12/17/13 14:34	

LABORATORY CONTROL SAMPLE: 1304286

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium, Dissolved	ug/L	1000	987	99	80-120	
Boron, Dissolved	ug/L	1000	932	93	80-120	
Calcium, Dissolved	ug/L	10000	9810	98	80-120	
Magnesium, Dissolved	ug/L	10000	9810	98	80-120	
Potassium, Dissolved	ug/L	10000	9910	99	80-120	
Sodium, Dissolved	ug/L	10000	9870	99	80-120	
Strontium, Dissolved	ug/L	1000	952	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1304287 1304288

Parameter	Units	60159189001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium, Dissolved	ug/L	237	1000	1000	1220	1200	98	97	75-125	1	20	
Boron, Dissolved	ug/L	159	1000	1000	1110	1080	95	93	75-125	2	20	
Calcium, Dissolved	ug/L	237000	10000	10000	232000	235000	-47	-12	75-125	1	20	M1
Magnesium, Dissolved	ug/L	13200	10000	10000	21500	21500	83	83	75-125	0	20	
Potassium, Dissolved	ug/L	5390	10000	10000	15100	15000	97	96	75-125	1	20	
Sodium, Dissolved	ug/L	376000	10000	10000	368000	375000	-86	-17	75-125	2	20	M1
Strontium, Dissolved	ug/L	2390	1000	1000	3190	3200	80	81	75-125	0	20	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

QC Batch: WET/45158 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60159189001, 60159189002, 60159189003, 60159189004, 60159189005, 60159189006, 60159189007, 60159189008, 60159189009

METHOD BLANK: 1306538 Matrix: Water
Associated Lab Samples: 60159189001, 60159189002, 60159189003, 60159189004, 60159189005, 60159189006, 60159189007, 60159189008, 60159189009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	12/16/13 13:51	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	12/16/13 13:51	

LABORATORY CONTROL SAMPLE: 1306539

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	505	101	90-110	

SAMPLE DUPLICATE: 1306542

Parameter	Units	60158976002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	381	391	2	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	381	391	2	10	

SAMPLE DUPLICATE: 1306543

Parameter	Units	60159083001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	638	666	4	10	
Alkalinity,Bicarbonate (CaCO3)	mg/L	638	666	4	10	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

QC Batch: WET/45028 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60159189001, 60159189002, 60159189003, 60159189004, 60159189005, 60159189006, 60159189007, 60159189008, 60159189009

METHOD BLANK: 1302819 Matrix: Water
Associated Lab Samples: 60159189001, 60159189002, 60159189003, 60159189004, 60159189005, 60159189006, 60159189007, 60159189008, 60159189009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	12/10/13 11:30	

LABORATORY CONTROL SAMPLE: 1302820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	997	100	80-120	

SAMPLE DUPLICATE: 1302821

Parameter	Units	60159189001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2200	2230	1	17	

SAMPLE DUPLICATE: 1302822

Parameter	Units	60159189009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4410	4510	2	17	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

QC Batch: WET/45014 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60159189001, 60159189002, 60159189003

METHOD BLANK: 1302632 Matrix: Water
Associated Lab Samples: 60159189001, 60159189002, 60159189003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	12/10/13 14:32	

LABORATORY CONTROL SAMPLE: 1302633

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.5	0.48	95	80-120	

MATRIX SPIKE SAMPLE: 1302634

Parameter	Units	60159180001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	1.5	.5	1.8	57	75-125	M1

SAMPLE DUPLICATE: 1302635

Parameter	Units	60159180002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	12.3	12.3	1	20	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

QC Batch: WET/45063 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60159189004, 60159189005, 60159189006, 60159189009

METHOD BLANK: 1303600 Matrix: Water
Associated Lab Samples: 60159189004, 60159189005, 60159189006, 60159189009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	12/11/13 14:10	

LABORATORY CONTROL SAMPLE: 1303601

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.5	0.52	105	80-120	

MATRIX SPIKE SAMPLE: 1303602

Parameter	Units	60159189004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	1.5	.5	1.8	70	75-125	M1

SAMPLE DUPLICATE: 1303604

Parameter	Units	60159093002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

QC Batch: WET/45099
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60159189007, 60159189008

METHOD BLANK: 1304804 Matrix: Water
Associated Lab Samples: 60159189007, 60159189008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	12/13/13 14:02	

LABORATORY CONTROL SAMPLE: 1304805

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.5	0.53	107	80-120	

MATRIX SPIKE SAMPLE: 1304806

Parameter	Units	60159189007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	7.2	2.5	9.5	93	75-125	

SAMPLE DUPLICATE: 1304807

Parameter	Units	60159189008 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	5.1	6.1	17	20	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

QC Batch: WETA/27503 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60159189001, 60159189002, 60159189003, 60159189004, 60159189005, 60159189006, 60159189007, 60159189008, 60159189009

METHOD BLANK: 1306105 Matrix: Water
Associated Lab Samples: 60159189001, 60159189002, 60159189003, 60159189004, 60159189005, 60159189006, 60159189007, 60159189008, 60159189009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	12/16/13 14:27	
Chloride	mg/L	ND	1.0	12/16/13 14:27	
Sulfate	mg/L	ND	1.0	12/16/13 14:27	

METHOD BLANK: 1308851 Matrix: Water
Associated Lab Samples: 60159189001, 60159189002, 60159189003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	12/18/13 09:15	

METHOD BLANK: 1309672 Matrix: Water
Associated Lab Samples: 60159189005, 60159189006, 60159189007, 60159189008, 60159189009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	12/20/13 09:12	
Sulfate	mg/L	ND	1.0	12/20/13 09:12	

LABORATORY CONTROL SAMPLE: 1306106

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	5.1	101	90-110	
Chloride	mg/L	5	4.9	98	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 1308852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.6	93	90-110	

LABORATORY CONTROL SAMPLE: 1309673

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	

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QUALITY CONTROL DATA

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

LABORATORY CONTROL SAMPLE: 1309673

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306107 1306108

Parameter	Units	60158976001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Bromide	mg/L	ND	50	50	45.7	45.0	86	85	80-120	1	15	
Chloride	mg/L	159	50	50	205	206	92	93	80-120	0	15	
Sulfate	mg/L	129	50	50	185	190	111	122	80-120	3	15	M1

MATRIX SPIKE SAMPLE: 1306109

Parameter	Units	60159189001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	ND	5	5.9	118	80-120	
Chloride	mg/L	22.2	10	32.6	104	80-120	
Sulfate	mg/L	458	250	754	118	80-120	M1

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QUALIFIERS

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60159189

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159189001	GW-074922-120313-CM-MW-2-Z1	EPA 3010	MPRP/25568	EPA 6010	ICP/19637
60159189002	GW-074922-120313-CM-MW-2-Z2	EPA 3010	MPRP/25568	EPA 6010	ICP/19637
60159189003	GW-074922-120313-CM-MW-4-Z1	EPA 3010	MPRP/25568	EPA 6010	ICP/19637
60159189004	GW-074922-120413-CM-MW-4-Z2	EPA 3010	MPRP/25568	EPA 6010	ICP/19637
60159189005	GW-074922-120513-CM-MW-1-Z1	EPA 3010	MPRP/25568	EPA 6010	ICP/19637
60159189006	GW-074922-120513-CM-DUP	EPA 3010	MPRP/25568	EPA 6010	ICP/19637
60159189007	GW-074922-120613-CM-MW-1-Z2	EPA 3010	MPRP/25568	EPA 6010	ICP/19637
60159189008	GW-074922-120613-CM-MW-1-Z3	EPA 3010	MPRP/25568	EPA 6010	ICP/19637
60159189009	GW-074922-120513-CM-MW-3-Z2	EPA 3010	MPRP/25568	EPA 6010	ICP/19637
60159189001	GW-074922-120313-CM-MW-2-Z1	SM 2320B	WET/45158		
60159189002	GW-074922-120313-CM-MW-2-Z2	SM 2320B	WET/45158		
60159189003	GW-074922-120313-CM-MW-4-Z1	SM 2320B	WET/45158		
60159189004	GW-074922-120413-CM-MW-4-Z2	SM 2320B	WET/45158		
60159189005	GW-074922-120513-CM-MW-1-Z1	SM 2320B	WET/45158		
60159189006	GW-074922-120513-CM-DUP	SM 2320B	WET/45158		
60159189007	GW-074922-120613-CM-MW-1-Z2	SM 2320B	WET/45158		
60159189008	GW-074922-120613-CM-MW-1-Z3	SM 2320B	WET/45158		
60159189009	GW-074922-120513-CM-MW-3-Z2	SM 2320B	WET/45158		
60159189001	GW-074922-120313-CM-MW-2-Z1	SM 2540C	WET/45028		
60159189002	GW-074922-120313-CM-MW-2-Z2	SM 2540C	WET/45028		
60159189003	GW-074922-120313-CM-MW-4-Z1	SM 2540C	WET/45028		
60159189004	GW-074922-120413-CM-MW-4-Z2	SM 2540C	WET/45028		
60159189005	GW-074922-120513-CM-MW-1-Z1	SM 2540C	WET/45028		
60159189006	GW-074922-120513-CM-DUP	SM 2540C	WET/45028		
60159189007	GW-074922-120613-CM-MW-1-Z2	SM 2540C	WET/45028		
60159189008	GW-074922-120613-CM-MW-1-Z3	SM 2540C	WET/45028		
60159189009	GW-074922-120513-CM-MW-3-Z2	SM 2540C	WET/45028		
60159189001	GW-074922-120313-CM-MW-2-Z1	SM 4500-S-2 D	WET/45014		
60159189002	GW-074922-120313-CM-MW-2-Z2	SM 4500-S-2 D	WET/45014		
60159189003	GW-074922-120313-CM-MW-4-Z1	SM 4500-S-2 D	WET/45014		
60159189004	GW-074922-120413-CM-MW-4-Z2	SM 4500-S-2 D	WET/45063		
60159189005	GW-074922-120513-CM-MW-1-Z1	SM 4500-S-2 D	WET/45063		
60159189006	GW-074922-120513-CM-DUP	SM 4500-S-2 D	WET/45063		
60159189007	GW-074922-120613-CM-MW-1-Z2	SM 4500-S-2 D	WET/45099		
60159189008	GW-074922-120613-CM-MW-1-Z3	SM 4500-S-2 D	WET/45099		
60159189009	GW-074922-120513-CM-MW-3-Z2	SM 4500-S-2 D	WET/45063		
60159189001	GW-074922-120313-CM-MW-2-Z1	EPA 300.0	WETA/27503		
60159189002	GW-074922-120313-CM-MW-2-Z2	EPA 300.0	WETA/27503		
60159189003	GW-074922-120313-CM-MW-4-Z1	EPA 300.0	WETA/27503		
60159189004	GW-074922-120413-CM-MW-4-Z2	EPA 300.0	WETA/27503		
60159189005	GW-074922-120513-CM-MW-1-Z1	EPA 300.0	WETA/27503		
60159189006	GW-074922-120513-CM-DUP	EPA 300.0	WETA/27503		
60159189007	GW-074922-120613-CM-MW-1-Z2	EPA 300.0	WETA/27503		
60159189008	GW-074922-120613-CM-MW-1-Z3	EPA 300.0	WETA/27503		
60159189009	GW-074922-120513-CM-MW-3-Z2	EPA 300.0	WETA/27503		

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ISOTECH
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ANALYSIS REPORT

Lab #:	398795	Job #:	23821	IS-68553
Sample Name/Number:	GW-074922-120613-CM-MW-1-Z3			
Company:	Pace Analytical			
Date Sampled:	12/06/2013			
Container:	IsoFlask			
Field/Site Name:	San Juan 32-8 30 Area			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	12/11/2013	Date Reported:	12/23/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0186			
Oxygen	0.026			
Nitrogen	99.40			
Carbon Dioxide	0.51			
Methane	0.0438			
Ethane	0.0011			
Ethylene	nd			
Propane	0.0001			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.40 cc/L ; 0.26 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	398796	Job #:	23821	IS-68553
Sample Name/Number:	GW-074922-120313-CM-MW-2-Z2			
Company:	Pace Analytical			
Date Sampled:	12/03/2013			
Container:	IsoFlask			
Field/Site Name:	San Juan 32-8 30 Area			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	12/11/2013	Date Reported:	12/23/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0528			
Oxygen	0.047			
Nitrogen	99.74			
Carbon Dioxide	0.12			
Methane	0.0390			
Ethane	0.0007			
Ethylene	nd			
Propane	0.0001			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.085 cc/L ; 0.057 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	398797	Job #:	23821	IS-68553
Sample Name/Number:	GW-074922-120513-CM-MW-1-Z1			
Company:	Pace Analytical			
Date Sampled:	12/05/2013			
Container:	IsoFlask			
Field/Site Name:	San Juan 32-8 30 Area			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	12/11/2013	Date Reported:	12/23/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.44			
Oxygen	5.25			
Nitrogen	75.44			
Carbon Dioxide	7.07			
Methane	10.60			
Ethane	0.180			
Ethylene	0.0018			
Propane	0.0110			
Propylene	0.0004			
Iso-butane	0.0009			
N-butane	0.0018			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.77
Concentration of methane in water = 3.9 cc/L ; 2.6 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
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ANALYSIS REPORT

Lab #:	398798	Job #:	23821	IS-68553
Sample Name/Number:	GW-074922-120613-CM-MW-1-Z2			
Company:	Pace Analytical			
Date Sampled:	12/06/2013			
Container:	IsoFlask			
Field/Site Name:	San Juan 32-8 30 Area			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	12/11/2013	Date Reported:	12/23/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.258			
Oxygen	0.088			
Nitrogen	97.66			
Carbon Dioxide	1.47			
Methane	0.506			
Ethane	0.0181			
Ethylene	0.0002			
Propane	0.0023			
Propylene	nd			
Iso-butane	nd			
N-butane	0.0004			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.51
Concentration of methane in water = 0.27 cc/L ; 0.18 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	398799	Job #:	23821	IS-68553
Sample Name/Number:	GW-074922-120513-CM-DUP			
Company:	Pace Analytical			
Date Sampled:	12/05/2013			
Container:	IsoFlask			
Field/Site Name:	San Juan 32-8 30 Area			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	12/11/2013	Date Reported:	12/23/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.60			
Oxygen	1.63			
Nitrogen	74.78			
Carbon Dioxide	8.25			
Methane	13.50			
Ethane	0.223			
Ethylene	0.0026			
Propane	0.0134			
Propylene	0.0005			
Iso-butane	0.0010			
N-butane	0.0021			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.80
Concentration of methane in water = 4.0 cc/L ; 2.7 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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ANALYSIS REPORT

Lab #:	398800	Job #:	23821	IS-68553
Sample Name/Number:	GW-074922-120513-CM-MW-3-Z2			
Company:	Pace Analytical			
Date Sampled:	12/05/2013			
Container:	IsoFlask			
Field/Site Name:	San Juan 32-8 30 Area			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	12/11/2013	Date Reported:	12/23/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0616			
Oxygen	0.82			
Nitrogen	98.96			
Carbon Dioxide	0.12			
Methane	0.0362			
Ethane	0.0004			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.038 cc/L ; 0.025 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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ANALYSIS REPORT

Lab #:	398801	Job #:	23821	IS-68553
Sample Name/Number:	GW-074922-120413-CM-MW-4-Z2			
Company:	Pace Analytical			
Date Sampled:	12/04/2013			
Container:	IsoFlask			
Field/Site Name:	San Juan 32-8 30 Area			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	12/11/2013	Date Reported:	12/23/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.163			
Oxygen	0.024			
Nitrogen	86.37			
Carbon Dioxide	12.44			
Methane	0.978			
Ethane	0.0217			
Ethylene	0.0001			
Propane	0.0021			
Propylene	nd			
Iso-butane	0.0001			
N-butane	0.0002			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 1.3 cc/L ; 0.88 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
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ANALYSIS REPORT

Lab #:	398802	Job #:	23821	IS-68553
Sample Name/Number:	GW-074922-120313-CM-MW-4-Z1			
Company:	Pace Analytical			
Date Sampled:	12/03/2013			
Container:	IsoFlask			
Field/Site Name:	San Juan 32-8 30 Area			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	12/11/2013	Date Reported:	12/23/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.266			
Oxygen	0.037			
Nitrogen	91.54			
Carbon Dioxide	6.50			
Methane	1.61			
Ethane	0.0393			
Ethylene	0.0002			
Propane	0.0042			
Propylene	nd			
Iso-butane	0.0002			
N-butane	0.0004			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 4.3 cc/L ; 2.9 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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ANALYSIS REPORT

Lab #:	398803	Job #:	23821	IS-68553
Sample Name/Number:	GW-074922-120313-CM-MW-2-Z1			
Company:	Pace Analytical			
Date Sampled:	12/03/2013			
Container:	IsoFlask			
Field/Site Name:	San Juan 32-8 30 Area			
Location:				
Formation/Depth:				
Sampling Point:				
Date Received:	12/11/2013	Date Reported:	12/23/2013	

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	0.0400			
Argon	0.0149			
Oxygen	0.056			
Nitrogen	99.20			
Carbon Dioxide	0.67			
Methane	0.0225			
Ethane	0.0003			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.089 cc/L ; 0.060 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

60160094

ISOTECH

Send Data and Invoice to

Name: Christine Mathews
Company: Conestoga-Rovers & Assoc.
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: CM, WM, KW

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Dissolved methane			Comments
✓	GW-074922-120613-CM-MW-1-Z3	12/6/13	X	1415		Z-3 on label
✓	GW-074922-120313-CM-MW-2-Z2	12/03/13	X	1225		
✓	GW-074922-120513-CM-MW-1-Z1	12/05/13	X	1510		
✓	GW-074922-120613-CM-MW-1-Z2	12/06/13	X	1030		
CM	~~GW-074922-120513-CM-MW-DUP~~	~~12/05/13~~	X			
✓	GW-074922-120513-CM-DUP	12/05/13	X	1520		
✓	GW-074922-120513-CM-MW-3-Z2	12/05/13	X	1100		
✓	GW-074922-120413-CM-MW-4-Z2	12/04/13	X	0955		* Please report and bill to Alice Flanagan with Pace Lenexa, KS 913-563-1409
✓	GW-074922-120313-CM-MW-4-Z1	12/03/13	X	1620		
✓	GW-074922-120313-CM-MW-2-Z1	12/03/13	X	1105		

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by		CRA	12/10/13	1500
Received by		Isotech	12-11-13	1005
Relinquished by				
Received by				
Relinquished by				
Received by				

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 398804 Job #: 23822 IS-68553 Co. Job#:
Sample Name: A-074922-120213-WM-MW-4-1 Co. Lab#:
Company: Pace Analytical
Date Sampled: 12/02/2013
Container: Cali-5-Bond Bag
Field/Site Name: San Juan 32-8 30 Area
Location:
Formation/Depth:
Sampling Point:
Date Received: 12/11/2013 Date Reported: 1/13/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.122			
Oxygen	1.32			
Nitrogen	10.39			
Carbon Dioxide	1.29	-9.12		
Methane	85.22	-36.51	-175.5	
Ethane	1.42	-23.79	-137.9	
Ethylene	nd			
Propane	0.167			
Propylene	nd			
Iso-butane	0.0362			
N-butane	0.0167			
Iso-pentane	0.0078			
N-pentane	0.0025			
Hexanes +	0.0059			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 896
Specific gravity, calculated: 0.627

Remarks: updated 1/22/14 with d13C of CO2

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
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ANALYSIS REPORT

Lab #: 398805 Job #: 23822 IS-68553 Co. Job#:
Sample Name: A-074922-120213-WM-MW-3 Co. Lab#:
Company: Pace Analytical
Date Sampled: 12/02/2013
Container: Cali-5-Bond Bag
Field/Site Name: San Juan 32-8 30 Area
Location:
Formation/Depth:
Sampling Point:
Date Received: 12/11/2013 Date Reported: 1/13/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.681			
Oxygen	10.34			
Nitrogen	39.74			
Carbon Dioxide	2.95	-27.48		
Methane	45.54	-32.21	-166.2	
Ethane	0.634	-21.88	-131.3	
Ethylene	nd			
Propane	0.0801			
Propylene	nd			
Iso-butane	0.0211			
N-butane	0.0064			
Iso-pentane	0.0032			
N-pentane	0.0008			
Hexanes +	0.0016			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 476
Specific gravity, calculated: 0.814

Remarks: updated 1/22/14 with d13C of CO2

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 398806 Job #: 23822 IS-68553 Co. Job#:
Sample Name: A-074922-120213-CM-MW-2 Co. Lab#:
Company: Pace Analytical
Date Sampled: 12/02/2013
Container: Cali-5-Bond Bag
Field/Site Name: San Juan 32-8 30 Area
Location:
Formation/Depth:
Sampling Point:
Date Received: 12/11/2013 Date Reported: 1/13/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.797			
Oxygen	15.18			
Nitrogen	69.55			
Carbon Dioxide	2.00	-26.27		
Methane	12.28	-45.49	-183.3	
Ethane	0.181	-27.70		
Ethylene	nd			
Propane	0.0088			
Propylene	nd			
Iso-butane	nd			
N-butane	0.0004			
Iso-pentane	0.0004			
N-pentane	nd			
Hexanes +	0.0008			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 128
Specific gravity, calculated: 0.952

Remarks: updated 1/22/14 with d13C of CO2

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 398807 Job #: 23822 IS-68553 Co. Job#:
Sample Name: A-074922-120213-CM-DUP Co. Lab#:
Company: Pace Analytical
Date Sampled: 12/02/2013
Container: Cali-5-Bond Bag
Field/Site Name: San Juan 32-8 30 Area
Location:
Formation/Depth:
Sampling Point:
Date Received: 12/11/2013 Date Reported: 1/13/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.962			
Oxygen	16.07			
Nitrogen	78.30			
Carbon Dioxide	3.94	-29.45		
Methane	0.717	-72.13	-197.2	
Ethane	0.0056			
Ethylene	nd			
Propane	0.0004			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	0.0006			
N-pentane	nd			
Hexanes +	0.0006			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 7
Specific gravity, calculated: 1.012

Remarks: updated 1/22/14 with d13C of CO2

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 398808 Job #: 23822 IS-68553 Co. Job#:
Sample Name: A-074922-120413-KW-MW-4-2 Co. Lab#:
Company: Pace Analytical
Date Sampled: 12/04/2013
Container: Cali-5-Bond Bag
Field/Site Name: San Juan 32-8 30 Area
Location:
Formation/Depth:
Sampling Point:
Date Received: 12/11/2013 Date Reported: 1/13/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0992			
Oxygen	0.76			
Nitrogen	8.48			
Carbon Dioxide	1.34	-9.16		
Methane	87.62	-36.47	-177.1	
Ethane	1.46	-23.93	-139.0	
Ethylene	nd			
Propane	0.173			
Propylene	nd			
Iso-butane	0.0375			
N-butane	0.0174			
Iso-pentane	0.0084			
N-pentane	0.0028			
Hexanes +	0.0063			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 921
Specific gravity, calculated: 0.617

Remarks: updated 1/22/14 with d13C of CO2

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Send Data and Invoice to

Name: Christine Mathews
Company: Cranston-Rakes & Associates
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: CMathews@crawarld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: CM, WM, KW

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Carbon/Hydrogen Isotopes C1 & C2	Analyses Requested: Hydrocarbons/Fixed Gases/BTU	Analyses Requested: Stable Carbon Isotope of CO2	Comments
✓	A-074922-120213-WM-MW-4-1	12/2/13	X	X	based on C1 & C2	* please provide results of C1 & C2 prior to completing stable carbon of CO2, We will advise. Thank you, Christine
✓	A-074922-120213-WM-MW-3 1640	12/2/13	X	X	based on C1 & C2	
✓	A-074922-120213-CM-MW-2	12/2/13	X	X	Based on C1 & C2	
✓	A-074922-120213-CM-DUP	12/2/13	X	X	Based on C1 & C2	
	A-074922-120413-KW-MW-4-2 → -4 on label	12/4/13	X	X	Based on C1 or C2	

* Please report to Alice Flanagan with Pace Lenexa, KS 913-563-1409

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	[signature]	CRA	12/10/13	1500
Received by	[signature]	Isotech	12/11/13	1005
Relinquished by				
Received by				
Relinquished by				
Received by				

Pace Analytical Services, Inc.
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Lenexa, KS 66219
(913)599-5665

March 07, 2014

Jeff Walker
COP Conestoga-Rovers & Associa
6121 Indian School Rd. NE
Ste 200
Albuquerque, NM 87110

RE: Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on February 21, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan
alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Angela Bown, COP Conestoga-Rovers & Associa
Christine Matthews, CRA

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CERTIFICATIONS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60163489001	GW-074922-021814-BJ-MW-4(Z1)	Water	02/18/14 10:35	02/21/14 08:40
60163489002	GW-074922-021814-BJ-MW-4(Z2)	Water	02/18/14 11:50	02/21/14 08:40
60163489003	GW-074922-021814-CM-MW-1(Z2)	Water	02/18/14 12:10	02/21/14 08:40
60163489004	GW-074922-021814-CM-MW-1(Z3)	Water	02/18/14 13:55	02/21/14 08:40
60163489005	GW-074922-021914-CM-MW-1(Z1)	Water	02/19/14 10:05	02/21/14 08:40
60163489006	GW-074922-021914-CM-DUP	Water	02/19/14 10:30	02/21/14 08:40
60163489007	GW-074922-021914-BJ-MW-3(Z2)	Water	02/19/14 10:40	02/21/14 08:40
60163489008	GW-074922-021914-CM-MW-2(Z1)	Water	02/19/14 12:30	02/21/14 08:40

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SAMPLE ANALYTE COUNT

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60163489001	GW-074922-021814-BJ-MW-4(Z1)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
		EPA 300.0	OL	3
60163489002	GW-074922-021814-BJ-MW-4(Z2)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
		EPA 300.0	OL	3
60163489003	GW-074922-021814-CM-MW-1(Z2)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
60163489004	GW-074922-021814-CM-MW-1(Z3)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
60163489005	GW-074922-021914-CM-MW-1(Z1)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
60163489006	GW-074922-021914-CM-DUP	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
60163489007	GW-074922-021914-BJ-MW-3(Z2)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
60163489008	GW-074922-021914-CM-MW-2(Z1)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
		EPA 300.0	OL	3

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PROJECT NARRATIVE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 07, 2014

General Information:
8 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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: MPRP/26283

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60163489001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1336183)
  - Calcium, Dissolved
- MSD (Lab ID: 1336184)
  - Calcium, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 07, 2014

General Information:
8 samples were analyzed for SM 2320B. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

QC Batch: WET/46467

D6: The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
- DUP (Lab ID: 1338352)
  - Alkalinity,Bicarbonate (CaCO3)

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 07, 2014

General Information:
8 samples were analyzed for SM 2540C. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Method: EPA 300.0
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 07, 2014

General Information:
3 samples were analyzed for EPA 300.0. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021814-BJ-MW-4(Z1) **Lab ID: 60163489001** Collected: 02/18/14 10:35 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**99.9**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:12	7440-39-3	
Boron, Dissolved	ND	ug/L	100	1	02/27/14 13:15	02/28/14 11:12	7440-42-8	
Calcium, Dissolved	**682000**	ug/L	200	2	02/27/14 13:15	02/28/14 11:59	7440-70-2	M1
Magnesium, Dissolved	**15700**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:12	7439-95-4	
Potassium, Dissolved	**5090**	ug/L	500	1	02/27/14 13:15	02/28/14 11:12	7440-09-7	
Sodium, Dissolved	**229000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:12	7440-23-5	
Strontium, Dissolved	**6810**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:12	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**1200**	mg/L	40.0	2		03/03/14 13:29		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2630**	mg/L	5.0	1		02/25/14 17:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 12:38	24959-67-9	
Chloride	**16.7**	mg/L	2.0	2		03/05/14 14:56	16887-00-6	
Sulfate	**901**	mg/L	100	100		03/06/14 02:59	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021814-BJ-MW-4(Z2) **Lab ID: 60163489002** Collected: 02/18/14 11:50 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**71.6**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:26	7440-39-3	
Boron, Dissolved	**312**	ug/L	100	1	02/27/14 13:15	02/28/14 11:26	7440-42-8	
Calcium, Dissolved	**448000**	ug/L	100	1	02/27/14 13:15	02/28/14 11:26	7440-70-2	
Magnesium, Dissolved	**12000**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:26	7439-95-4	
Potassium, Dissolved	**8310**	ug/L	500	1	02/27/14 13:15	02/28/14 11:26	7440-09-7	
Sodium, Dissolved	**467000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:26	7440-23-5	
Strontium, Dissolved	**5690**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:26	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**1310**	mg/L	100	5		03/03/14 13:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3740**	mg/L	5.0	1		02/25/14 17:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 15:43	24959-67-9	
Chloride	**80.2**	mg/L	20.0	20		03/05/14 04:25	16887-00-6	
Sulfate	**910**	mg/L	100	100		03/06/14 03:45	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021814-CM-MW-1(Z2) **Lab ID: 60163489003** Collected: 02/18/14 12:10 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**47.8**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:30	7440-39-3	
Boron, Dissolved	**635**	ug/L	100	1	02/27/14 13:15	02/28/14 11:30	7440-42-8	
Calcium, Dissolved	**469000**	ug/L	100	1	02/27/14 13:15	02/28/14 11:30	7440-70-2	
Magnesium, Dissolved	**13000**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:30	7439-95-4	
Potassium, Dissolved	**17600**	ug/L	500	1	02/27/14 13:15	02/28/14 11:30	7440-09-7	
Sodium, Dissolved	**886000**	ug/L	1000	2	02/27/14 13:15	02/28/14 12:12	7440-23-5	
Strontium, Dissolved	**7230**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:30	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**351**	mg/L	20.0	1		03/03/14 11:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**6900**	mg/L	5.0	1		02/25/14 17:19		

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021814-CM-MW-1(Z3) **Lab ID: 60163489004** Collected: 02/18/14 13:55 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**179**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:34	7440-39-3	
Boron, Dissolved	**176**	ug/L	100	1	02/27/14 13:15	02/28/14 11:34	7440-42-8	
Calcium, Dissolved	**364000**	ug/L	100	1	02/27/14 13:15	02/28/14 11:34	7440-70-2	
Magnesium, Dissolved	**10700**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:34	7439-95-4	
Potassium, Dissolved	**18500**	ug/L	500	1	02/27/14 13:15	02/28/14 11:34	7440-09-7	
Sodium, Dissolved	**415000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:34	7440-23-5	
Strontium, Dissolved	**5580**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:34	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**879**	mg/L	40.0	2		03/04/14 13:46		D6
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3330**	mg/L	5.0	1		02/25/14 17:20		

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021914-CM-MW-1(Z1) **Lab ID: 60163489005** Collected: 02/19/14 10:05 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**43.4**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:37	7440-39-3	
Boron, Dissolved	**352**	ug/L	100	1	02/27/14 13:15	02/28/14 11:37	7440-42-8	
Calcium, Dissolved	**499000**	ug/L	200	2	02/27/14 13:15	02/28/14 12:16	7440-70-2	
Magnesium, Dissolved	**13600**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:37	7439-95-4	
Potassium, Dissolved	**18500**	ug/L	500	1	02/27/14 13:15	02/28/14 11:37	7440-09-7	
Sodium, Dissolved	**477000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:37	7440-23-5	
Strontium, Dissolved	**8490**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:37	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**207**	mg/L	20.0	1		03/03/14 11:14		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4920**	mg/L	5.0	1		02/26/14 14:59		

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021914-CM-DUP **Lab ID: 60163489006** Collected: 02/19/14 10:30 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**40.7**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:48	7440-39-3	
Boron, Dissolved	**344**	ug/L	100	1	02/27/14 13:15	02/28/14 11:48	7440-42-8	
Calcium, Dissolved	**498000**	ug/L	200	2	02/27/14 13:15	02/28/14 12:19	7440-70-2	
Magnesium, Dissolved	**12900**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:48	7439-95-4	
Potassium, Dissolved	**17700**	ug/L	500	1	02/27/14 13:15	02/28/14 11:48	7440-09-7	
Sodium, Dissolved	**460000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:48	7440-23-5	
Strontium, Dissolved	**8470**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:48	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**202**	mg/L	20.0	1		03/03/14 11:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4900**	mg/L	5.0	1		02/26/14 14:59		

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021914-BJ-MW-3(Z2) **Lab ID: 60163489007** Collected: 02/19/14 10:40 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**13.7**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:51	7440-39-3	
Boron, Dissolved	**308**	ug/L	100	1	02/27/14 13:15	02/28/14 11:51	7440-42-8	
Calcium, Dissolved	**433000**	ug/L	100	1	02/27/14 13:15	02/28/14 11:51	7440-70-2	
Magnesium, Dissolved	**10500**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:51	7439-95-4	
Potassium, Dissolved	**7180**	ug/L	500	1	02/27/14 13:15	02/28/14 11:51	7440-09-7	
Sodium, Dissolved	**467000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:51	7440-23-5	
Strontium, Dissolved	**7400**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:51	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**135**	mg/L	20.0	1		03/03/14 11:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4760**	mg/L	5.0	1		02/26/14 14:59		

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021914-CM-MW-2(Z1) **Lab ID: 60163489008** Collected: 02/19/14 12:30 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**232**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:55	7440-39-3	
Boron, Dissolved	**196**	ug/L	100	1	02/27/14 13:15	02/28/14 11:55	7440-42-8	
Calcium, Dissolved	**374000**	ug/L	100	1	02/27/14 13:15	02/28/14 11:55	7440-70-2	
Magnesium, Dissolved	**19200**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:55	7439-95-4	
Potassium, Dissolved	**7390**	ug/L	500	1	02/27/14 13:15	02/28/14 11:55	7440-09-7	
Sodium, Dissolved	**292000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:55	7440-23-5	
Strontium, Dissolved	**4000**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:55	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**1130**	mg/L	40.0	2		03/03/14 13:48		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3150**	mg/L	5.0	1		02/26/14 15:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 20:05	24959-67-9	
Chloride	**21.9**	mg/L	5.0	5		03/05/14 20:20	16887-00-6	
Sulfate	**273**	mg/L	20.0	20		03/05/14 05:57	14808-79-8	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: MPRP/26283 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004, 60163489005, 60163489006, 60163489007, 60163489008

METHOD BLANK: 1336181 Matrix: Water
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004, 60163489005, 60163489006, 60163489007, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium, Dissolved	ug/L	ND	10.0	02/28/14 11:06	
Boron, Dissolved	ug/L	ND	100	02/28/14 11:06	
Calcium, Dissolved	ug/L	ND	100	02/28/14 11:06	
Magnesium, Dissolved	ug/L	ND	50.0	02/28/14 11:06	
Potassium, Dissolved	ug/L	ND	500	02/28/14 11:06	
Sodium, Dissolved	ug/L	ND	500	02/28/14 11:06	
Strontium, Dissolved	ug/L	ND	10.0	02/28/14 11:06	

LABORATORY CONTROL SAMPLE: 1336182

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium, Dissolved	ug/L	1000	1050	105	80-120	
Boron, Dissolved	ug/L	1000	995	100	80-120	
Calcium, Dissolved	ug/L	10000	10200	102	80-120	
Magnesium, Dissolved	ug/L	10000	10100	101	80-120	
Potassium, Dissolved	ug/L	10000	10500	105	80-120	
Sodium, Dissolved	ug/L	10000	10500	105	80-120	
Strontium, Dissolved	ug/L	1000	1040	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1336183 1336184

Parameter	Units	60163489001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium, Dissolved	ug/L	99.9	1000	1000	1180	1180	108	109	75-125	1	20	
Boron, Dissolved	ug/L	ND	1000	1000	1180	1190	109	110	75-125	1	20	
Calcium, Dissolved	ug/L	682000	10000	10000	688000	689000	56	66	75-125	0	20	M1
Magnesium, Dissolved	ug/L	15700	10000	10000	26600	27000	109	113	75-125	2	20	
Potassium, Dissolved	ug/L	5090	10000	10000	16700	16800	116	118	75-125	1	20	
Sodium, Dissolved	ug/L	229000	10000	10000	240000	239000	104	97	75-125	0	20	
Strontium, Dissolved	ug/L	6810	1000	1000	7930	8000	112	118	75-125	1	20	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WET/46429 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489005, 60163489006, 60163489007, 60163489008

METHOD BLANK: 1337865 Matrix: Water
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489005, 60163489006, 60163489007, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	03/03/14 10:19	

SAMPLE DUPLICATE: 1337867

Parameter	Units	60163489001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	1200	1180	2	10	

SAMPLE DUPLICATE: 1337868

Parameter	Units	60163520002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	693	685	1	10	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WET/46467
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60163489004

METHOD BLANK: 1338350
Matrix: Water
Associated Lab Samples: 60163489004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	03/04/14 13:41	

SAMPLE DUPLICATE: 1338352

Parameter	Units	60163489004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	879	980	11	10	D6

SAMPLE DUPLICATE: 1338353

Parameter	Units	60163167010 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	721	738	2	10	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WET/46298 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004

METHOD BLANK: 1334616 Matrix: Water
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	02/25/14 17:09	

LABORATORY CONTROL SAMPLE: 1334617

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 1334624

Parameter	Units	60163285001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1410	1370	3	10	

SAMPLE DUPLICATE: 1334625

Parameter	Units	60163337002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	29100	29000	0	10	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WET/46338 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60163489005, 60163489006, 60163489007, 60163489008

METHOD BLANK: 1335261 Matrix: Water
Associated Lab Samples: 60163489005, 60163489006, 60163489007, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	02/26/14 14:59	

LABORATORY CONTROL SAMPLE: 1335262

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1060	106	80-120	

SAMPLE DUPLICATE: 1335265

Parameter	Units	60163520002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2460	2450	0	10	

SAMPLE DUPLICATE: 1335266

Parameter	Units	60163337001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	65900	66800	1	10	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WETA/28440 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60163489001, 60163489002, 60163489008

METHOD BLANK: 1338274 Matrix: Water
Associated Lab Samples: 60163489002, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	03/05/14 02:37	
Sulfate	mg/L	ND	1.0	03/05/14 02:37	

METHOD BLANK: 1339823 Matrix: Water
Associated Lab Samples: 60163489001, 60163489002, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	03/05/14 12:07	
Chloride	mg/L	ND	1.0	03/05/14 12:07	
Sulfate	mg/L	ND	1.0	03/05/14 12:07	

LABORATORY CONTROL SAMPLE: 1338275

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

LABORATORY CONTROL SAMPLE: 1339824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	5.4	107	90-110	
Chloride	mg/L	5	5.1	102	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

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QUALIFIERS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60163489001	GW-074922-021814-BJ-MW-4(Z1)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489002	GW-074922-021814-BJ-MW-4(Z2)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489003	GW-074922-021814-CM-MW-1(Z2)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489004	GW-074922-021814-CM-MW-1(Z3)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489005	GW-074922-021914-CM-MW-1(Z1)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489006	GW-074922-021914-CM-DUP	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489007	GW-074922-021914-BJ-MW-3(Z2)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489008	GW-074922-021914-CM-MW-2(Z1)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489001	GW-074922-021814-BJ-MW-4(Z1)	SM 2320B	WET/46429		
60163489002	GW-074922-021814-BJ-MW-4(Z2)	SM 2320B	WET/46429		
60163489003	GW-074922-021814-CM-MW-1(Z2)	SM 2320B	WET/46429		
60163489004	GW-074922-021814-CM-MW-1(Z3)	SM 2320B	WET/46467		
60163489005	GW-074922-021914-CM-MW-1(Z1)	SM 2320B	WET/46429		
60163489006	GW-074922-021914-CM-DUP	SM 2320B	WET/46429		
60163489007	GW-074922-021914-BJ-MW-3(Z2)	SM 2320B	WET/46429		
60163489008	GW-074922-021914-CM-MW-2(Z1)	SM 2320B	WET/46429		
60163489001	GW-074922-021814-BJ-MW-4(Z1)	SM 2540C	WET/46298		
60163489002	GW-074922-021814-BJ-MW-4(Z2)	SM 2540C	WET/46298		
60163489003	GW-074922-021814-CM-MW-1(Z2)	SM 2540C	WET/46298		
60163489004	GW-074922-021814-CM-MW-1(Z3)	SM 2540C	WET/46298		
60163489005	GW-074922-021914-CM-MW-1(Z1)	SM 2540C	WET/46338		
60163489006	GW-074922-021914-CM-DUP	SM 2540C	WET/46338		
60163489007	GW-074922-021914-BJ-MW-3(Z2)	SM 2540C	WET/46338		
60163489008	GW-074922-021914-CM-MW-2(Z1)	SM 2540C	WET/46338		
60163489001	GW-074922-021814-BJ-MW-4(Z1)	EPA 300.0	WETA/28440		
60163489002	GW-074922-021814-BJ-MW-4(Z2)	EPA 300.0	WETA/28440		
60163489008	GW-074922-021914-CM-MW-2(Z1)	EPA 300.0	WETA/28440		

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ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	414458	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021814-BJ-MW-4 (Z1)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/18/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.603			
Oxygen	0.13			
Nitrogen	56.58			
Carbon Dioxide	12.05			
Methane	30.04			
Ethane	0.540			
Ethylene	0.0002			
Propane	0.0495			
Propylene	nd			
Iso-butane	0.0024			
N-butane	0.0040			
Iso-pentane	nd			
N-pentane	0.0004			
Hexanes +	0.0002			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.54
Concentration of methane in water = 15 cc/L ; 10.0 ppm
Concentration of ethane in water = 0.30 cc/L ; 0.37 ppm
Concentration of ethylene in water = 0.0002 cc/L ; 0.0002 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	414459	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021814-BJ-MW-4 (Z2)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/18/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.0912			
Oxygen	0.14			
Nitrogen	90.48			
Carbon Dioxide	9.16			
Methane	0.118			
Ethane	0.0069			
Ethylene	nd			
Propane	0.0012			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.73
Concentration of methane in water = 0.039 cc/L ; 0.026 ppm
Concentration of ethane in water = 0.0024 cc/L ; 0.0030 ppm
Concentration of ethylene in water = < 0.0002 cc/L ; < 0.0002 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	414460	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021814-CM-MW-1 (Z2)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/18/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0244			
Oxygen	0.12			
Nitrogen	99.42			
Carbon Dioxide	0.42			
Methane	0.0146			
Ethane	0.0007			
Ethylene	nd			
Propane	0.0001			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.074 cc/L ; 0.049 ppm
Concentration of ethane in water = 0.0036 cc/L ; 0.0045 ppm
Concentration of ethylene in water = < 0.0006 cc/L ; < 0.0007 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	414461	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021814-CM-MW-1 (Z3)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/18/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0624			
Oxygen	0.18			
Nitrogen	99.24			
Carbon Dioxide	0.50			
Methane	0.0176			
Ethane	0.0007			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.032 cc/L ; 0.021 ppm
Concentration of ethane in water = 0.0014 cc/L ; 0.0017 ppm
Concentration of ethylene in water = < 0.0003 cc/L ; < 0.0003 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	414462	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021914-CM-MW-1 (Z1)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/19/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.19			
Oxygen	2.65			
Nitrogen	73.62			
Carbon Dioxide	6.97			
Methane	15.25			
Ethane	0.294			
Ethylene	0.0020			
Propane	0.0212			
Propylene	nd			
Iso-butane	0.0016			
N-butane	0.0024			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.75
Concentration of methane in water = 5.3 cc/L ; 3.5 ppm
Concentration of ethane in water = 0.11 cc/L ; 0.14 ppm
Concentration of ethylene in water = 0.0011 cc/L ; 0.0013 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	414463	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021914-CM-DUP				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/19/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.32			
Oxygen	3.15			
Nitrogen	71.06			
Carbon Dioxide	8.05			
Methane	16.10			
Ethane	0.288			
Ethylene	0.0021			
Propane	0.0210			
Propylene	nd			
Iso-butane	0.0017			
N-butane	0.0026			
Iso-pentane	0.0004			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.76
Concentration of methane in water = 5.0 cc/L ; 3.3 ppm
Concentration of ethane in water = 0.098 cc/L ; 0.12 ppm
Concentration of ethylene in water = 0.0011 cc/L ; 0.0013 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 414464 Job #: 24413 IS-68553 Co. Job#:
Sample Name: GW-074922-021914-BJ-MW-3 (Z2) Co. Lab#:
Company: Pace Analytical
API/Well:
Container: IsoFlask
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Sampled: 2/19/2014 Date Received: 2/21/2014 Date Reported: 3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.0747			
Oxygen	1.19			
Nitrogen	98.44			
Carbon Dioxide	0.29			
Methane	0.0072			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.70
Concentration of methane in water = 0.0025 cc/L ; 0.0016 ppm
Concentration of ethane in water = < 0.0001 cc/L ; < 0.0002 ppm
Concentration of ethylene in water = < 0.0002 cc/L ; < 0.0002 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	414465	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021914-CM-MW-2 (Z1)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/19/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.0770			
Oxygen	0.21			
Nitrogen	97.12			
Carbon Dioxide	2.55			
Methane	0.0396			
Ethane	0.0019			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.69
Concentration of methane in water = 0.015 cc/L ; 0.010 ppm
Concentration of ethane in water = 0.00080 cc/L ; 0.00099 ppm
Concentration of ethylene in water = < 0.0002 cc/L ; < 0.0002 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH

Send Data and Invoice to

Name: Christine Mathews
Company: Conestoga-Rovers & Assoc.
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: CM, BJ

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Dissolved Methane			Comments
	GW-074922-021814-BJ-MW-4(Z1)	2.18.14/1035	X			
	GW-074922-021814-BJ-MW-4(Z2)	2.18.14/1150	X			
	GW-074922-021814-CM-MW-1(Z2)	2.18.14/1210	X			
	GW-074922-021814-CM-MW-1(Z3)	2.18.14/1355	X			
	GW-074922-021914-CM-MW-1(Z1)	2.19.14/1005	X			
	GW-074922-021914-CM-MW-DUP	2.19.14/1030	X			*Please report and bill to Alice Flanagan with Pace Lenexa, KS 913-563-1409
	GW-074922-021914-BJ-MW-3(Z2)	2.19.14/1040	X			
	GW-074922-021914-CM-MW-2(Z1)	2.19.14/1230	X			

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	[signature]	CRA	2/20/14	1800
Received by	Pace Cal to	Kotech	2/21/14	0855
Relinquished by				
Received by				
Relinquished by				
Received by				

INVOICE

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: (913)599-5665

Pace Analytical™
www.pacelabs.com

Invoice Number: 146173482
Date: 12/23/2014
Total Amount Due: $2,400.00

Sold To:

Angela Bown
Conestoga Rovers & Associates
9033 Meridian Way
West Chester, OH 45069
513-942-4750

Please Remit To:

Pace Analytical Services, Inc.
P.O. Box 684056
Chicago, IL 60695-4056

Client Number/Client ID	Purchase Order No	Pace Project Mgr	Terms	Page
60-530540 / CRA_COP_NM	4071255	Alice Flanagan	Net 30 Days**	1

Client Project: 074922 San Juan 32-8 30 Area
Client Name: CRA Conoco New Mexico
Pace Project No: 60184352
Sample Received: 12/9/2014
Report Sent To: Christine Mathews, CRA
Comments:

ANALYTICAL CHARGES

Quantity	Unit	Description	Method	Matrix	Price	Total
8	Ea	Dissolved methane, Full GC, dD+O18		Water	$300.00	$2,400.00
					Analytical Subtotal	$2,400.00

Total Number of Charges 8 **Total Invoice Amount** **$2,400.00**

If you have any questions or to pay by credit card, please contact Alice Flanagan at Pace.
Phone: (913)563-1409 Email: alice.flanagan@pacelabs.com

****1.5% MONTHLY FINANCE CHARGE ASSESSED AFTER 30 DAYS OR TERMS OF CONTRACT.**
PLEASE REFERENCE THE INVOICE NUMBER ON ALL REMITTANCE ADVICE.

AN EQUAL OPPORTUNITY EMPLOYER

Please complete and return copy of invoice with your payment.

INVOICE TOTAL $2,400.00

Amount Paid: $ _____

Check No: _____

Customer No: 60-530540 Invoice No: 146173482

ISOTECH

Send Data and Invoice to

Name: Christine Mathews
Company: Conestoga-Rovers & Assoc.
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: C. Mathews & S. Zaldo

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Dissolved Methane	Analyses Requested: Oxygen & Hydrogen Isotopes 2H, 018, 016		Comments
	GW-074922-120114-CM-MW-2(Z1)	12/1/14 1325	X	X		
	GW-074922-120214-CM-MW-3(Z2)	12/2/14 1020	X	X		
	GW-074922-120214-CM-MW-1(Z1)	12/2/14 1225	X	X		
	GW-074922-120214-CM-MW-1(Z2)	12/2/14 1435	X	X		
	GW-074922-120314-CM-MW-1(Z3)	12/3/14 0945	X	X		
	GW-074922-120314-CM-MW-4(Z1)	12/3/14 1215	X	X		
	GW-074922-120314-CM-MW-4(Z2)	12/3/14 1345	X	X		
	GW-074922-120214-CM-DUP	12/2/14 —	X	X		* Please report and bill to Alice Flanagan with Pace Lenexa, KS 913-563-1409

* standard turn around

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	Christine Mathews	CRA	12/8/14	1500
Received by	Jessica Pickett / Isotech Labs		DEC 9 2014	1020
Relinquished by				
Received by				
Relinquished by				
Received by				

INVOICE

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: (913)599-5665

Pace Analytical™
www.pacelabs.com

Invoice Number: 156174685
Date: 01/20/2015
Total Amount Due: $4,680.00

Sold To:

Angela Bown
Conestoga Rovers & Associates
9033 Meridian Way
West Chester, OH 45069
513-942-4750

Please Remit To:

Pace Analytical Services, Inc.
P.O. Box 684056
Chicago, IL 60695-4056

Client Number/Client ID	*Purchase Order No*	*Pace Project Mgr*	*Terms*	*Page*
60-530540 / CRA_COP_NM	4071256	Alice Flanagan	Net 30 Days**	1

Client Project: 074922 San Juan 32-8 30 Area
Pace Project No: 60184338
Report Sent To: Christine Mathews, CRA
Comments:

Client Name: CRA Conoco New Mexico
Sample Received: 12/9/2014

ANALYTICAL CHARGES

Quantity	Unit	Description	Method	Matrix	Price	Total
1	Ea	Full GC, C13&dD of C1&C2,C13 of CO2		Air	$840.00	$840.00
4	Ea	Full GC, C13&dD of C1&C2,C13 of CO2		Air	$960.00	$3,840.00
					Analytical Subtotal	$4,680.00

Total Number of Charges 5 **Total Invoice Amount** **$4,680.00**

If you have any questions or to pay by credit card, please contact Alice Flanagan at Pace.
Phone: (913)563-1409 Email: alice.flanagan@pacelabs.com

****1.5% MONTHLY FINANCE CHARGE ASSESSED AFTER 30 DAYS OR TERMS OF CONTRACT.**
PLEASE REFERENCE THE INVOICE NUMBER ON ALL REMITTANCE ADVICE.

AN EQUAL OPPORTUNITY EMPLOYER

Please complete and return copy of invoice with your payment.

INVOICE TOTAL $4,680.00

Amount Paid: $ _____

Check No: _____

Customer No: 60-530540 Invoice No: 156174685

ISOTECH

Send Data and Invoice to

Name: Christine Mathews
Company: Conestoga-Rovers & Assoc.
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: C. Mathews & S. Zaldo

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Carbon and hydrogen isotopes C1 & C2	Hydrocarbons Fixed Gases & BTU	Stable carbon isotope of CO_2	Comments
	A-074922-120114-CM-MW-2	12/1/14 1040	X	X	X	
	A-074922-120114-CM-MW-3	12/1/14 1055	X	X	X	
	A-074922-120114-CM-MW-4(1)	12/1/14 1130	X	X	X	
	A-074922-120114-CM-MW-4(2)	12/1/14 1135	X	X	X	
	A-074922-120114-CM-DUP	12/1/14 —	X	X	X	
						* Please report and bill to Alice Flanagan with Pace Lenexa, KS 913-563-1409

* Standard turn around

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by		CRA	12/8/14	1500
Received by	Jessica Pickett / Isotech Labs		DEC 9 2014	1020
Relinquished by				
Received by				
Relinquished by				
Received by				

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

January 20, 2015

Christine Mathews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60184338

Dear Christine Mathews:
Enclosed are the analytical results for sample(s) received by the laboratory on December 09, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan
alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Angela Bown, COP Conestoga-Rovers & Associa
Angela Bown, Conestoga Rovers & Associates
Chris Fetters, COP Conestoga-Rovers & Associa
Jeff Walker, COP Conestoga-Rovers & Associa

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60184338

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60184338001	A-074922-120114-CM-MW-2	Air	12/01/14 10:40	12/09/14 10:20
60184338002	A-074922-120114-CM-MW-3	Air	12/01/14 10:55	12/09/14 10:20
60184338003	A-074922-120114-CM-MW-4(1)	Air	12/01/14 11:30	12/09/14 10:20
60184338004	A-074922-120114-CM-MW-4(2)	Air	12/01/14 11:35	12/09/14 10:20
60184338005	A-074922-120114-CM-DUP	Air	12/01/14 00:00	12/09/14 10:20

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without the written consent of Pace Analytical Services, Inc..

9+10

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project:
Pace Project No.:

Method:
Description:
Client:
Date:

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

NOT one dD of ethane value was not obtained for A- 74 22-12 114-CM-M -3 due to its concentration.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ISOTECH

Send Data and Invoice to

Name: Christine Mathews
Company: Conestoga-Rovers & Assoc.
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: C. Mathews & S. Zaldo

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Carbon & hydrogen isotopes C1 & C2	Hydrocarbons fixed gases SG & BTU	Stable carbon isotope of CO2	Comments
	A-074922-120114-CM-MW-2	12/1/14 1040	X	X	X	
	A-074922-120114-CM-MW-3	12/1/14 1055	X	X	X	
	A-074922-120114-CM-MW-4(1)	12/1/14 1130	X	X	X	
	A-074922-120114-CM-MW-4(2)	12/1/14 1135	X	X	X	
	A-074922-120114-CM-DUP	12/1/14 —	X	X	X	
						* Please report and bill to Alice Hanagan with Pace Lenexa, KS 913-563-1409

* Standard turn around

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	Christine Mathews	CRA	12/8/14	1500
Received by	Jessica Pickett / Isotech Labs		DEC 9 2014	1020
Relinquished by				
Received by				
Relinquished by				
Received by				

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	476312	Job #: 27513	IS-68553	Co. Job#:	
Sample Name:	A-074922-120114-CM-MW-2			Co. Lab#:	
Company:	Pace Analytical				
API/Well:					
Container:	T Bag				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation:					
Sampling Point:					
Date Sampled:	12/01/2014	Date Received:	12/09/2014	Date Reported:	1/19/2015

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0231			
Hydrogen	nd			
Argon	0.291			
Oxygen	3.51			
Nitrogen	24.47			
Carbon Dioxide	1.52	-15.87		
Methane	69.24	-36.71	-169.7	
Ethane	0.828	-24.41	-126.0	
Ethylene	nd			
Propane	0.0852			
Propylene	0.0001			
Iso-butane	0.0244			
N-butane	0.0080			
Iso-pentane	0.0027			
N-pentane	0.0010			
Hexanes +	0.0007			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 720

Specific gravity, calculated: 0.697

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 476313 Job #: 27513 IS-68553 Co. Job#:
Sample Name: A-074922-120114-CM-MW-3 Co. Lab#:
Company: Pace Analytical
API/Well:
Container: T Bag
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation:
Sampling Point:
Date Sampled: 12/01/2014 Date Received: 12/09/2014 Date Reported: 1/19/2015

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.867			
Oxygen	14.71			
Nitrogen	68.69			
Carbon Dioxide	4.14	-27.74		
Methane	11.34	-34.67	-164.1	
Ethane	0.198	-22.48		
Ethylene	nd			
Propane	0.0382			
Propylene	nd			
Iso-butane	0.0093			
N-butane	0.0037			
Iso-pentane	0.0021			
N-pentane	0.0005			
Hexanes +	0.0008			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 120
Specific gravity, calculated: 0.968

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	476314	Job #:	27513	IS-68553	Co. Job#:
Sample Name:	A-074922-120114-CM-MW-4 (1)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	T Bag				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation:					
Sampling Point:					
Date Sampled:	12/01/2014	Date Received:	12/09/2014	Date Reported:	1/19/2015

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.349			
Oxygen	1.37			
Nitrogen	31.43			
Carbon Dioxide	0.93	-12.16		
Methane	64.71	-36.45	-168.7	
Ethane	1.06	-23.84	-132.8	
Ethylene	nd			
Propane	0.115			
Propylene	nd			
Iso-butane	0.0221			
N-butane	0.0101			
Iso-pentane	0.0047			
N-pentane	0.0015			
Hexanes +	0.0024			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 679

Specific gravity, calculated: 0.710

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	476315	Job #:	27513	IS-68553	Co. Job#:
Sample Name:	A-074922-120114-CM-MW-4 (2)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	T Bag				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation:					
Sampling Point:					
Date Sampled:	12/01/2014	Date Received:	12/09/2014	Date Reported:	1/19/2015

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.191			
Oxygen	0.034			
Nitrogen	17.96			
Carbon Dioxide	1.16	-10.40		
Methane	79.13	-36.49	-171.7	
Ethane	1.32	-23.78	-132.7	
Ethylene	nd			
Propane	0.147			
Propylene	nd			
Iso-butane	0.0295			
N-butane	0.0134			
Iso-pentane	0.0061			
N-pentane	0.0020			
Hexanes +	0.0029			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 831

Specific gravity, calculated: 0.650

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	476316	Job #:	27513	IS-68553	Co. Job#:
Sample Name:	A-074922-120114-CM-DUP				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	T Bag				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation:					
Sampling Point:					
Date Sampled:	12/01/2014	Date Received:	12/09/2014	Date Reported:	1/19/2015

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	0.0443			
Hydrogen	nd			
Argon	0.250			
Oxygen	4.03			
Nitrogen	41.67			
Carbon Dioxide	0.77	-22.94		
Methane	52.13	-40.34	-178.2	
Ethane	0.988	-25.41	-137.5	
Ethylene	nd			
Propane	0.0880			
Propylene	nd			
Iso-butane	0.0139			
N-butane	0.0075			
Iso-pentane	0.0040			
N-pentane	0.0010			
Hexanes +	0.0020			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 549

Specific gravity, calculated: 0.764

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 23, 2014

Christine Mathews
CRA
6121 Indian School Rd NE
Suite 200
Albuquerque, NM 87110

RE: Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60184352

Dear Christine Mathews:
Enclosed are the analytical results for sample(s) received by the laboratory on December 09, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan
alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Angela Bown, COP Conestoga-Rovers & Associa
Angela Bown, Conestoga Rovers & Associates
Chris Fetters, COP Conestoga-Rovers & Associa
Jeff Walker, COP Conestoga-Rovers & Associa

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 074922 San Juan 32-8 30 Area
Pace Project No.: 60184352

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60184352001	GW-074922-120114-CM-MW-2(Z1)	Water	12/01/14 13:25	12/09/14 10:20
60184352002	GW-074922-120214-CM-MW-3(Z2)	Water	12/02/14 10:20	12/09/14 10:20
60184352003	GW-074922-120214-CM-MW-1(Z1)	Water	12/02/14 12:25	12/09/14 10:20
60184352004	GW-074922-120214-CM-MW-1(Z2)	Water	12/02/14 14:35	12/09/14 10:20
60184352005	GW-074922-120314-CM-MW-1(Z3)	Water	12/03/14 09:45	12/09/14 10:20
60184352006	GW-074922-120314-CM-MW-4(Z1)	Water	12/03/14 12:15	12/09/14 10:20
60184352007	GW-074922-120314-CM-MW-4(Z2)	Water	12/03/14 13:45	12/09/14 10:20
60184352008	GW-074922-120314-CM-DUP	Water	12/02/14 00:00	12/09/14 10:20

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PROJECT NARRATIVE

Project:
Pace Project No.:

Method:
Description:
Client:
Date:

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

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950

ISOTECH

Send Data and Invoice to

Name: Christine Mathews
Company: Conestoga-Rovers & Assoc.
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: C. Mathews & S. Zdido

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Dissolved Methane	Analyses Requested: Oxygen & hydrogen isotopes 2H, 018, 016		Comments
	GW-074922-120114-CM-MW-2(Z1)	12/1/14 1325	X	X		
	GW-074922-120214-CM-MW-3(Z2)	12/2/14 1020	X	X		
	GW-074922-120214-CM-MW-1(Z1)	12/2/14 1225	X	X		
	GW-074922-120214-CM-MW-1(Z2)	12/2/14 1435	X	X		
	GW-074922-120314-CM-MW-1(Z3)	12/3/14 0945	X	X		
	GW-074922-120314-CM-MW-4(Z1)	12/3/14 1215	X	X		
	GW-074922-120314-CM-MW-4(Z2)	12/3/14 1345	X	X		
	GW-074922-120214-CM-DUP	12/2/14 —	X	X		* Please report and bill to Alice Flanagan with Pace Lenexa, KS

* standard turn around 913-563-1409

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by		CRA	12/8/14	1500
Received by	Jessica Pickett / Isotech Labs		DEC 9 2014	1020
Relinquished by				
Received by				
Relinquished by				
Received by				

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 476317 Job #: 27514 IS-68553 Co. Job#:
Sample Name: GW-074922-120114-CM-MW-2 (Z1) Co. Lab#:
Company: Pace Analytical
API/Well:
Container: IsoFlask
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Sampled: 12/01/2014 Date Received: 12/09/2014 Date Reported: 12/22/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0094			
Oxygen	nd			
Nitrogen	93.12			
Carbon Dioxide	4.85			
Methane	2.02			
Ethane	0.0035			
Ethylene	nd			
Propane	0.0005			
Propylene	nd			
Iso-butane	nd			
N-butane	0.0001			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-90.6	-11.75

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 21 Specific gravity, calculated: 0.986

Remarks:
Concentration of methane in water = 7.1 cc/L ; 4.7 ppm
Concentration of ethane in water = 0.013 cc/L ; 0.016 ppm
Concentration of propane in water = 0.0018 cc/L ; 0.0033 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	476318	Job #:	27514	IS-68553	Co. Job#:
Sample Name:	GW-074922-120214-CM-MW-3 (Z2)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/02/2014	Date Received:	12/09/2014	Date Reported:	12/22/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.140			
Oxygen	0.32			
Nitrogen	98.29			
Carbon Dioxide	1.07			
Methane	0.180			
Ethane	0.0038			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-101.9	-13.36

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 2 Specific gravity, calculated: 0.973

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.74
Concentration of methane in water = 0.074 cc/L ; 0.049 ppm
Concentration of ethane in water = 0.0017 cc/L ; 0.0022 ppm
Concentration of propane in water = < 0.0002 cc/L ; < 0.0003 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 476319 Job #: 27514 IS-68553 Co. Job#:
Sample Name: GW-074922-120214-CM-MW-1 (Z1) Co. Lab#:
Company: Pace Analytical
API/Well:
Container: IsoFlask
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Sampled: 12/02/2014 Date Received: 12/09/2014 Date Reported: 12/22/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.738			
Oxygen	0.27			
Nitrogen	41.00			
Carbon Dioxide	49.29			
Methane	8.46			
Ethane	0.202			
Ethylene	0.0122			
Propane	0.0190			
Propylene	nd			
Iso-butane	0.0023			
N-butane	0.0023			
Iso-pentane	0.0004			
N-pentane	nd			
Hexanes +	nd			
Water			-99.4	-12.99

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 90 Specific gravity, calculated: 1.208

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.74
Concentration of methane in water = 3.4 cc/L ; 2.3 ppm
Concentration of ethane in water = 0.088 cc/L ; 0.11 ppm
Concentration of propane in water = 0.0078 cc/L ; 0.014 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	476320	Job #:	27514	IS-68553	Co. Job#:
Sample Name:	GW-074922-120214-CM-MW-1 (Z2)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/02/2014	Date Received:	12/09/2014	Date Reported:	12/22/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.0906			
Oxygen	0.045			
Nitrogen	96.77			
Carbon Dioxide	2.40			
Methane	0.671			
Ethane	0.0223			
Ethylene	0.0005			
Propane	0.0028			
Propylene	nd			
Iso-butane	0.0002			
N-butane	0.0005			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-104.5	-13.65

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 7 Specific gravity, calculated: 0.978

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.58
Concentration of methane in water = 0.63 cc/L ; 0.42 ppm
Concentration of ethane in water = 0.022 cc/L ; 0.028 ppm
Concentration of propane in water = 0.0027 cc/L ; 0.0050 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	476321	Job #:	27514	IS-68553	Co. Job#:
Sample Name:	GW-074922-120314-CM-MW-1 (Z3)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2014	Date Received:	12/09/2014	Date Reported:	12/22/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0298			
Oxygen	nd			
Nitrogen	99.64			
Carbon Dioxide	0.27			
Methane	0.0571			
Ethane	0.0016			
Ethylene	nd			
Propane	0.0002			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-96.7	-12.69

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1 Specific gravity, calculated: 0.969

Remarks:
Concentration of methane in water = 0.16 cc/L ; 0.11 ppm
Concentration of ethane in water = 0.0047 cc/L ; 0.0058 ppm
Concentration of propane in water = 0.00056 cc/L ; 0.0010 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	476322	Job #:	27514	IS-68553	Co. Job#:
Sample Name:	GW-074922-120314-CM-MW-4 (Z1)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/03/2014	Date Received:	12/09/2014	Date Reported:	12/22/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	0.0310			
Hydrogen	nd			
Argon	0.0373			
Oxygen	nd			
Nitrogen	98.02			
Carbon Dioxide	1.16			
Methane	0.721			
Ethane	0.0235			
Ethylene	nd			
Propane	0.0028			
Propylene	nd			
Iso-butane	0.0003			
N-butane	0.0003			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-90.8	-11.70

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 8 Specific gravity, calculated: 0.971

Remarks:
Concentration of methane in water = 2.3 cc/L ; 1.5 ppm
Concentration of ethane in water = 0.077 cc/L ; 0.096 ppm
Concentration of propane in water = 0.0089 cc/L ; 0.016 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 476323 Job #: 27514 IS-68553 Co. Job#:
Sample Name: GW-074922-120314-CM-MW-4 (Z2) Co. Lab#:
Company: Pace Analytical
API/Well:
Container: IsoFlask
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Sampled: 12/03/2014 Date Received: 12/09/2014 Date Reported: 12/22/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.0929			
Oxygen	0.044			
Nitrogen	65.94			
Carbon Dioxide	12.02			
Methane	21.81			
Ethane	0.0853			
Ethylene	nd			
Propane	0.0086			
Propylene	nd			
Iso-butane	0.0008			
N-butane	0.0005			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			
Water			-95.3	-12.37

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 223 Specific gravity, calculated: 0.944

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.61
Concentration of methane in water = 15 cc/L ; 9.7 ppm
Concentration of ethane in water = 0.061 cc/L ; 0.076 ppm
Concentration of propane in water = 0.0057 cc/L ; 0.011 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	476324	Job #:	27514	IS-68553	Co. Job#:
Sample Name:	GW-074922-120214-CM-DUP				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	12/02/2014	Date Received:	12/09/2014	Date Reported:	12/22/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.890			
Oxygen	4.85			
Nitrogen	53.88			
Carbon Dioxide	31.77			
Methane	8.40			
Ethane	0.185			
Ethylene	0.0062			
Propane	0.0162			
Propylene	nd			
Iso-butane	0.0018			
N-butane	0.0022			
Iso-pentane	0.0004			
N-pentane	nd			
Hexanes +	nd			
Water			-98.9	-13.01

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 89 Specific gravity, calculated: 1.119

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.74
Concentration of methane in water = 3.9 cc/L ; 2.6 ppm
Concentration of ethane in water = 0.092 cc/L ; 0.12 ppm
Concentration of propane in water = 0.0077 cc/L ; 0.014 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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March 31, 2014

Jeff Walker
COP Conestoga-Rovers & Associa
6121 Indian School Rd. NE
Ste 200
Albuquerque, NM 87110

RE: Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Dear Jeff Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on February 21, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

Alice Flanagan
alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Angela Bown, COP Conestoga-Rovers & Associa
Christine Matthews, CRA

NELAP ACCREDITED TNI LABORATORY

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60163489001	GW-074922-021814-BJ-MW-4(Z1)	Water	02/18/14 10:35	02/21/14 08:40
60163489002	GW-074922-021814-BJ-MW-4(Z2)	Water	02/18/14 11:50	02/21/14 08:40
60163489003	GW-074922-021814-CM-MW-1(Z2)	Water	02/18/14 12:10	02/21/14 08:40
60163489004	GW-074922-021814-CM-MW-1(Z3)	Water	02/18/14 13:55	02/21/14 08:40
60163489005	GW-074922-021914-CM-MW-1(Z1)	Water	02/19/14 10:05	02/21/14 08:40
60163489006	GW-074922-021914-CM-DUP	Water	02/19/14 10:30	02/21/14 08:40
60163489007	GW-074922-021914-BJ-MW-3(Z2)	Water	02/19/14 10:40	02/21/14 08:40
60163489008	GW-074922-021914-CM-MW-2(Z1)	Water	02/19/14 12:30	02/21/14 08:40

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SAMPLE ANALYTE COUNT

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60163489001	GW-074922-021814-BJ-MW-4(Z1)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60163489002	GW-074922-021814-BJ-MW-4(Z2)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60163489003	GW-074922-021814-CM-MW-1(Z2)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60163489004	GW-074922-021814-CM-MW-1(Z3)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60163489005	GW-074922-021914-CM-MW-1(Z1)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60163489006	GW-074922-021914-CM-DUP	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60163489007	GW-074922-021914-BJ-MW-3(Z2)	EPA 6010	JGP	7
		SM 2320B	DJR	1
		SM 2540C	JMC1	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3
60163489008	GW-074922-021914-CM-MW-2(Z1)	EPA 6010	JGP	7
		SM 2320B	DJR	1

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SAMPLE ANALYTE COUNT

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 2540C	JMC1	1
		SM 4500-S-2 D	OL	1
		EPA 300.0	OL	3

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PROJECT NARRATIVE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 31, 2014

General Information:
8 samples were analyzed for EPA 6010. 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.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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: MPRP/26283

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60163489001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1336183)
  - Calcium, Dissolved
- MSD (Lab ID: 1336184)
  - Calcium, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Method: **SM 2320B**
Description: 2320B Alkalinity
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 31, 2014

General Information:
8 samples were analyzed for SM 2320B. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

QC Batch: WET/46467

D6: The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 1338352)
  - Alkalinity,Bicarbonate (CaCO3)

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 31, 2014

General Information:
8 samples were analyzed for SM 2540C. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 31, 2014

General Information:
8 samples were analyzed for SM 4500-S-2 D. 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.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- GW-074922-021814-BJ-MW-4(Z1) (Lab ID: 60163489001)
- GW-074922-021814-BJ-MW-4(Z2) (Lab ID: 60163489002)
- GW-074922-021814-CM-MW-1(Z2) (Lab ID: 60163489003)
- GW-074922-021814-CM-MW-1(Z3) (Lab ID: 60163489004)
- GW-074922-021914-BJ-MW-3(Z2) (Lab ID: 60163489007)
- GW-074922-021914-CM-DUP (Lab ID: 60163489006)
- GW-074922-021914-CM-MW-1(Z1) (Lab ID: 60163489005)
- GW-074922-021914-CM-MW-2(Z1) (Lab ID: 60163489008)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

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

Additional Comments:

Workorder Comments:

Sulfide by method SM 4500 S2D was requested on the chain of custody. Lab missed scheduling the analysis on receipt, samples were run for sulfide outside the holding time.

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PROJECT NARRATIVE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: March 31, 2014

General Information:
8 samples were analyzed for EPA 300.0. 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.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, 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.

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021814-BJ-MW-4(Z1) **Lab ID: 60163489001** Collected: 02/18/14 10:35 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**99.9**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:12	7440-39-3	
Boron, Dissolved	ND	ug/L	100	1	02/27/14 13:15	02/28/14 11:12	7440-42-8	
Calcium, Dissolved	**682000**	ug/L	200	2	02/27/14 13:15	02/28/14 11:59	7440-70-2	M1
Magnesium, Dissolved	**15700**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:12	7439-95-4	
Potassium, Dissolved	**5090**	ug/L	500	1	02/27/14 13:15	02/28/14 11:12	7440-09-7	
Sodium, Dissolved	**229000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:12	7440-23-5	
Strontium, Dissolved	**6810**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:12	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**1200**	mg/L	40.0	2		03/03/14 13:29		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2630**	mg/L	5.0	1		02/25/14 17:19		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**70.4**	mg/L	5.0	100		03/18/14 14:11	18496-25-8	H3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 12:38	24959-67-9	
Chloride	**16.7**	mg/L	2.0	2		03/05/14 14:56	16887-00-6	
Sulfate	**901**	mg/L	100	100		03/06/14 02:59	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021814-BJ-MW-4(Z2) **Lab ID: 60163489002** Collected: 02/18/14 11:50 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**71.6**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:26	7440-39-3	
Boron, Dissolved	**312**	ug/L	100	1	02/27/14 13:15	02/28/14 11:26	7440-42-8	
Calcium, Dissolved	**448000**	ug/L	100	1	02/27/14 13:15	02/28/14 11:26	7440-70-2	
Magnesium, Dissolved	**12000**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:26	7439-95-4	
Potassium, Dissolved	**8310**	ug/L	500	1	02/27/14 13:15	02/28/14 11:26	7440-09-7	
Sodium, Dissolved	**467000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:26	7440-23-5	
Strontium, Dissolved	**5690**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:26	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**1310**	mg/L	100	5		03/03/14 13:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3740**	mg/L	5.0	1		02/25/14 17:19		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**146**	mg/L	5.0	100		03/18/14 14:11	18496-25-8	H3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 15:43	24959-67-9	
Chloride	**80.2**	mg/L	20.0	20		03/05/14 04:25	16887-00-6	
Sulfate	**910**	mg/L	100	100		03/06/14 03:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021814-CM-MW-1(Z2) **Lab ID: 60163489003** Collected: 02/18/14 12:10 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**47.8**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:30	7440-39-3	
Boron, Dissolved	**635**	ug/L	100	1	02/27/14 13:15	02/28/14 11:30	7440-42-8	
Calcium, Dissolved	**469000**	ug/L	100	1	02/27/14 13:15	02/28/14 11:30	7440-70-2	
Magnesium, Dissolved	**13000**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:30	7439-95-4	
Potassium, Dissolved	**17600**	ug/L	500	1	02/27/14 13:15	02/28/14 11:30	7440-09-7	
Sodium, Dissolved	**886000**	ug/L	1000	2	02/27/14 13:15	02/28/14 12:12	7440-23-5	
Strontium, Dissolved	**7230**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:30	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**351**	mg/L	20.0	1		03/03/14 11:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**6900**	mg/L	5.0	1		02/25/14 17:19		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**2.3**	mg/L	0.25	5		03/18/14 14:11	18496-25-8	H3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 16:13	24959-67-9	
Chloride	**72.7**	mg/L	20.0	20		03/05/14 04:40	16887-00-6	
Sulfate	**4900**	mg/L	1000	1000		03/06/14 04:01	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021814-CM-MW-1(Z3) **Lab ID: 60163489004** Collected: 02/18/14 13:55 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**179**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:34	7440-39-3	
Boron, Dissolved	**176**	ug/L	100	1	02/27/14 13:15	02/28/14 11:34	7440-42-8	
Calcium, Dissolved	**364000**	ug/L	100	1	02/27/14 13:15	02/28/14 11:34	7440-70-2	
Magnesium, Dissolved	**10700**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:34	7439-95-4	
Potassium, Dissolved	**18500**	ug/L	500	1	02/27/14 13:15	02/28/14 11:34	7440-09-7	
Sodium, Dissolved	**415000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:34	7440-23-5	
Strontium, Dissolved	**5580**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:34	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**879**	mg/L	40.0	2		03/04/14 13:46		D6
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3330**	mg/L	5.0	1		02/25/14 17:20		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**3.2**	mg/L	0.25	5		03/18/14 14:11	18496-25-8	H3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 16:44	24959-67-9	
Chloride	**150**	mg/L	20.0	20		03/05/14 04:55	16887-00-6	
Sulfate	**1050**	mg/L	100	100		03/07/14 16:12	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021914-CM-MW-1(Z1) **Lab ID: 60163489005** Collected: 02/19/14 10:05 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**43.4**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:37	7440-39-3	
Boron, Dissolved	**352**	ug/L	100	1	02/27/14 13:15	02/28/14 11:37	7440-42-8	
Calcium, Dissolved	**499000**	ug/L	200	2	02/27/14 13:15	02/28/14 12:16	7440-70-2	
Magnesium, Dissolved	**13600**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:37	7439-95-4	
Potassium, Dissolved	**18500**	ug/L	500	1	02/27/14 13:15	02/28/14 11:37	7440-09-7	
Sodium, Dissolved	**477000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:37	7440-23-5	
Strontium, Dissolved	**8490**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:37	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**207**	mg/L	20.0	1		03/03/14 11:14		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4920**	mg/L	5.0	1		02/26/14 14:59		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**0.82**	mg/L	0.050	1		03/18/14 14:11	18496-25-8	H3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 18:01	24959-67-9	
Chloride	**39.0**	mg/L	5.0	5		03/05/14 18:17	16887-00-6	
Sulfate	**3240**	mg/L	500	500		03/06/14 04:16	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021914-CM-DUP **Lab ID: 60163489006** Collected: 02/19/14 10:30 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**40.7**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:48	7440-39-3	
Boron, Dissolved	**344**	ug/L	100	1	02/27/14 13:15	02/28/14 11:48	7440-42-8	
Calcium, Dissolved	**498000**	ug/L	200	2	02/27/14 13:15	02/28/14 12:19	7440-70-2	
Magnesium, Dissolved	**12900**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:48	7439-95-4	
Potassium, Dissolved	**17700**	ug/L	500	1	02/27/14 13:15	02/28/14 11:48	7440-09-7	
Sodium, Dissolved	**460000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:48	7440-23-5	
Strontium, Dissolved	**8470**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:48	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**202**	mg/L	20.0	1		03/03/14 11:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4900**	mg/L	5.0	1		02/26/14 14:59		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**0.75**	mg/L	0.050	1		03/18/14 14:12	18496-25-8	H3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 18:32	24959-67-9	
Chloride	**36.2**	mg/L	5.0	5		03/05/14 18:48	16887-00-6	
Sulfate	**5260**	mg/L	500	500		03/05/14 19:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021914-BJ-MW-3(Z2) **Lab ID: 60163489007** Collected: 02/19/14 10:40 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**13.7**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:51	7440-39-3	
Boron, Dissolved	**308**	ug/L	100	1	02/27/14 13:15	02/28/14 11:51	7440-42-8	
Calcium, Dissolved	**433000**	ug/L	100	1	02/27/14 13:15	02/28/14 11:51	7440-70-2	
Magnesium, Dissolved	**10500**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:51	7439-95-4	
Potassium, Dissolved	**7180**	ug/L	500	1	02/27/14 13:15	02/28/14 11:51	7440-09-7	
Sodium, Dissolved	**467000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:51	7440-23-5	
Strontium, Dissolved	**7400**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:51	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**135**	mg/L	20.0	1		03/03/14 11:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**4760**	mg/L	5.0	1		02/26/14 14:59		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**0.15**	mg/L	0.050	1		03/18/14 14:12	18496-25-8	H3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 19:18	24959-67-9	
Chloride	**11.5**	mg/L	1.0	1		03/05/14 19:18	16887-00-6	
Sulfate	**6210**	mg/L	500	500		03/05/14 19:49	14808-79-8	

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ANALYTICAL RESULTS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Sample: GW-074922-021914-CM-MW-2(Z1) **Lab ID: 60163489008** Collected: 02/19/14 12:30 Received: 02/21/14 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Barium, Dissolved	**232**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:55	7440-39-3	
Boron, Dissolved	**196**	ug/L	100	1	02/27/14 13:15	02/28/14 11:55	7440-42-8	
Calcium, Dissolved	**374000**	ug/L	100	1	02/27/14 13:15	02/28/14 11:55	7440-70-2	
Magnesium, Dissolved	**19200**	ug/L	50.0	1	02/27/14 13:15	02/28/14 11:55	7439-95-4	
Potassium, Dissolved	**7390**	ug/L	500	1	02/27/14 13:15	02/28/14 11:55	7440-09-7	
Sodium, Dissolved	**292000**	ug/L	500	1	02/27/14 13:15	02/28/14 11:55	7440-23-5	
Strontium, Dissolved	**4000**	ug/L	10.0	1	02/27/14 13:15	02/28/14 11:55	7440-24-6	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	**1130**	mg/L	40.0	2		03/03/14 13:48		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**3150**	mg/L	5.0	1		02/26/14 15:00		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D							
Sulfide, Total	**10.1**	mg/L	0.50	10		03/18/14 14:12	18496-25-8	H3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	ND	mg/L	1.0	1		03/05/14 20:05	24959-67-9	
Chloride	**21.9**	mg/L	5.0	5		03/05/14 20:20	16887-00-6	
Sulfate	**273**	mg/L	20.0	20		03/05/14 05:57	14808-79-8	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: MPRP/26283 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004, 60163489005, 60163489006, 60163489007, 60163489008

METHOD BLANK: 1336181 Matrix: Water
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004, 60163489005, 60163489006, 60163489007, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium, Dissolved	ug/L	ND	10.0	02/28/14 11:06	
Boron, Dissolved	ug/L	ND	100	02/28/14 11:06	
Calcium, Dissolved	ug/L	ND	100	02/28/14 11:06	
Magnesium, Dissolved	ug/L	ND	50.0	02/28/14 11:06	
Potassium, Dissolved	ug/L	ND	500	02/28/14 11:06	
Sodium, Dissolved	ug/L	ND	500	02/28/14 11:06	
Strontium, Dissolved	ug/L	ND	10.0	02/28/14 11:06	

LABORATORY CONTROL SAMPLE: 1336182

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium, Dissolved	ug/L	1000	1050	105	80-120	
Boron, Dissolved	ug/L	1000	995	100	80-120	
Calcium, Dissolved	ug/L	10000	10200	102	80-120	
Magnesium, Dissolved	ug/L	10000	10100	101	80-120	
Potassium, Dissolved	ug/L	10000	10500	105	80-120	
Sodium, Dissolved	ug/L	10000	10500	105	80-120	
Strontium, Dissolved	ug/L	1000	1040	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1336183 1336184

Parameter	Units	60163489001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium, Dissolved	ug/L	99.9	1000	1000	1180	1180	108	109	75-125	1	20	
Boron, Dissolved	ug/L	ND	1000	1000	1180	1190	109	110	75-125	1	20	
Calcium, Dissolved	ug/L	682000	10000	10000	688000	689000	56	66	75-125	0	20	M1
Magnesium, Dissolved	ug/L	15700	10000	10000	26600	27000	109	113	75-125	2	20	
Potassium, Dissolved	ug/L	5090	10000	10000	16700	16800	116	118	75-125	1	20	
Sodium, Dissolved	ug/L	229000	10000	10000	240000	239000	104	97	75-125	0	20	
Strontium, Dissolved	ug/L	6810	1000	1000	7930	8000	112	118	75-125	1	20	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WET/46429 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489005, 60163489006, 60163489007, 60163489008

METHOD BLANK: 1337865 Matrix: Water
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489005, 60163489006, 60163489007, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	03/03/14 10:19	

SAMPLE DUPLICATE: 1337867

Parameter	Units	60163489001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	1200	1180	2	10	

SAMPLE DUPLICATE: 1337868

Parameter	Units	60163520002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	693	685	1	10	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WET/46467
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Associated Lab Samples: 60163489004

METHOD BLANK: 1338350
Matrix: Water
Associated Lab Samples: 60163489004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	20.0	03/04/14 13:41	

SAMPLE DUPLICATE: 1338352

Parameter	Units	60163489004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	879	980	11	10	D6

SAMPLE DUPLICATE: 1338353

Parameter	Units	60163167010 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	721	738	2	10	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WET/46298 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004

METHOD BLANK: 1334616 Matrix: Water
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	02/25/14 17:09	

LABORATORY CONTROL SAMPLE: 1334617

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 1334624

Parameter	Units	60163285001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1410	1370	3	10	

SAMPLE DUPLICATE: 1334625

Parameter	Units	60163337002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	29100	29000	0	10	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WET/46338 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60163489005, 60163489006, 60163489007, 60163489008

METHOD BLANK: 1335261 Matrix: Water
Associated Lab Samples: 60163489005, 60163489006, 60163489007, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	02/26/14 14:59	

LABORATORY CONTROL SAMPLE: 1335262

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1060	106	80-120	

SAMPLE DUPLICATE: 1335265

Parameter	Units	60163520002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2460	2450	0	10	

SAMPLE DUPLICATE: 1335266

Parameter	Units	60163337001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	65900	66800	1	10	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WET/46718 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004, 60163489005, 60163489006, 60163489007, 60163489008

METHOD BLANK: 1345486 Matrix: Water
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004, 60163489005, 60163489006, 60163489007, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	03/18/14 14:10	

LABORATORY CONTROL SAMPLE: 1345487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.5	0.52	105	80-120	

MATRIX SPIKE SAMPLE: 1345488

Parameter	Units	60164595001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	308	100	384	76	75-125	

SAMPLE DUPLICATE: 1345489

Parameter	Units	60164827001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	380	350	8	20	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

QC Batch: WETA/28440 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004, 60163489005, 60163489006, 60163489007, 60163489008

METHOD BLANK: 1338274 Matrix: Water
Associated Lab Samples: 60163489002, 60163489003, 60163489004, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	03/05/14 02:37	
Sulfate	mg/L	ND	1.0	03/05/14 02:37	

METHOD BLANK: 1339823 Matrix: Water
Associated Lab Samples: 60163489001, 60163489002, 60163489003, 60163489004, 60163489005, 60163489006, 60163489007, 60163489008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	1.0	03/05/14 12:07	
Chloride	mg/L	ND	1.0	03/05/14 12:07	
Sulfate	mg/L	ND	1.0	03/05/14 12:07	

METHOD BLANK: 1339864 Matrix: Water
Associated Lab Samples: 60163489004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	03/07/14 15:10	

LABORATORY CONTROL SAMPLE: 1338275

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

LABORATORY CONTROL SAMPLE: 1339824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	5	5.4	107	90-110	
Chloride	mg/L	5	5.1	102	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

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QUALITY CONTROL DATA

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

LABORATORY CONTROL SAMPLE: 1339865

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1338276 1338277

Parameter	Units	60163489001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Bromide	mg/L	ND	5	5	5.6	5.3	111	107	80-120	4	15	
Chloride	mg/L	16.7	10	10	27.4	27.4	107	108	80-120	0	15	
Sulfate	mg/L	901	500	500	1380	1390	96	98	80-120	1	15	

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QUALIFIERS

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

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.

PRL - Pace Reporting Limit.

RL - Reporting 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

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 074922 SAN JUAN 32-8 30 AREA
Pace Project No.: 60163489

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60163489001	GW-074922-021814-BJ-MW-4(Z1)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489002	GW-074922-021814-BJ-MW-4(Z2)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489003	GW-074922-021814-CM-MW-1(Z2)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489004	GW-074922-021814-CM-MW-1(Z3)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489005	GW-074922-021914-CM-MW-1(Z1)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489006	GW-074922-021914-CM-DUP	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489007	GW-074922-021914-BJ-MW-3(Z2)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489008	GW-074922-021914-CM-MW-2(Z1)	EPA 3010	MPRP/26283	EPA 6010	ICP/20061
60163489001	GW-074922-021814-BJ-MW-4(Z1)	SM 2320B	WET/46429		
60163489002	GW-074922-021814-BJ-MW-4(Z2)	SM 2320B	WET/46429		
60163489003	GW-074922-021814-CM-MW-1(Z2)	SM 2320B	WET/46429		
60163489004	GW-074922-021814-CM-MW-1(Z3)	SM 2320B	WET/46467		
60163489005	GW-074922-021914-CM-MW-1(Z1)	SM 2320B	WET/46429		
60163489006	GW-074922-021914-CM-DUP	SM 2320B	WET/46429		
60163489007	GW-074922-021914-BJ-MW-3(Z2)	SM 2320B	WET/46429		
60163489008	GW-074922-021914-CM-MW-2(Z1)	SM 2320B	WET/46429		
60163489001	GW-074922-021814-BJ-MW-4(Z1)	SM 2540C	WET/46298		
60163489002	GW-074922-021814-BJ-MW-4(Z2)	SM 2540C	WET/46298		
60163489003	GW-074922-021814-CM-MW-1(Z2)	SM 2540C	WET/46298		
60163489004	GW-074922-021814-CM-MW-1(Z3)	SM 2540C	WET/46298		
60163489005	GW-074922-021914-CM-MW-1(Z1)	SM 2540C	WET/46338		
60163489006	GW-074922-021914-CM-DUP	SM 2540C	WET/46338		
60163489007	GW-074922-021914-BJ-MW-3(Z2)	SM 2540C	WET/46338		
60163489008	GW-074922-021914-CM-MW-2(Z1)	SM 2540C	WET/46338		
60163489001	GW-074922-021814-BJ-MW-4(Z1)	SM 4500-S-2 D	WET/46718		
60163489002	GW-074922-021814-BJ-MW-4(Z2)	SM 4500-S-2 D	WET/46718		
60163489003	GW-074922-021814-CM-MW-1(Z2)	SM 4500-S-2 D	WET/46718		
60163489004	GW-074922-021814-CM-MW-1(Z3)	SM 4500-S-2 D	WET/46718		
60163489005	GW-074922-021914-CM-MW-1(Z1)	SM 4500-S-2 D	WET/46718		
60163489006	GW-074922-021914-CM-DUP	SM 4500-S-2 D	WET/46718		
60163489007	GW-074922-021914-BJ-MW-3(Z2)	SM 4500-S-2 D	WET/46718		
60163489008	GW-074922-021914-CM-MW-2(Z1)	SM 4500-S-2 D	WET/46718		
60163489001	GW-074922-021814-BJ-MW-4(Z1)	EPA 300.0	WETA/28440		
60163489002	GW-074922-021814-BJ-MW-4(Z2)	EPA 300.0	WETA/28440		
60163489003	GW-074922-021814-CM-MW-1(Z2)	EPA 300.0	WETA/28440		
60163489004	GW-074922-021814-CM-MW-1(Z3)	EPA 300.0	WETA/28440		
60163489005	GW-074922-021914-CM-MW-1(Z1)	EPA 300.0	WETA/28440		
60163489006	GW-074922-021914-CM-DUP	EPA 300.0	WETA/28440		
60163489007	GW-074922-021914-BJ-MW-3(Z2)	EPA 300.0	WETA/28440		
60163489008	GW-074922-021914-CM-MW-2(Z1)	EPA 300.0	WETA/28440		

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ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #:	414458	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021814-BJ-MW-4 (Z1)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/18/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.603			
Oxygen	0.13			
Nitrogen	56.58			
Carbon Dioxide	12.05			
Methane	30.04			
Ethane	0.540			
Ethylene	0.0002			
Propane	0.0495			
Propylene	nd			
Iso-butane	0.0024			
N-butane	0.0040			
Iso-pentane	nd			
N-pentane	0.0004			
Hexanes +	0.0002			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.54
Concentration of methane in water = 15 cc/L ; 10.0 ppm
Concentration of ethane in water = 0.30 cc/L ; 0.37 ppm
Concentration of ethylene in water = 0.0002 cc/L ; 0.0002 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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ANALYSIS REPORT

Lab #:	414459	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021814-BJ-MW-4 (Z2)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/18/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.0912			
Oxygen	0.14			
Nitrogen	90.48			
Carbon Dioxide	9.16			
Methane	0.118			
Ethane	0.0069			
Ethylene	nd			
Propane	0.0012			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.73
Concentration of methane in water = 0.039 cc/L ; 0.026 ppm
Concentration of ethane in water = 0.0024 cc/L ; 0.0030 ppm
Concentration of ethylene in water = < 0.0002 cc/L ; < 0.0002 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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ANALYSIS REPORT

Lab #: 414460 Job #: 24413 IS-68553 Co. Job#:
Sample Name: GW-074922-021814-CM-MW-1 (Z2) Co. Lab#:
Company: Pace Analytical
API/Well:
Container: IsoFlask
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Sampled: 2/18/2014 Date Received: 2/21/2014 Date Reported: 3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0244			
Oxygen	0.12			
Nitrogen	99.42			
Carbon Dioxide	0.42			
Methane	0.0146			
Ethane	0.0007			
Ethylene	nd			
Propane	0.0001			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.074 cc/L ; 0.049 ppm
Concentration of ethane in water = 0.0036 cc/L ; 0.0045 ppm
Concentration of ethylene in water = < 0.0006 cc/L ; < 0.0007 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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ANALYSIS REPORT

Lab #:	414461	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021814-CM-MW-1 (Z3)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/18/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0624			
Oxygen	0.18			
Nitrogen	99.24			
Carbon Dioxide	0.50			
Methane	0.0176			
Ethane	0.0007			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Concentration of methane in water = 0.032 cc/L ; 0.021 ppm
Concentration of ethane in water = 0.0014 cc/L ; 0.0017 ppm
Concentration of ethylene in water = < 0.0003 cc/L ; < 0.0003 ppm

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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ANALYSIS REPORT

Lab #:	414462	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021914-CM-MW-1 (Z1)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/19/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.19			
Oxygen	2.65			
Nitrogen	73.62			
Carbon Dioxide	6.97			
Methane	15.25			
Ethane	0.294			
Ethylene	0.0020			
Propane	0.0212			
Propylene	nd			
Iso-butane	0.0016			
N-butane	0.0024			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.75
Concentration of methane in water = 5.3 cc/L ; 3.5 ppm
Concentration of ethane in water = 0.11 cc/L ; 0.14 ppm
Concentration of ethylene in water = 0.0011 cc/L ; 0.0013 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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ANALYSIS REPORT

Lab #:	414463	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021914-CM-DUP				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/19/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	1.32			
Oxygen	3.15			
Nitrogen	71.06			
Carbon Dioxide	8.05			
Methane	16.10			
Ethane	0.288			
Ethylene	0.0021			
Propane	0.0210			
Propylene	nd			
Iso-butane	0.0017			
N-butane	0.0026			
Iso-pentane	0.0004			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.76
Concentration of methane in water = 5.0 cc/L ; 3.3 ppm
Concentration of ethane in water = 0.098 cc/L ; 0.12 ppm
Concentration of ethylene in water = 0.0011 cc/L ; 0.0013 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

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Isotech Gas Data

Job 24413
CoreTrac IS-68553

nd = not detected, na = not analyzed
* Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace.
* Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.
Samples without He dilution factor had sufficient headspace to be extracted directly

Isotech Lab No.	Sample Name	Sample Date	Sample Time	Field Name	Location	GC Date	He %	H_2 %	Ar %	O_2 %	CO_2 %	N_2 %	CO %	C_1 %	C_2 %	C_2H_4 %	C_3 %	C_3H_6 %	iC_4 %	nC_4 %	iC_5 %	nC_5 %	C_6+ %	Specific Gravity	BTU	Dissolved CH_4 cc/L	Dissolved CH_4 mg/L	Dissolved C_2H_4 cc/L	Dissolved C_2H_4 mg/L	Dissolved C_2H_6 cc/L	Dissolved C_2H_6 mg/L	Helium dilution factor *
414458	GW-074922-021814-BJ-MW-4 (Z1)	2/18/2014	10:35	San Juan 32-8 30 Area	San Juan County, NM	3/5/2014	na	nd	0.603	0.13	12.05	56.58	nd	30.04	0.540	0.0002	0.0495	nd	0.0024	0.0040	nd	0.0004	0.0002	0.913	315	15	10.0	0.0002	0.0002	0.30	0.37	0.54
414459	GW-074922-021814-BJ-MW-4 (Z2)	2/18/2014	11:50	San Juan 32-8 30 Area	San Juan County, NM	3/5/2014	na	nd	0.0912	0.14	9.16	90.48	nd	0.118	0.0069	nd	0.0012	nd	nd	nd	nd	nd	nd	1.018	1	0.039	0.026	< 0.0002	< 0.0002	0.0024	0.0030	0.73
414460	GW-074922-021814-CM-MW-1 (Z2)	2/18/2014	12:10	San Juan 32-8 30 Area	San Juan County, NM	3/5/2014	nd	nd	0.0244	0.12	0.42	99.42	nd	0.0146	0.0007	nd	0.0001	nd	nd	nd	nd	nd	nd	0.970	0	0.074	0.049	< 0.0006	< 0.0007	0.0036	0.0045	
414461	GW-074922-021814-CM-MW-1 (Z3)	2/18/2014	13:55	San Juan 32-8 30 Area	San Juan County, NM	3/5/2014	nd	nd	0.0624	0.18	0.50	99.24	nd	0.0176	0.0007	nd	nd	nd	nd	nd	nd	nd	nd	0.970	0	0.032	0.021	< 0.0003	< 0.0003	0.0014	0.0017	
414462	GW-074922-021914-CM-MW-1 (Z1)	2/19/2014	10:05	San Juan 32-8 30 Area	San Juan County, NM	3/5/2014	na	nd	1.19	2.65	6.97	73.62	nd	15.25	0.294	0.0020	0.0212	nd	0.0016	0.0024	nd	nd	nd	0.952	160	5.3	3.5	0.0011	0.0013	0.11	0.14	0.75
414463	GW-074922-021914-CM-DUP	2/19/2014	10:30	San Juan 32-8 30 Area	San Juan County, NM	3/5/2014	na	nd	1.32	3.15	8.05	71.06	nd	16.10	0.288	0.0021	0.0210	nd	0.0017	0.0026	0.0004	nd	nd	0.955	169	5.0	3.3	0.0011	0.0013	0.098	0.12	0.76
414464	GW-074922-021914-BJ-MW-3 (Z2)	2/19/2014	10:40	San Juan 32-8 30 Area	San Juan County, NM	3/5/2014	na	nd	0.0747	1.19	0.29	98.44	nd	0.0072	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.971	0	0.0025	0.0016	< 0.0002	< 0.0002	< 0.0001	< 0.0002	0.70
414465	GW-074922-021914-CM-MW-2 (Z1)	2/19/2014	12:30	San Juan 32-8 30 Area	San Juan County, NM	3/5/2014	na	nd	0.0770	0.21	2.55	97.12	nd	0.0396	0.0019	nd	nd	nd	nd	nd	nd	nd	nd	0.982	0	0.015	0.010	< 0.0002	< 0.0002	0.00080	0.00099	0.69

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ANALYSIS REPORT

Lab #:	414464	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021914-BJ-MW-3 (Z2)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/19/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.0747			
Oxygen	1.19			
Nitrogen	98.44			
Carbon Dioxide	0.29			
Methane	0.0072			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.70
Concentration of methane in water = 0.0025 cc/L ; 0.0016 ppm
Concentration of ethane in water = < 0.0001 cc/L ; < 0.0002 ppm
Concentration of ethylene in water = < 0.0002 cc/L ; < 0.0002 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
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ANALYSIS REPORT

Lab #:	414465	Job #:	24413	IS-68553	Co. Job#:
Sample Name:	GW-074922-021914-CM-MW-2 (Z1)				Co. Lab#:
Company:	Pace Analytical				
API/Well:					
Container:	IsoFlask				
Field/Site Name:	San Juan 32-8 30 Area				
Location:	San Juan County, NM				
Formation/Depth:					
Sampling Point:					
Date Sampled:	2/19/2014	Date Received:	2/21/2014	Date Reported:	3/05/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{18}O$ ‰
Carbon Monoxide	nd			
Helium	na			
Hydrogen	nd			
Argon	0.0770			
Oxygen	0.21			
Nitrogen	97.12			
Carbon Dioxide	2.55			
Methane	0.0396			
Ethane	0.0019			
Ethylene	nd			
Propane	nd			
Propylene	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Remarks:
Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.69
Concentration of methane in water = 0.015 cc/L ; 0.010 ppm
Concentration of ethane in water = 0.00080 cc/L ; 0.00099 ppm
Concentration of ethylene in water = < 0.0002 cc/L ; < 0.0002 ppm
*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH

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Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: CM, BJ

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Dissolved Methane			Comments
	GW-074922-021814-BJ-MW-4 (Z1)	2.18.14/1035	X			
	GW-074922-021814-BJ-MW-4 (Z2)	2.18.14/1150	X			
	GW-074922-021814-CM-MW-1 (Z2)	2.18.14/1210	X			
	GW-074922-021814-CM-MW-1 (Z3)	2.18.14/1355	X			
	GW-074922-021914-CM-MW-1 (Z1)	2.19.14/1005	X			
	GW-074922-021914-CM-MW-DUP	2.19.14/1030	X			*Please report and
	GW-074922-021914-BJ-MW-3 (Z2)	2.19.14/1040	X			bill to Alice Flanagan
	GW-074922-021914-CM-MW-2 (Z1)	2.19.14/1230	X			with Pace Lenexa, KS
						913-563-1409

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	[signature]	CRA	2/20/14	1800
Received by	Robert Cal lo	Isotech	2/21/14	0855
Relinquished by				
Received by				
Relinquished by				
Received by				

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 414698 Job #: 24428 IS-68553 Co. Job#:
Sample Name: A-074922-021714-BJ-MW-2 Co. Lab#:
Company: Pace Analytical
API/Well:
Container: Cali-5-Bond Bag
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Sampled: 2/17/2014 Date Received: 2/24/2014 Date Reported: 3/27/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.626			
Oxygen	9.48			
Nitrogen	43.32			
Carbon Dioxide	4.23			
Methane	41.76	-34.35	-160.1	
Ethane	0.515	-21.58	-120.3	
Ethylene	nd			
Propane	0.0578			
Propylene	nd			
Iso-butane	0.0115			
N-butane	0.0030			
Iso-pentane	0.0008			
N-pentane	0.0002			
Hexanes +	0.0003			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 434
Specific gravity, calculated: 0.835

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 414699 Job #: 24428 IS-68553 Co. Job#:
Sample Name: A-074922-021714-BJ-MW-3 Co. Lab#:
Company: Pace Analytical
API/Well:
Container: Cali-5-Bond Bag
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Sampled: 2/17/2014 Date Received: 2/24/2014 Date Reported: 3/27/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.595			
Oxygen	12.63			
Nitrogen	49.67			
Carbon Dioxide	0.48			
Methane	35.94	-36.12	-168.3	
Ethane	0.590	-23.53	-132.3	
Ethylene	nd			
Propane	0.0650			
Propylene	nd			
Iso-butane	0.0151			
N-butane	0.0061			
Iso-pentane	0.0032			
N-pentane	0.0008			
Hexanes +	0.0018			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 377
Specific gravity, calculated: 0.842

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 414700 Job #: 24428 IS-68553 Co. Job#:
Sample Name: A-074922-021714-BJ-MW-4 (1) Co. Lab#:
Company: Pace Analytical
API/Well:
Container: Cali-5-Bond Bag
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Sampled: 2/17/2014 Date Received: 2/24/2014 Date Reported: 3/27/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.149			
Oxygen	2.01			
Nitrogen	12.72			
Carbon Dioxide	1.24			
Methane	82.28	-36.38	-175.1	
Ethane	1.37	-23.74	-136.8	
Ethylene	nd			
Propane	0.163			
Propylene	nd			
Iso-butane	0.0355			
N-butane	0.0164			
Iso-pentane	0.0077			
N-pentane	0.0025			
Hexanes +	0.0049			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 865
Specific gravity, calculated: 0.640

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

1000

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 414701 Job #: 24428 IS-68553 Co. Job#:
Sample Name: A-074922-021714-BJ-MW-4 (2) Co. Lab#:
Company: Pace Analytical
API/Well:
Container: Cali-5-Bond Bag
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Sampled: 2/17/2014 Date Received: 2/24/2014 Date Reported: 3/27/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.0838			
Oxygen	0.18			
Nitrogen	7.23			
Carbon Dioxide	1.37			
Methane	89.41	-36.35	-174.9	
Ethane	1.48	-23.73	-135.9	
Ethylene	nd			
Propane	0.175			
Propylene	nd			
Iso-butane	0.0377			
N-butane	0.0176			
Iso-pentane	0.0082			
N-pentane	0.0027			
Hexanes +	0.0050			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 940
Specific gravity, calculated: 0.609

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH
ISOTECH LABORATORIES INC

ANALYSIS REPORT

Lab #: 414702 Job #: 24428 IS-68553 Co. Job#:
Sample Name: A-074922-021714-BJ-DUP Co. Lab#:
Company: Pace Analytical
API/Well:
Container: Cali-5-Bond Bag
Field/Site Name: San Juan 32-8 30 Area
Location: San Juan County, NM
Formation/Depth:
Sampling Point:
Date Sampled: 2/17/2014 Date Received: 2/24/2014 Date Reported: 3/27/2014

Component	Chemical mol. %	$\delta^{13}C$ ‰	δD ‰	$\delta^{15}N$ ‰
Carbon Monoxide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.634			
Oxygen	3.17			
Nitrogen	38.61			
Carbon Dioxide	4.28			
Methane	52.41	-33.22	-164.1	
Ethane	0.775	-22.56	-127.2	
Ethylene	nd			
Propane	0.0872			
Propylene	nd			
Iso-butane	0.0212			
N-butane	0.0069			
Iso-pentane	0.0028			
N-pentane	0.0006			
Hexanes +	0.0008			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 548
Specific gravity, calculated: 0.783

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

ISOTECH

Send Data and Invoice to

Name: Christine Mathews
Company: Envirocon-Rovers & Assoc.
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: CMathews@craworld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: BJ

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Carbon/Hydrogen Isotopes C1 & C2	Analyses Requested: Hydrocarbons/Fixed gases/ SC/BTU	Analyses Requested: Stable Carbon Isotope of CO_2	Comments
	A-074922-021714-BJ-MW-2	2/17/14 (1130)	X	X	based on C1 & C2	
	A-074922-021714-BJ-MW-3	2/17/14 (1230)	X	X	based on C1 & C2	
	A-074922-021714-BJ-MW-4(1)	2/17/14 (1250)	X	X	based on C1 & C2	* Please provide results of C1 & C2 prior to completing Stable Carbon of CO_2. We will advise. Thank you, Christine
	A-074922-021714-BJ-MW-4(2)	2/17/14 (1300)	X	X	based on C1 & C2	
	A-074922-021714-BJ-DUP	2/17/14 (1430)	X	X	based on C1 & C2	

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	[signature]	CRA	2/21/14	1500
Received by	Peter Calla	Isotech	2/24/14	0940
Relinquished by				
Received by				
Relinquished by				
Received by				

ISOTECH

Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821
Phone: 217-398-3490
Fax: 217-398-3493
www.isotechlabs.com
mail@isotechlabs.com

Send Data and Invoice to

Name: Christine Mathews
Company: Enestoga-Rovers & Assoc.
Address: 6121 Indian School #200
Albuquerque, NM 87110
Phone: 505-884-0672
Fax:
Email: cmathews@craworld.com

Project: San Juan 32-8 30 Area
Location: San Juan County, NM
Sampled by: BJ

Sample Description

Container Number	Sample Identification	Date Sampled	Analyses Requested: Carbon/hydrogen isotopes C1 & C2	Analyses Requested: Hydrocarbons/ Fixed gases/ SC/BTU	Analyses Requested: Stable carbon isotope of CO_2	Comments
	A-074922-021714-BJ-MW-2	2/17/14 (1130)	X	X	based on C1 & C2	
	A-074922-021714-BJ-MW-3	2/17/14 (1230)	X	X	based on C1 & C2	
	A-074922-021714-BJ-MW-4 (1)	2/17/14 (1250)	X	X	based on C1 & C2	* Please provide
	A-074922-021714-BJ-MW-4 (2)	2/17/14 (1300)	X	X	based on C1 & C2	results of C1 & C2
	A-074922-021714-BJ-DUP	2/17/14 (1430)	X	X	based on C1 & C2	prior to completing
						stable carbon of
						CO_2, We will advise
						Thank you,
						Christine

Chain-of-Custody Record

	Signature	Company	Date	Time
Relinquished by	[signature]	CRA	2/21/14	1500
Received by	Peter Cal[illegible]	Isotech	2/21/14	0840
Relinquished by				
Received by				
Relinquished by				
Received by				

Pace Analytical
www.pacelabs.com

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	COP CRA	Report To:	Christine Mathews	Attention:	
Address:	6121 Indian School Rd NE, Ste 200	Copy To:		Company Name:	COP Entos
	Albequerque, NM 87110			Address:	
Email To:	cmathews@craworld.com	Purchase Order No.:		Pace Quote Reference:	
Phone: 505-884-0672	Fax: 505-884-4932	Project Name:	San Juan 32-8 30 Area	Pace Project Manager:	Alice Flanagan
Requested Due Date/TAT:	standard	Project Number:	74922	Pace Profile #:	5514, 13

Page: of

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NM

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Valid Matrix Codes: MATRIX / CODE (DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: 6010 Dissolved **	2540 TDS	300.0 Cl, Br, Sulfate	4500 Sulfide	2320 Bicarbonate	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60163489
1	GW-074922-021814-BS-MW-4(21)	WT	G				2.18.14	1035		4	2		1				1		X	X	X	X	X		01
2	GW-074922-021814-BS-MW-4(22)	WT	G				2.18.14	1150		4	2		1				1		X	X	X	X	X		02
3	GW-074922-021814-CM-MW-1(22)	WT	G				2.18.14	1210		4	2		1				1		X	X	X	X	X		03
4	GW-074922-021814-CM-MW-4(23)	WT	G				2.18.14	1355		4	2		1				1		X	X	X	X	X		04
5	GW-074922-021914-CM-MW-4(21)	WT	G				2.19.14	1005		4	2		1				1		X	X	X	X	X		05
6	GW-074922-021914-CM-DUP	WT	G				2.19.14	1030		4	2		1				1		X	X	X	X	X		06
7	GW-074922-021914-BS-MW-3(22)	WT	G				2.19.14	1040		4	2		1				1		X	X	X	X	X		07
8	GW-074922-021914-CM-MW-2(21)	WT	G				2.19.14	1230		4	2		1				1		X	X	X	X	X		08
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
** 6010 Dissolved Metals: Mg, Ca, B, K, Na, Ba, Sr	CRA	2.20.14	1800		2/21/14	840	2.8	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Christine Mathews
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 2/20/14

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

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