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REPORTS

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MARCH 2005 GROUNDWATER SAMPLING REPORT HOBBS, NEW MEXICO FACILITY

BJ SERVICES COMPANY, U.S.A.

February 2, 2006

MARCH 2005 GROUNDWATER SAMPLING REPORT
HOBBS, NEW MEXICO FACILITY
BJ SERVICES COMPANY, U.S.A.

Prepared for

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BC Project Number: 126238.020

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February 2, 2006

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"This report was prepared in accordance with the standards of the environmental consulting industry at the time it was prepared. It should not be relied upon by parties other than those for whom it was prepared, and then only to the extent of the scope of work which was authorized. This report does not guarantee that no additional environmental contamination beyond that described in this report exists at this site."

CONTENTS

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1.0 INTRODUCTION

Brown and Caldwell conducted a monitor well installation and soil and groundwater sampling event at the BJ Services Company, U.S.A. (BJ Services) facility located at 2708 West County Road in Hobbs, New Mexico on March 8-11, 2005. This report presents a description of the field activities and a summary and evaluation of the analytical results. A groundwater potentiometric surface map and a chloride distribution map are included.

A layout of the facility is shown in Figure 1. The former fuel island area biosparging system was decommissioned in March 2005, as described in the Final Closure Report, GW-072 that was submitted to the New Mexico Oil Conservation Division (NMOCD) on April 13, 2005. NMOCD approved the GW-072 Final Closure Report on June 15, 2005.

BJ Services removed three field waste tanks from the facility on March 6-7, 1997. An ongoing groundwater monitoring program was expanded to address the former field waste tanks area of the facility, as directed by NMOCD in correspondence dated January 21, 1999. Table 1 presents a site chronology detailing the history of investigations into impacts to soil and groundwater in the area of the former field waste tanks at the BJ Services Hobbs, New Mexico facility, along with the history of investigations and remediation conducted by BJ Services pertaining to hydrocarbon impacts associated with the former fuel island area of the facility, for which regulatory closure has been granted.

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2.0 FIELD ACTIVITIES

Brown and Caldwell purged and sampled ten monitor wells at or in the vicinity of the facility on March 8-11, 2005 to determine the concentrations of chloride in groundwater and to evaluate general groundwater quality in the area of the facility. The sampling event included three new monitor wells (MW-17, MW-18, and MW-19) that were installed and sampled for the first time in March 2005. The locations of current and former monitor wells in the area of the facility are shown in Figure 1. Soil samples were collected from the borings associated with the new monitor wells and from a soil boring completed adjacent to existing monitor well MW-16. The following subsections describe the field activities conducted by Brown and Caldwell during the current groundwater sampling and soil sampling event. Section 3.0 presents an evaluation of these data.

2.1 Soil Sampling Activities

Soil samples were collected from the monitor wells MW-17, MW-18, and MW-19 borings and from soil boring SB-16 (located adjacent to existing monitor well MW-16) to evaluate the vertical distribution of chloride impact to soil at these locations. These soil borings were installed using air rotary drilling techniques.

Soil samples were collected from non-indurated vadose zone materials at approximate 10-foot centers from the MW-17, MW-18, and MW-19 soil borings and at approximate 5-foot centers from soil boring SB-16. The associated boring logs are provided in Appendix A. The soil samples were analyzed for chloride by Method 325.2 to determine the vertical distribution of chloride in vadose zone soils at these locations. The laboratory analytical reports and chain-of-custody documentation for the soil samples are provided in Appendix B.

Soil boring SB-16 was backfilled with cement-bentonite grout upon completion of sampling activities. The soil borings for monitor wells MW-17, MW-18, and MW-19 were advanced into the saturated zone for subsequent installation of the monitor wells, as described in Section 2.2.

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Decontamination procedures associated with installation of soil borings and monitor wells consisted of washing drilling equipment with distilled water and a non-phosphate detergent. Decontamination water was discharged to an on-site water reclamation system at the BJ Services facility. Soil cuttings were placed in labeled 55-gallon drums and stored onsite pending analytical results.

2.2 Monitor Well Installation and Development Activities

Monitor wells MW-17, MW-18, and MW-19 were installed and sampled at the request of the New Mexico Oil Conservation Division (NMOCD) to assess and delineate the extent of chloride impact to the subsurface at and in the vicinity of the facility. Monitor well MW-17 was installed near the north fence line of the facility to verify that chloride-impacted groundwater has not migrated northward from the facility. Monitor well MW-18 was installed in the eastern portion of the facility to investigate the potential for chloride impact to groundwater at that location. Monitor well MW-19 was installed approximately 250 feet northeast of existing off-site monitor well MW-16 to define the downgradient extent of chloride impact to groundwater detected at the monitor well MW-16 location.

The monitor well soil borings were advanced to an approximate depth of 78 feet below the observed top of the uppermost saturated zone. The monitor wells were constructed using 15 feet of 2-inch diameter 0.01-inch machine slotted PVC screen and sufficient 2-inch diameter PVC riser pipe to extend the well to the ground surface. The well screens were placed to capture the saturated zone such that approximately 1.5 feet of screen is situated above the apparent top of the saturated zone and approximately 13.5 feet of screen is situated below the apparent top of the saturated zone. The wells were equipped with a 6-inch PVC bottom cap, and a sealing top cap. The annular area of each well was backfilled with 20/40-grade filter sand installed from the total depth of the well to approximately 2 feet above the top of the screen. The remaining annular area was backfilled with a hydrated bentonite seal. For monitor wells MW-17 and MW-18, the uppermost portion of the PVC riser pipe was encased within a flush-mounted approximate 8-inch diameter vault and set within a 3-foot by 3-foot by 4-inch thick concrete surface pad that slopes away from the well. For monitor well MW-19, the above-grade portion of the riser pipe was

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encased in a locking above-grade protective steel casing and set within a 3-foot by 3-foot by 4-inch thick concrete pad that slopes away from the well. Four bollards were set in concrete surrounding MW-19's well pad. Construction diagrams for monitor wells MW-17, MW-18, and MW-19 are presented in Appendix A.

The newly installed monitor wells were developed with previously unused disposable bailers and monitored with a turbidity meter until produced groundwater was clear and reasonably free of suspended sediment. The development methods of the new wells were monitored by Brown and Caldwell in order to acknowledge that the wells were free of suspended sediment.

The top-of-casing (TOC) elevations of monitor wells MW-17, MW-18, and MW-19 were surveyed relative to the TOC elevation of existing monitor well MW-16 using field surveying techniques. The horizontal locations of the wells were measured relative to existing features at the facility.

2.3 Groundwater Sampling Activities

Groundwater samples were collected from monitor wells MW-5, MW-10, MW-11A, MW-12D, MW-14, MW-15, MW-16, MW-17, MW-18, and MW-19. Groundwater level measurements to the nearest 0.01 foot were obtained from all monitor wells at the facility using a decontaminated electronic water-level indicator prior to purging and sampling. Current and historical groundwater elevation data for each well are presented in Table 2. A groundwater elevation map for March 8-11, 2005 is presented in Figure 2. The groundwater elevation data indicate that the groundwater flow direction is to the east/northeast.

Monitor wells MW-12D, MW-16, MW-17, MW-18, and MW-19 were purged with a submersible pump and previously unused down-hole tubing until groundwater stabilization occurred. Low flow/low stress purging was performed to maintain the water level at or near the static water level. The remaining wells were purged with previously unused disposable bailers and clean, previously unused polyethylene rope. Three well volumes were purged from monitor well MW-15. Monitor wells MW-5, MW-10, MW-11A, and MW-14 were purged dry.

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Field parameter measurements for pH, specific conductivity, oxidation-reduction potential, dissolved oxygen, and temperature were collected during purging of these wells. Field parameter readings were recorded on the groundwater sampling forms included in Appendix C and summarized in Table 3.

Groundwater samples were obtained directly from the discharge line of the submersible pump (monitor wells MW-12D, MW-16, MW-17, MW-18, and MW-19) or by pouring recovered water from a bailer. The groundwater samples were placed in laboratory-prepared, clean glass or plastic containers, sealed with Teflon®-lined lids, labeled, and placed on ice in an insulated cooler for delivery to Southern Petroleum Laboratory in Houston, Texas for analysis using standard chain-of-custody procedures. The laboratory analytical reports and chain-of-custody documentation for groundwater samples collected during the current sampling event are provided in Appendix B.

Field measurement equipment was decontaminated prior to and following each use. Decontamination procedures consisted of washing with distilled water and a non-phosphate detergent, then rinsing with distilled water. Purge and decontamination waters were discharged to an on-site water reclamation system at the BJ Services facility.

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3.0 ANALYTICAL RESULTS

The following subsections present the analytical results for soil and groundwater samples collected during the March 2005 sampling event.

3.1 Soil Samples

Table 4 summarizes the results for chloride analysis of soil samples from the MW-17, MW-18, MW-19, and SB-16 soil borings. Chloride concentrations in vadose zone soil at these locations are relatively elevated (i.e., exceeding 100 milligrams per kilogram (mg/kg)) in the uppermost 20 feet to 25 feet below grade, and decrease below this interval throughout the remaining portion of the vadose zone.

3.2 Groundwater Samples

Groundwater samples from monitor wells MW-5, MW-10, MW-11A, MW-12D, MW-14, MW-15, MW-16, MW-17, MW-18, and MW-19 were analyzed for the following parameters using the indicated analytical methodologies:

- Chloride (Method 325.3);
- Nitrate, Sulfate, Fluoride (Method E300);
- Bicarbonate and Carbonate Alkalinity (Method 2320B);
- Hardness (Method E130.2); and
- Calcium, magnesium, potassium and sodium (Method 6010B).

Table 5 presents current and cumulative results for chloride analyses of groundwater samples collected at the facility. Current chloride concentrations in monitor wells MW-5, MW-12D, MW-17, and MW-18 are less than the New Mexico Water Quality Control Commission (NMWQCC) chloride standard of 250 milligrams per liter (mg/L), but chloride concentrations in monitor wells

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MW-10, MW-11A, MW-14, MW-15, MW-16, and MW-19 exceed the NMWQCC chloride standard.

Table 6 presents the cumulative analytical results for annual sampling and analysis for NMWQCC constituents. The 2005 analytical results for geochemical parameters (i.e., carbonate, bicarbonate, hardness, fluoride, nitrate, sulfate, and cations) are generally comparable to historic data for these parameters on a well-by-well basis.

3.3 Data Evaluation

Figure 3 depicts the distribution of chloride in groundwater in the area of the facility and indicates the presence of two chloride sources in the area of the facility:

1. Former field waste tanks at the BJ Services facility; and
2. A separate source in the vicinity of monitor well MW-16.

The occurrence of chloride in association with each of these source areas is discussed below.

Former Field Waste Tanks Source Area

Groundwater chloride impact associated with the former field waste tanks source area is present at the monitor well MW-10 and MW-11A locations and is defined downgradient at the monitor well MW-18 location in the eastern portion of the BJ Services facility. The northern extent of this chloride plume is defined within the boundaries of the BJ Services facility at the monitor well MW-17 location. Previous groundwater sampling conducted by BJ Services at the on-site nested monitor well MW-12/MW-12D location indicated that the degree of chloride impact to groundwater decreased with depth within the uppermost aquifer at the BJ Services facility (see Table 5). The current chloride concentration in monitor well MW-12D is less than the NMWQCC chloride standard of 250 mg/L and is an order of magnitude less than in nearby monitor well MW-11A, which is screened in the upper portion of the uppermost aquifer. Chloride concentrations in this area of impact decrease in an eastward (downgradient) from 2,740 mg/L in monitor well MW-11A

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to 321 mg/L and 303 mg/L at monitor wells MW-15 and MW-14, respectively, to 199 mg/L in monitor well MW-18.

Monitor Well MW-16 Source Area

The previously indicated separate chloride source area in the vicinity monitor well MW-16 relative to the former field waste tanks source area is confirmed by groundwater data from the March 2005 sampling event. From the former field waste tanks source area, chloride concentrations decrease in an eastward (downgradient) from 2,740 mg/L in monitor well MW-11A to 321 mg/L and 303 mg/L at monitor wells MW-15 and MW-14, respectively, to 199 mg/L in monitor well MW-18 (i.e., less than the NMWQCC chloride standard of 250 mg/L). Moving further eastward, the chloride concentration in monitor well MW-16 increases by an order of magnitude to 1,140 mg/L, then once again decreases in a northeastward (generally downgradient) direction to 330 mg/L at the MW-19 location. This generalized pattern of decreasing chloride concentrations moving eastward from monitor well MW-11A to the monitor wells MW-14 and MW-15 locations, following by an elevated chloride concentration in monitor well MW-16 has also been documented on the basis of chloride concentration data from March 2004, October 2003, and March/June 2003, as indicated in Table 5. The temporal consistency of this pattern of chloride concentrations indicates that the elevated chloride concentrations being detected at the monitor well MW-16 location are not the result of a sporadic passage of chloride-impacted groundwater from the former field waste tanks area, but instead indicates that a separate chloride source area, from which chloride is continuously leaching to groundwater, is present in the vicinity of monitor well MW-16. Although current data from monitor wells MW-16 and MW-19 indicate that chloride concentrations associated with the monitor well MW-16 source area decrease in a downgradient direction, the downgradient extent of chloride impact to groundwater associated with the monitor well MW-16 source area is not presently defined.

Groundwater modeling conducted by Brown and Caldwell prior to installation of monitor well MW-16 in May 2003 indicated an anticipated chloride concentration of less than 250 mg/L at the proposed downgradient monitor well MW-16 location east of the BJ Services facility, based on historic data that had also defined an eastward decrease in chloride concentrations within the BJ

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Services facility. Specifically, historic chloride concentrations in former field waste tanks area monitor wells MW-11 and MW-11A had ranged from 834 mg/L to 3,400 mg/L, whereas chloride concentrations in the area of monitor wells MW-14 and MW-15, which are located further east within the BJ Services facility, had ranged from 163 mg/L to 368 mg/L.

Off-site monitor well MW-16 has been sampled six times since its installation in May 2003, with chloride concentrations in the well ranging from 753 mg/L to 1,140 mg/L. During the post-May 2003 time period, chloride concentrations in individual wells at the BJ Services facility have remained generally consistent with previous chloride data from those wells. The data presented in Figure 3 demonstrate that chloride impact associated with the former field waste tanks is limited to within the boundaries of the BJ Services facility and that the concentration of chloride in off-site monitor well MW-16 would not exceed 250 mg/L if there was no off-site source of chloride impact.

Brown and Caldwell provided further evidence of this off-site source of chloride impact to groundwater in the report for the December 2003 groundwater sampling event, based on a search of NMOCD files relating to permitted oil & gas exploration and production activities in the area, and supplemented by historical aerial photographs depicting industrial development in the vicinity. Brown and Caldwell also presented the results of a water well search that indicated no current groundwater usage within 1 mile downgradient of the facility.

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4.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on information obtained during the March 2005 and previous groundwater sampling events at the BJ Services Hobbs, New Mexico facility.

4.1 Conclusions

- The distribution of chloride concentrations within groundwater in the area of the BJ Services Hobbs, New Mexico facility indicates the presence of two separate source areas: the MW-16 area and the former field waste tanks area. Elevated chloride concentrations in groundwater east of the BJ Services facility are apparently attributable to one or more off-site sources. In the absence of these apparent sources, chloride impact attributable to the onsite source would be less than the NMWQCC standard of 250 mg/L in the area to the east of the BJ Services facility.
- Chloride concentrations measured in on-site downgradient monitor wells MW-17 and MW-18 during the current groundwater sampling event are less than the NMWQCC standard of 250 mg/L.
- Elevated chloride concentrations in soil were observed within the uppermost 25 feet below the ground surface at each of the March 2005 boring locations. Chloride concentrations then decreased with depth throughout the vadose zone at each location.

4.2 Recommendations

- Given that (1) chloride impact to groundwater attributable to the BJ Services facility at concentrations exceeding the NMWQCC standard of 250 mg/L is limited to the BJ Services facility, and (2) there is no current downgradient usage of groundwater within 1 mile of the facility, BJ Services should discontinue sampling and analysis pertaining to chloride impact to groundwater within the uppermost aquifer at and in the vicinity of its Hobbs, New Mexico facility.

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DISTRIBUTION

March 2005 Groundwater Sampling Report
BJ Services Company, U.S.A.
Hobbs, New Mexico

February 2, 2006

Final Distribution as follows:

1 copy to: State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. Wayne Price

1 copy to: State of New Mexico
Oil Conservation Division, Hobbs District Office
1625 N. French Dr.
Post Office Box 1980
Hobbs, New Mexico 88240

Attention: Mr. Chris Williams

1 copy to: BJ Services Company, U.S.A.
2708 West County Road
Hobbs, New Mexico 88240

Attention: Mr. John Adcock

1 copy to: BJ Services Company, U.S.A.
11211 FM 2920
Tomball, Texas 77375

Attention: Ms. Jo Ann Cobb

1 copy to: Brown and Caldwell Project File

QUALITY CONTROL REVIEWER

L M Wright

Lynn M. Wright, P.G.
Supervising Geologist

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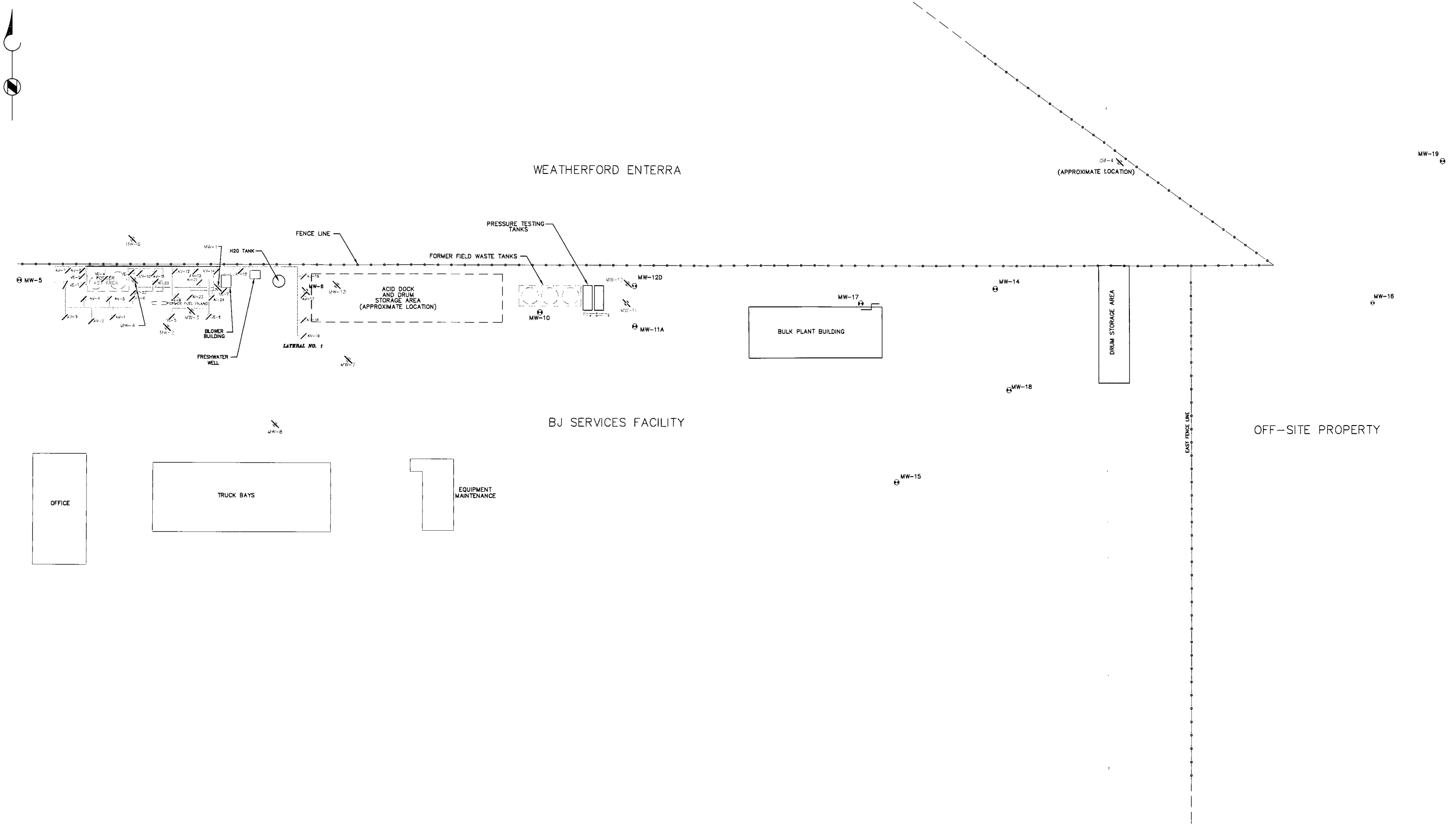
FIGURES



BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 45 90
SCALE IN FEET

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-10 — EXISTING MONITOR WELL LOCATION

MW-2 — MONITOR WELL (PLUGGED AND ABANDONED)

FORMER BIOSPARGING SYSTEM (DECOMMISSIONED)

TITLE: SITE MAP	DATE: 5/10/05
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 126238.020
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 1

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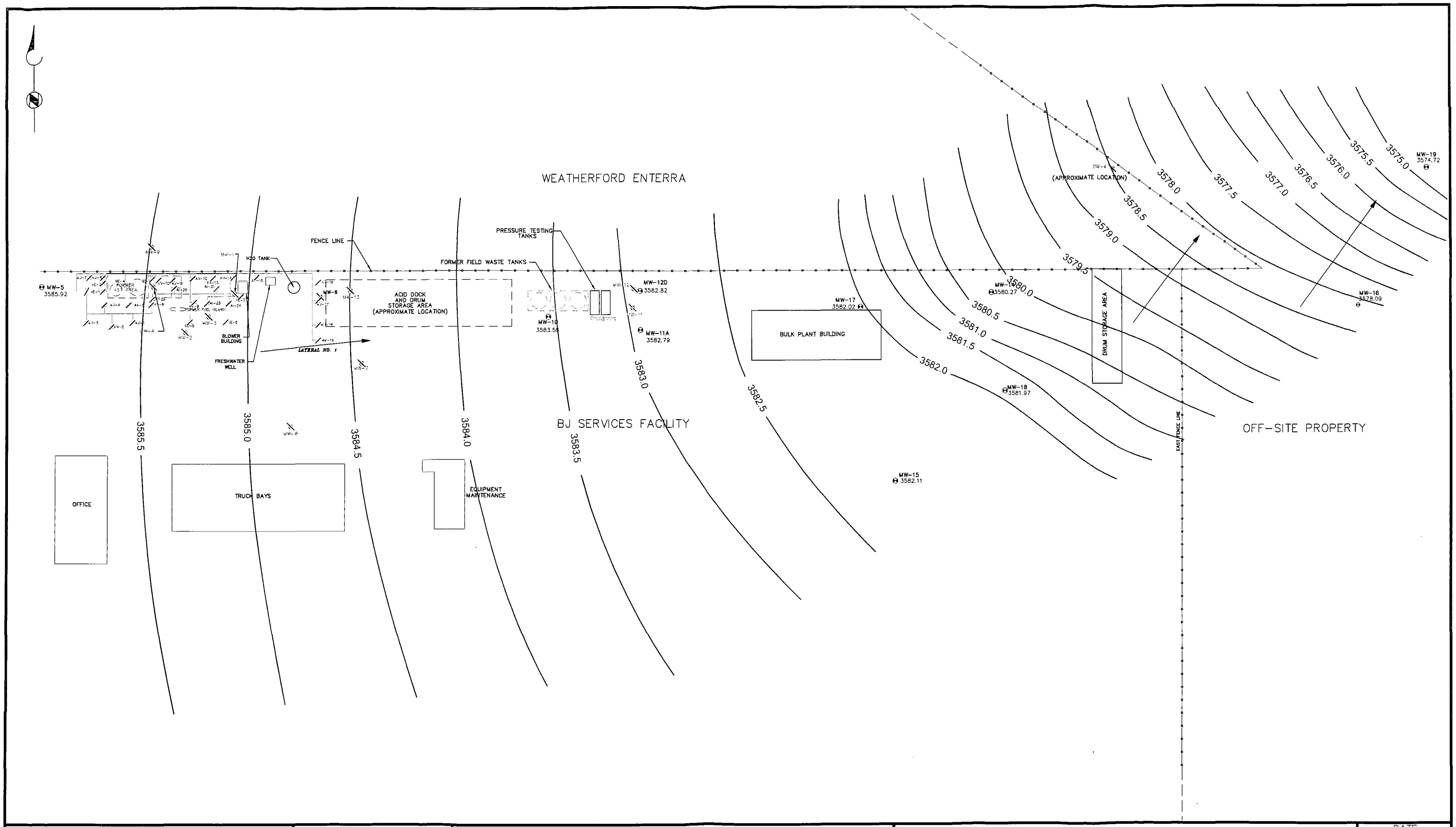

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SUBMITTED: _____ DATE: _____
PROJECT MANAGER

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BROWN AND CALDWELL

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SCALE IN FEET

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

- MW-10 — EXISTING MONITOR WELL LOCATION WITH GROUNWATER ELEVATION (ft AMSL)
- MW-2 — MONITOR WELL (PLUGGED AND ABANDONED)
- FORMER BIOSPARGING SYSTEM (DECOMMISSIONED)
- 3584.0 — GROUNDWATER ELEVATION CONTOUR LINE
- GROUNDWATER FLOW DIRECTION

TITLE: GROUNDWATER ELEVATION MAP – MARCH 8–11, 2005	DATE: 5/12/05
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 126238.020
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 2

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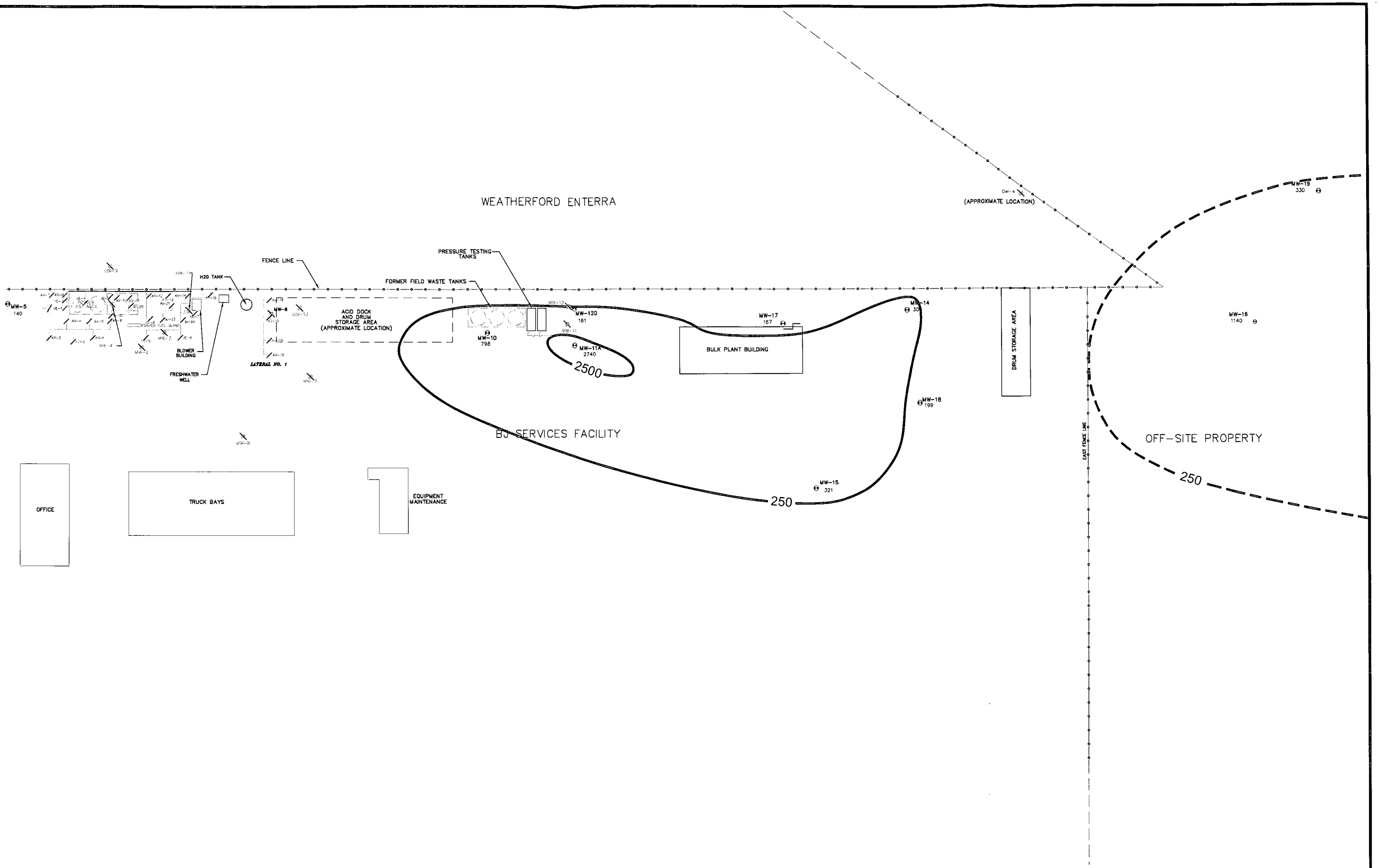

BROWN AND CALDWELL
HOUSTON, TEXAS

SUBMITTED: _____ DATE: _____
PROJECT MANAGER

APPROVED: _____ DATE: _____
BROWN AND CALDWELL

0 45 90
SCALE IN FEET

DRAWN BY: ____ DATE ____
CHK'D BY: ____ DATE ____
APPROVED: ____ DATE ____

LEGEND

MW-10 / 798 — MONITOR WELL LOCATION, WITH MOST RECENT CHLORIDE CONCENTRATION (mg/L)

MW-2 — MONITOR WELL (PLUGGED AND ABANDONED)

250 — CHLORIDE ISOCONCENTRATION LINE (CONTOUR INTERVAL = LOGARITHMIC)

FORMER BIOSPARGING SYSTEM (DECOMMISSIONED)

TITLE: CHLORIDE DISTRIBUTION IN GROUNDWATER – MARCH 2005	DATE: 6/2/05
CLIENT: BJ SERVICES COMPANY, U.S.A.	PROJECT NUMBER: 126238.020
SITE: HOBBS, NEW MEXICO	FIGURE NUMBER: 3

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TABLES

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

Date	Activity
February 7, 1991	The New Mexico Oil Conservation Division (NMOCD) conducted an on-site inspection, including sampling of the on-site fresh water well.
August 6, 1991	The NMOCD requested submittal of an investigation work plan.
September 5, 1991	Roberts/Schornick and Associates, Inc. (RSA) submitted Technical Work Plan for soil and groundwater investigation to the NMOCD.
November 15, 1991	The NMOCD approved the Technical Work Plan submitted by RSA.
December 16, 1991	RSA sampled the fresh water well. The analytical results were submitted to the NMOCD.
February 21, 1992	Western sampled the fresh water well. The analytical results were submitted to the NMOCD.
July 29 - August 10, 1992	Brown and Caldwell conducted a soil and groundwater investigation according to the approved Technical Work Plan. The investigation included drilling and sampling nine soil borings, sampling six hand-augured soil borings, installation and sampling of five monitor wells, and sampling of the fresh water well.
October 12, 1992	Brown and Caldwell submitted a Soil and Groundwater Investigation Report to the NMOCD.
December 2, 1992	The NMOCD requested the installation and sampling of four additional monitor wells, including a monitor well on an adjacent property.
April 13, 1993	Brown and Caldwell conducted a vapor extraction pilot test on the existing monitor wells.
April 15, 1993	Brown and Caldwell installed off-site monitor well MW-9.
April 22, 1993	Brown and Caldwell sampled off-site monitor well MW-9.
May 27, 1993	Brown and Caldwell submitted a letter report documenting the installation and sampling of off-site monitor well MW-9 to the NMOCD.
June 2, 1993	Brown and Caldwell conducted a short-term aquifer test using the fresh water well at the facility.
June 8, 1993	USTank Management, Inc. conducted a non-volumetric tank system tightness test on the diesel and unleaded gasoline aboveground storage tanks at the facility.
June 21, 1993	ENSR Consulting and Engineering (ENSR), the environmental consultant for the adjacent property owner on which off-site well MW-9 is located, submitted a request to sample monitor well MW-9.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

July 15, 1993	ENSR split a groundwater sample collected from monitor well MW-9 with Brown and Caldwell.
July 30, 1993	USTank Management, Inc. submitted a tank tightness test report to Brown and Caldwell. The report indicated that both tanks and their associated piping passed.
August 16-19, 1993	Brown and Caldwell installed two additional downgradient monitor wells. Brown and Caldwell sampled each of the existing and newly installed monitor wells.
January 26, 1994	Brown and Caldwell performed a groundwater monitoring event; the existing monitor wells and the fresh water well were purged and sampled. The groundwater samples were analyzed for BTEX.
May 6, 1994	A Remedial Action Plan (RAP) was submitted to the NMOCD.
August 11, 1994	The RAP was approved by the NMOCD.
May 3, 1995	Brown and Caldwell conducted the May 1995 groundwater sampling event.
July 31, 1995	Brown and Caldwell conducted the July 1995 groundwater sampling event.
August 2-9, 1995	Installation of the biosparging system was initiated. Nineteen combined injection/extraction wells and three vacuum extraction wells were installed.
August 14-26, 1995	Remedial Construction Services, Inc. (RCS) constructed the initial design of the biosparging system.
September 19, 1995	Operation of the extraction portion of the biosparging system commenced.
November 13, 1995	Operation of the injection portion of the biosparging system commenced.
November 14, 1995	Brown and Caldwell conducted the November 1995 groundwater sampling event.
February 23, 1996	Brown and Caldwell conducted the February 1996 groundwater sampling event.
May 31, 1996	Brown and Caldwell conducted the May 1996 groundwater sampling event.
August 23, 1996	Brown and Caldwell conducted the August 1996 groundwater sampling event.
December 2, 1996	Brown and Caldwell conducted the December 1996 groundwater sampling event.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

March 6-7, 1997	BJ Services removed three field waste tanks and associated hydrocarbon-impacted soil.
March 12, 1997	Brown and Caldwell conducted the March 1997 groundwater sampling event.
March 14, 1997	Vapor extraction well VE-4 was installed.
April 1997	Vapor extraction well VE-4 was connected to the vapor extraction system.
June 12, 1997	Brown and Caldwell conducted the June 1997 groundwater sampling event.
September 11-12, 1997	Brown and Caldwell conducted the September 1997 groundwater sampling event.
December 10, 1997	Brown and Caldwell conducted the December 1997 groundwater sampling event.
February 3-14, 1998	Air injection wells AI-20 through AI-24, vapor extraction wells VE-5 through VE-7, and monitor wells MW-11A and MW-12 were installed.
February 19, 1998	Operation of previously existing injection wells was suspended in preparation for start-up of new injection wells AI-20 through AI-24.
March 10, 1998	Operation of new air injection wells AI-20 through AI-24 and new vapor extraction wells VE-5 through VE-7 commenced.
March 23-24, 1998	Brown and Caldwell conducted the March 1998 groundwater sampling event.
March 24, 1998	Operation of previously existing injection wells and vapor extraction wells resumed.
June 23, 1998	Brown and Caldwell conducted the June 1998 groundwater sampling event.
September 30, 1998	Brown and Caldwell conducted the September 1998 groundwater sampling event.
December 9-10, 1998	Brown and Caldwell conducted the December 1998 groundwater sampling event.
January 21, 1999	The NMOCD requested submittal of a work plan by March 22, 1999 to perform additional groundwater delineation in the area of the former field waste tanks and the former AST/MW-6 area.
March 9-10, 1999	Brown and Caldwell conducted the March 1999 groundwater sampling event.
March 19, 1999	Brown and Caldwell submitted the work plan for groundwater delineation activities that was requested by the NMOCD.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

May 19, 1999	The NMOCD approved the groundwater delineation work plan.
June 10, 1999	Brown and Caldwell performed sampling of existing monitor wells for the June /July 1999 groundwater sampling event.
July 2, 1999	Brown and Caldwell completed plugging and abandonment of monitor wells MW-2, MW-6, and MW-11; installed and developed monitor wells MW-12D and MW-13; and sampled monitor wells MW-12D and MW-13 to complete the June/July 1999 groundwater sampling event.
July 14, 1999	Brown and Caldwell redirected air discharge from the shallow injection well injection system to Lateral No. 1 and optimized air flow to injection wells AI-16 and AI-17 to apply increased remedial pressure to the eastern portion of the west plume.
September 13-14, 1999	Brown and Caldwell conducted the September 1999 groundwater sampling event.
December 9, 1999	Brown and Caldwell conducted the December 1999 groundwater sampling event.
March 9-10, 2000	Brown and Caldwell conducted the March 2000 groundwater sampling event and shut off air flow to biosparging system Lateral Nos. 4S, 5S, 6S, and 7S.
June 8, 2000	Brown and Caldwell conducted the June 2000 groundwater sampling event.
September 13, 2000	Brown and Caldwell conducted the September 2000 groundwater sampling event.
November 1, 2000	Brown and Caldwell deactivated the biosparging system.
December 7, 2000	Brown and Caldwell conducted the December 2000 groundwater sampling event.
January 2001	Brown and Caldwell installed and sampled monitor wells MW-14 and MW-15.
March 8-9, 2001	Brown and Caldwell conducted the March 2001 groundwater sampling event.
June 21-22, 2001	Brown and Caldwell conducted the June 2001 groundwater sampling event.
July 23, 2001	Brown and Caldwell collected soil samples from four soil borings installed at the former fueling system area of the facility to confirm the effectiveness of the biosparging system in remediating hydrocarbon impact to soil, as specified in the NMOCD-approved RAP.
September 10, 2001	Brown and Caldwell conducted the September 2001 groundwater sampling event.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

December 6, 2001	Brown and Caldwell conducted the December 2001 groundwater sampling event.
February 26, 2002	Brown and Caldwell repaired the crushed well completion on monitor well MW-10.
February 28, 2002	NMOCD requested an evaluation of chloride content of groundwater at the facility.
March 11-12, 2002	Brown and Caldwell conducted the March 2002 groundwater sampling event. Groundwater samples from all water-producing wells at the facility were analyzed for chloride content.
May 21, 2002	Brown and Caldwell submitted the report for the March 2002 groundwater sampling event, including an evaluation of chloride content of groundwater at the facility and a recommendation for installation of a downgradient off-site well (MW-16) to replace off-site well OW-4, which has gone dry.
June 17-18, 2002	Brown and Caldwell conducted the June 2002 groundwater sampling event.
September 16, 2002	Brown and Caldwell conducted the September 2002 groundwater sampling event.
November 11, 2002	Brown and Caldwell submitted the June 2002 Groundwater Sampling Report and Biosparging System Closure Report.
January 9, 2003	Brown and Caldwell conducted the January 2003 groundwater sampling event.
March 6, 2003	Brown and Caldwell conducted the March 2003 groundwater sampling event.
May 13, 2003	Brown and Caldwell installed monitor well MW-16 at a location to the west of the facility.
June 19, 2003	Brown and Caldwell initiated the June 2003 groundwater sampling event.
August 22, 2003	Brown and Caldwell completed the June 2003 groundwater sampling event.
October 2, 2003	Brown and Caldwell conducted the October 2003 groundwater sampling event.
December 17-18, 2003	Brown and Caldwell conducted the December 2003 groundwater sampling event.
March 29-30, 2004	Brown and Caldwell conducted the March 2004 groundwater sampling event.

Table 1
Site Chronology
BJ Services Company, U.S.A.
Hobbs, New Mexico

March 8-11, 2005	Brown and Caldwell conducted the March 2005 groundwater sampling event. Brown and Caldwell installed monitor wells MW-17 and MW-18 in the eastern portion of the facility, and monitor well MW-19 at a location to the east of the facility. Soil samples were taken from the MW-17, MW-18, and MW-19 soil borings, as well as from a soil boring identified as SB-16, which was installed at a location adjacent to existing monitor well MW-16. Brown and Caldwell decommissioned the biosparging system at the former fuel island area.
April 13, 2005	The Final Closure Report for the former fuel island area (GW-072) was submitted to NMOCD.
June 15, 2005	NMOCD approved the Final Closure Report for the former fuel island area (GW-072).

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-1	3,647.53	8/10/1992	53.22	0.00	3,594.31	(1)
		2/9/1993	53.03	0.00	3,594.50	
		8/18/1993	53.10	0.00	3,594.43	
		1/26/1994	53.31	0.00	3,594.22	
		5/3/1995	54.64	0.20	3,593.05	(2)
		7/31/1995	54.14	0.00	3,593.39	
		11/14/1995	53.69	0.00	3,593.84	
		2/23/1996	54.32	0.00	3,593.21	
		5/31/1996	54.14	0.00	3,593.39	
		8/23/1996	56.17	0.00	3,591.36	
		12/2/1996	55.27	0.00	3,592.26	
		3/12/1997	55.70	0.27	3,592.05	
		6/12/1997	55.08	0.02	3,592.47	
		9/12/1997	55.64	0.51	3,592.31	
		12/10/1997	55.46	0.00	3,592.07	PSH Sheen
		3/24/1998	55.81	0.00	3,591.72	PSH Sheen
		6/23/1998	56.38	0.06	3,591.20	
		9/30/1998	56.82	0.00	3,590.71	PSH Sheen
		12/9/1998	57.05	0.00	3,590.48	
		3/10/1999	57.45	0.00	3,590.08	
		6/10/1999	58.02	0.00	3,589.51	
		7/2/1999	57.90	0.00	3,589.63	
		9/14/1999	58.14	0.00	3,589.39	
		12/9/1999	-	-	-	(3)
		3/9/2000	58.99	0.00	3,588.54	
		06/00	-	-	-	
		09/00	-	-	-	
		12/7/00	-	-	-	
		3/8/2001	60.35	0.00	3,587.18	
		6/21/01	60.99	0.00	3,586.54	
		9/10/01	61.17	0.00	3,586.36	
		12/6/2001	not measured			
		03/11/02	62.11	0.00	3,585.42	
		6/17/02	62.53	0.00	3,585.00	
		9/16/2002	62.43	0.00	3,585.10	
		1/9/2003	62.61	0.00	3,584.92	
		3/6/2003	62.72	0.00	3,584.81	
		6/19/2003	-	-	-	(3) - well not located
		10/2/2003	62.97	0.00	3,584.56	
		12/17/2003	63.21	0.00	3,584.32	
		3/29/2004	63.24	0.00	3,584.29	
		3/8/2005	-	-	-	(11)
MW-2	3,644.84	8/10/1992	52.82	0.00	3,592.02	(1)
		2/9/1993	49.60	0.00	3,595.24	
		8/18/1993	49.71	0.00	3,595.13	
		1/26/1994	49.97	0.00	3,594.87	
		5/3/1995	-	-	-	(4),(5)
MW-3	3,645.00	8/10/1992	52.99	0.00	3,592.01	(1)
		2/9/1993	52.72	0.00	3,592.28	
		8/18/1993	52.82	0.00	3,592.18	
		1/26/1994	53.05	0.00	3,591.95	
		5/3/1995	54.31	0.00	3,590.69	
		7/31/1995	51.24	0.00	3,593.76	
		11/14/1995	51.10	0.00	3,593.90	
		2/23/1996	51.68	0.00	3,593.32	
		5/31/1996	51.45	0.00	3,593.55	
		8/23/1996	51.55	0.00	3,593.45	
		12/2/1996	52.23	0.00	3,592.77	
		3/12/1997	52.67	0.00	3,592.33	
		6/12/1997	52.68	0.00	3,592.32	
		9/11/1997	52.71	0.00	3,592.29	
		12/10/1997	52.89	0.00	3,592.11	
		3/23/1998	53.22	0.00	3,591.78	
		6/23/1998	53.66	0.00	3,591.34	
		9/30/1998	54.06	0.00	3,590.94	
		12/9/1998	54.36	0.00	3,590.64	
		3/10/1999	54.72	0.00	3,590.28	
		6/10/1999	55.17	0.00	3,589.83	
		7/2/1999	55.15	0.00	3,589.85	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-3 cont.	3,645.00	9/14/1999	55.42	0.00	3,589.58	
		12/9/1999	55.78	0.00	3,589.22	
		3/9/2000	56.23	0.00	3,588.77	
		6/8/2000	56.66	0.00	3,588.34	
		9/13/2000	56.77	0.00	3,588.23	
		12/7/2000	57.15	0.00	3,587.85	
		3/8/2001	57.69	0.00	3,587.31	
		6/21/01	58.34	0.00	3,586.66	
		9/10/01	58.54	0.00	3,586.46	
		12/6/2001	59.04	0.00	3,585.96	
		3/11/2002	59.50	0.00	3,585.50	
		6/17/02	59.83	0.00	3,585.17	
		9/16/2002	59.80	0.00	3,585.20	
		1/9/2003	60.01	0.00	3,584.99	
		3/6/2003	60.10	0.00	3,584.90	
		6/19/2003	-	-	-	(3) - well not located
		10/2/2003	60.34	0.00	3,584.66	
		12/17/2003	60.50	0.00	3,584.50	
		3/29/2004	60.55	0.00	3,584.45	
		3/8/2005	-	-	-	(11)
MW-4	3,645.28	8/10/1992	50.55	0.00	3,594.73	(1)
		2/9/1993	50.26	0.00	3,595.02	
		8/18/1993	50.38	0.00	3,594.90	
		1/26/1994	50.90	0.30	3,594.63	
		5/3/1995	51.51	0.45	3,594.14	
		7/31/1995	51.74	0.26	3,593.75	
		11/14/1995	51.03	0.00	3,594.25	
		2/23/1996	51.65	0.01	3,593.64	
		5/31/1996	51.48	0.00	3,593.80	
		8/23/1996	53.49	0.00	3,591.79	
		12/2/1996	52.32	0.00	3,592.96	
		3/12/1997	52.74	0.05	3,592.58	
		6/12/1997	53.08	0.44	3,592.56	
		9/12/1997	52.60	0.15	3,592.80	
		12/10/1997	52.89	0.00	3,592.39	PSH Sheen
		3/24/1998	53.20	0.25	3,592.29	
		6/23/1998	53.82	0.22	3,591.64	
		9/30/1998	53.96	0.00	3,591.32	200 ml PSH
		12/9/1998	54.27	0.00	3,591.01	
		3/10/1999	54.69	0.04	3,590.62	
		6/10/1999	55.07	0.00	3,590.21	
		7/2/1999	55.10	0.00	3,590.18	
		9/14/1999	55.33	0.00	3,589.95	
		12/9/1999	55.79	0.00	3,589.49	
		3/10/2000	56.12	0.00	3,589.16	
		6/8/2000	56.67	0.00	3,588.61	
		9/13/2000	56.65	0.00	3,588.63	
		12/7/2000	57.05	0.00	3,588.23	
		3/8/2001	57.72	0.00	3,587.56	
		6/21/01	58.18	0.00	3,587.10	
		9/10/01	58.54	0.00	3,586.74	
		12/6/2001	58.88	0.00	3,586.40	
		3/11/2002	59.41	0.00	3,585.87	
		6/17/02	59.67	0.00	3,585.61	
		9/16/2002	59.71	0.00	3,585.57	
		1/9/2003	59.91	0.00	3,585.37	
		3/6/2003	60.03	0.00	3,585.25	
		6/19/2003	60.16	0.00	3,585.12	
		10/2/2003	60.30	0.00	3,584.98	
		12/17/2003	60.35	0.00	3,584.93	
		3/29/2004	60.38	0.00	3,584.90	
		3/8/2005	-	-	-	(11)
MW-5	3,647.72	8/10/1992	52.38	0.00	3,595.34	(1)
		2/9/1993	52.06	0.00	3,595.66	
		8/18/1993	52.16	0.00	3,595.56	
		1/26/1994	52.50	0.00	3,595.22	
		5/3/1995	53.57	0.00	3,594.15	
		7/31/1995	53.27	0.00	3,594.45	
		11/14/1995	52.83	0.00	3,594.89	
		2/23/1996	53.57	0.00	3,594.15	
		5/31/1996	53.16	0.00	3,594.56	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-5 cont.	3,647.72	8/23/1996	53.41	0.00	3,594.31	
		12/2/1996	53.98	0.00	3,593.74	
		3/12/1997	54.44	0.00	3,593.28	
		6/12/1997	54.48	0.00	3,593.24	
		9/12/1997	54.29	0.00	3,593.43	
		12/10/1997	54.66	0.00	3,593.06	
		3/23/1998	55.05	0.00	3,592.67	
		6/23/1998	55.44	0.00	3,592.28	
		9/30/1998	55.65	0.00	3,592.07	
		12/9/1998	56.00	0.00	3,591.72	
		3/9/1999	56.45	0.00	3,591.27	
		6/10/1999	56.91	0.00	3,590.81	
		7/2/1999	56.93	0.00	3,590.79	
		9/14/1999	57.12	0.00	3,590.60	
		12/9/1999	57.41	0.00	3,590.31	
		3/9/2000	57.92	0.00	3,589.80	
		6/8/2000	58.32	0.00	3,589.40	
		9/13/2000	58.36	0.00	3,589.36	
		12/7/2000	58.71	0.00	3,589.01	
		3/8/2001	59.36	0.00	3,588.36	
		6/21/01	59.94	0.00	3,587.78	
		9/10/01	59.85	0.00	3,587.87	
		12/6/2001	60.56	0.00	3,587.16	
		3/11/02	61.12	0.00	3,586.60	
		6/17/02	61.43	0.00	3,586.29	
		9/16/2002	61.52	0.00	3,586.20	
		1/9/2003	61.75	0.00	3,585.97	
		3/6/2003	61.90	0.00	3,585.82	
		6/19/2003	62.01	0.00	3,585.71	
		10/2/2003	62.16	0.00	3,585.56	
		12/17/2003	62.35	0.00	3,585.37	
		3/29/2004	62.56	0.00	3,585.16	
		3/8/2005	61.80	0.00	3,585.92	
MW-6	3,644.74	2/9/1993	50.58	0.00	3,594.16	(1)
		8/18/1993	50.78	0.00	3,593.96	
		1/26/1994	51.00	0.00	3,593.74	
		5/3/1995	52.63	0.00	3,592.11	
		7/31/1995	51.90	0.00	3,592.84	
		11/14/1995	51.19	0.00	3,593.55	
		2/23/1996	52.10	0.00	3,592.64	
		5/31/1996	51.76	0.00	3,592.98	
		8/23/1996	51.63	0.00	3,593.11	
		12/2/1996	52.85	0.00	3,591.89	
		3/12/1997	53.55	0.00	3,591.19	
		6/12/1997	52.08	0.00	3,592.66	
		9/11/1997	53.72	0.00	3,591.02	
		12/10/1997	53.27	0.00	3,591.47	
		3/23/1998	53.56	0.00	3,591.18	
		6/23/1998	52.88	0.00	3,591.86	
		9/30/1998	54.89	0.00	3,589.85	
		12/9/1998	54.57	0.00	3,590.17	
		3/10/1999	55.10	0.00	3,589.64	
		7/2/1999	-	-	-	(5),(6)
MW-7	3,644.55	2/9/1993	50.53	0.00	3,594.02	(1)
		8/18/1993	50.74	0.00	3,593.81	
		1/26/1994	51.01	0.00	3,593.54	
		5/3/1995	52.25	0.00	3,592.30	
		7/31/1995	51.92	0.00	3,592.63	
		11/14/1995	51.48	0.00	3,593.07	
		2/23/1996	52.15	0.00	3,592.40	
		5/31/1996	51.78	0.00	3,592.77	
		8/23/1996	52.02	0.00	3,592.53	
		12/2/1996	52.52	0.00	3,592.03	
		3/12/1997	52.99	0.00	3,591.56	
		6/12/1997	53.08	0.00	3,591.47	
		9/11/1997	53.00	0.00	3,591.55	
		12/10/1997	53.28	0.00	3,591.27	
		3/23/1998	53.59	0.00	3,590.96	
		6/23/1998	54.20	0.00	3,590.35	
		9/30/1998	54.54	0.00	3,590.01	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-7 cont.	3,644.55	12/9/1998	54.74	0.00	3,589.81	
		3/9/1999	55.15	0.00	3,589.40	
		6/10/1999	55.66	0.00	3,588.89	
		7/2/1999	55.73	0.00	3,588.82	
		9/13/1999	55.94	0.00	3,588.61	
		12/9/1999	56.38	0.00	3,588.17	
		3/9/2000	56.74	0.00	3,587.81	
		6/8/2000	57.17	0.00	3,587.38	
		9/13/2000	57.40	0.00	3,587.15	
		12/7/2000	57.77	0.00	3,586.78	
		3/8/2001	58.29	0.00	3,586.26	
		6/21/01	58.91	0.00	3,585.64	
		9/10/01	59.25	0.00	3,585.30	
		12/6/2001	59.75	0.00	3,584.80	
		3/11/2002	60.03	0.00	3,584.52	
		6/17/02	60.39	0.00	3,584.16	
		9/16/2002	60.39	0.00	3,584.16	
		1/9/2003	60.53	0.00	3,584.02	
		3/6/2003	60.61	0.00	3,583.94	
		6/19/2003	60.73	0.00	3,583.82	
		10/2/2003	60.84	0.00	3,583.71	
		12/17/2003	60.99	0.00	3,583.56	
		3/29/2004	61.19	0.00	3,583.36	
		3/8/2005	-	-	-	(11)
MW-8	3,644.87	2/9/1993	50.48	0.00	3,594.39	(1)
		8/18/1993	50.67	0.00	3,594.20	
		1/26/1994	50.96	0.00	3,593.91	
		5/3/1995	52.15	0.00	3,592.72	
		7/31/1995	51.77	0.00	3,593.10	
		11/14/1995	51.37	0.00	3,593.50	
		2/23/1996	52.17	0.00	3,592.70	
		5/31/1996	51.55	0.00	3,593.32	
		8/23/1996	51.92	0.00	3,592.95	
		12/2/1996	52.43	0.00	3,592.44	
		3/12/1997	52.93	0.00	3,591.94	
		6/12/1997	53.96	0.00	3,590.91	
		9/11/1997	52.73	0.00	3,592.14	
		12/10/1997	53.15	0.00	3,591.72	
		3/23/1998	53.51	0.00	3,591.36	
		6/23/1998	54.01	0.00	3,590.86	
		9/30/1998	54.35	0.00	3,590.52	
		12/9/1998	54.60	0.00	3,590.27	
		3/9/1999	55.00	0.00	3,589.87	
		6/10/1999	55.56	0.00	3,589.31	
		7/2/1999	55.57	0.00	3,589.30	
		9/13/1999	55.72	0.00	3,589.15	
		12/9/1999	-	-	-	(3)
		3/9/2000	56.52	0.00	3,588.35	
		06/00	-	-	-	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	58.11	0.00	3,586.76	
		6/21/01	58.72	0.00	3,586.15	
		9/10/01	58.94	0.00	3,585.93	
		12/6/2001	not measured			
		3/11/2002	59.94	0.00	3,584.93	
		6/17/02	60.22	0.00	3,584.65	
		9/16/2002	60.24	0.00	3,584.63	
		1/9/2003	60.42	0.00	3,584.45	
		3/6/2003	60.52	0.00	3,584.35	
		6/19/2003	60.63	0.00	3,584.24	
		10/2/2003	60.75	0.00	3,584.12	
		12/17/2003	60.92	0.00	3,583.95	
		3/29/2004	61.11	0.00	3,583.76	
		3/8/2005	-	-	-	(11)
MW-9	3,644.78	4/22/1993	49.73	0.00	3,595.05	(1)
		7/15/1993	49.65	0.00	3,595.13	
		8/18/1993	49.85	0.00	3,594.93	
		1/26/1994	50.02	0.00	3,594.76	
		5/3/1995	51.35	0.00	3,593.43	
		7/31/1995	50.97	0.00	3,593.81	
		11/14/1995	50.43	0.00	3,594.35	
		2/23/1996	51.12	0.00	3,593.66	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-9 cont.	3,644.78	5/31/1996	50.89	0.00	3,593.89	
		8/23/1996	50.98	0.00	3,593.80	
		12/2/1996	51.58	0.00	3,593.20	
		3/12/1997	52.21	0.05	3,592.61	
		6/12/1997	52.10	0.00	3,592.68	PSH Sheen
		9/12/1997	51.95	0.00	3,592.83	PSH Sheen
		12/10/1997	52.37	0.00	3,592.41	PSH Sheen
		3/23/1998	52.68	0.00	3,592.10	PSH Sheen
		6/23/1998	53.08	0.00	3,591.70	PSH Sheen
		9/30/1998	53.39	0.01	3,591.40	PSH Sheen
		12/9/1998	53.68	0.00	3,591.10	
		3/10/1999	54.15	0.00	3,590.63	
		6/10/1999	54.68	0.00	3,590.10	
		7/2/1999	54.71	0.00	3,590.07	
		9/13/1999	54.71	0.00	3,590.07	
		12/9/1999	-	-	-	(3)
		3/9/2000	55.69	0.00	3,589.09	
		06/00	-	-	-	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	57.03	0.00	3,587.75	
		6/21/01	57.91	0.00	3,586.87	
		9/10/01	57.95	0.00	3,586.83	
		12/6/2001	not measured			
		3/11/2002	58.96	0.00	3,585.82	
		6/17/02	59.14	0.00	3,585.64	
		9/16/2002	not measured			
		1/9/2003	59.34	0.00	3,585.44	
		3/6/2003	59.48	0.00	3,585.30	
		6/19/2003	59.64	0.00	3,585.14	
		10/2/2003	59.76	0.00	3,585.02	
		12/17/2003	59.93	0.00	3,584.85	
		3/29/2004	60.13	0.00	3,584.65	
		3/8/2005	-	-	-	(11)
MW-10	3,644.47	8/18/1993	51.54	0.00	3,592.93	(1)
		1/26/1994	51.90	0.00	3,592.57	
		5/3/1995	52.97	0.00	3,591.50	
		7/31/1995	52.87	0.00	3,591.60	
		11/14/1995	52.51	0.00	3,591.96	
		2/23/1996	53.05	0.00	3,591.42	
		5/31/1996	52.79	0.00	3,591.68	
		8/23/1996	53.03	0.00	3,591.44	
		12/2/1996	53.41	0.00	3,591.06	
		3/12/1997	54.21	0.00	3,590.26	
		6/12/1997	53.99	0.00	3,590.48	
		9/12/1997	53.94	0.00	3,590.53	
		12/10/1997	54.12	0.00	3,590.35	
		3/23/1998	54.51	0.00	3,589.96	
		6/23/1998	55.12	0.00	3,589.35	
		9/30/1998	55.61	0.00	3,588.86	
		12/9/1998	55.80	0.00	3,588.67	
		3/9/1999	56.09	0.00	3,588.38	
		6/10/1999	56.60	0.00	3,587.87	
		7/2/1999	56.64	0.00	3,587.83	
		9/14/1999	56.91	0.00	3,587.56	
		12/9/1999	57.37	0.00	3,587.10	
		3/10/2000	57.71	0.00	3,586.76	
		6/8/2000	58.08	0.00	3,586.39	
		9/13/2000	58.44	0.00	3,586.03	
		12/7/2000	58.89	0.00	3,585.58	
		3/9/2001	59.31	0.00	3,585.16	
		6/21/01	59.89	0.00	3,584.58	
		9/10/01	61.34	0.00	3,583.13	
		12/6/2001	60.65	0.00	3,583.82	
		3/11/2002	60.69	0.00	3,583.78	
		6/17/02	60.98	0.00	3,583.49	
		9/16/2002	61.00	0.00	3,583.47	
		1/9/2003	61.07	0.00	3,583.40	
		3/6/2003	61.19	0.00	3,583.28	
		6/19/2003	61.26	0.00	3,583.21	
		10/2/2003	61.38	0.00	3,583.09	
		12/17/2003	61.55	0.00	3,582.92	
		3/29/2004	61.71	0.00	3,582.76	
		3/8/2005	60.91	0.00	3,583.56	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-11	3,643.78	8/18/1993	51.92	0.00	3,591.86	(1)
		1/26/1994	52.32	0.00	3,591.46	
		5/3/1995	53.38	0.00	3,590.40	
		7/31/1995	53.35	0.00	3,590.43	
		11/14/1995	52.96	0.00	3,590.82	
		2/23/1996	53.50	0.00	3,590.28	
		5/31/1996	53.25	0.00	3,590.53	
		8/23/1996	53.49	0.00	3,590.29	
		12/2/1996	53.79	0.00	3,589.99	
		3/12/1997	53.81	0.00	3,589.97	
		6/12/1997	53.96	0.00	3,589.82	
		9/12/1997	52.93	0.00	3,590.85	
		12/10/1997	-	-	-	(5),(6)
MW-11A	3,644.24	3/23/1998	54.79	0.00	3,589.45	(7)
		6/23/1998	55.43	0.00	3,588.81	
		9/30/1998	55.96	0.00	3,588.28	
		12/9/1998	56.13	0.00	3,588.11	
		3/10/1999	56.43	0.00	3,587.81	
		6/10/1999	56.94	0.00	3,587.30	
		7/2/1999	57.01	0.00	3,587.23	
		9/14/1999	57.36	0.00	3,586.88	
		12/9/1999	57.72	0.00	3,586.52	
		3/9/2000	58.01	0.00	3,586.23	
		6/8/2000	58.40	0.00	3,585.84	
		9/13/2000	58.84	0.00	3,585.40	
		12/7/2000	59.29	0.00	3,584.95	
		3/8/2001	59.72	0.00	3,584.52	
		6/21/01	60.28	0.00	3,583.96	
		9/10/01	60.69	0.00	3,583.55	
		12/6/2001	60.88	0.00	3,583.36	
		3/11/2002	61.42	0.00	3,582.82	
		6/17/02	61.55	0.00	3,582.69	
		9/16/2002	61.59	0.00	3,582.65	
		1/9/2003	61.67	0.00	3,582.57	
		3/6/2003	61.70	0.00	3,582.54	
		6/19/2003	61.84	0.00	3,582.40	
		10/2/2003	61.88	0.00	3,582.36	
		12/17/2003	62.05	0.00	3,582.19	
		3/29/2004	62.25	0.00	3,581.99	
		3/8/2005	61.45	0.00	3,582.79	
MW-12	3,644.29	3/23/1998	54.72	0.00	3,589.57	(7)
		6/23/1998	55.48	0.00	3,588.81	
		9/30/1998	56.02	0.00	3,588.27	
		12/9/1998	56.17	0.00	3,588.12	
		3/10/1999	56.45	0.00	3,587.84	
		6/10/1999	56.97	0.00	3,587.32	
		7/2/1999	56.99	0.00	3,587.30	
		9/14/1999	57.41	0.00	3,586.88	
		12/9/1999	57.76	0.00	3,586.53	
		3/10/2000	58.08	0.00	3,586.21	
		6/8/2000	58.42	0.00	3,585.87	
		9/13/2000	58.85	0.00	3,585.44	
		12/7/2000	59.31	0.00	3,584.98	
		3/8/2001	59.76	0.00	3,584.53	
		6/21/01	60.29	0.00	3,584.00	
		9/10/01	60.79	0.00	3,583.50	
		12/6/2001	well dry during this and subsequent monitoring events			
		3/8/2005	-	-	-	(11)
MW-12D	3,644.38	7/2/1999	57.13	0.00	3,587.25	(8)
		9/14/1999	57.74	0.00	3,586.64	
		12/9/1999	57.86	0.00	3,586.52	
		3/9/2000	58.24	0.00	3,586.14	
		6/8/2000	58.56	0.00	3,585.82	
		09/00	-	-	-	
		12/00	-	-	-	
		3/8/2001	-	-	-	
		6/21/01	-	-	-	
		9/10/01	-	-	-	
		12/6/2001	61.30	0.00	3,583.08	
		3/11/2002	61.61	0.00	3,582.77	

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
MW-12D cont.	3,644.38	6/17/02	61.71	0.00	3,582.67	
		9/16/2002	61.75	0.00	3,582.63	
		1/9/2003	61.86	0.00	3,582.52	
		3/6/2003	61.91	0.00	3,582.47	
		6/19/2003	61.95	0.00	3,582.43	
		10/2/2003	62.05	0.00	3,582.33	
		12/17/2003	62.21	0.00	3,582.17	
		3/29/2004	62.38	0.00	3,582.00	
		3/8/2005	61.56	0.00	3,582.82	
MW-13	3,645.52	7/2/1999	56.60	0.00	3,588.92	(9)
		9/14/1999	56.92	0.00	3,588.60	
		12/9/1999	57.28	0.00	3,588.24	
		3/10/2000	57.68	0.00	3,587.84	
		6/8/2000	58.04	0.00	3,587.48	
		9/13/2000	58.29	0.00	3,587.23	
		12/7/2000	58.68	0.00	3,586.84	
		3/8/2001	59.19	0.00	3,586.33	
		6/21/01	59.80	0.00	3,585.72	
		9/10/01	60.03	0.00	3,585.49	
		12/6/2001	60.59	0.00	3,584.93	
		3/11/2002	60.94	0.00	3,584.58	
		6/17/02	61.28	0.00	3,584.24	
		9/16/2002	61.23	0.00	3,584.29	
		1/9/2003	61.38	0.00	3,584.14	
		3/6/2003	61.45	0.00	3,584.07	
		6/19/2003	61.58	0.00	3,583.94	
		10/2/2003	61.70	0.00	3,583.82	
		12/17/2003	61.93	0.00	3,583.59	
		3/29/2004	62.04	0.00	3,583.48	
		3/8/2005	-	-	-	(11)
MW-14	3,642.45	3/8/2001	61.07	0.00	3,581.38	
		6/21/01	61.71	0.00	3,580.74	
		9/10/01	62.31	0.00	3,580.14	
		12/6/2001	62.80	0.00	3,579.65	
		3/11/2002	62.70	0.00	3,579.75	
		6/17/02	62.65	0.00	3,579.80	
		9/16/2002	62.55	0.00	3,579.90	
		1/9/2003	62.59	0.00	3,579.86	
		3/6/2003	62.64	0.00	3,579.81	
		6/19/2003	62.64	0.00	3,579.81	
		10/2/2003	62.73	0.00	3,579.72	
		12/17/2003	62.93	0.00	3,579.52	
		3/29/2004	63.04	0.00	3,579.41	
		3/8/2005	62.18	0.00	3,580.27	
MW-15	3,643.24	3/8/2001	59.79	0.00	3,583.45	
		6/21/01	60.49	0.00	3,582.75	
		9/10/01	61.02	0.00	3,582.22	
		12/6/2001	61.47	0.00	3,581.77	
		3/11/2002	61.65	0.00	3,581.59	
		6/17/02	61.68	0.00	3,581.56	
		9/16/2002	61.47	0.00	3,581.77	
		1/9/2003	61.59	0.00	3,581.65	
		3/6/2003	61.63	0.00	3,581.61	
		6/19/2003	61.62	0.00	3,581.62	
		10/2/2003	61.70	0.00	3,581.54	
		12/17/2003	61.83	0.00	3,581.41	
		3/29/2004	62.01	0.00	3,581.23	
		3/8/2005	61.13	0.00	3,582.11	
MW-16	3,643.73	6/19/2003	66.50	0.00	3,577.23	
		10/2/2003	66.61	0.00	3,577.12	
		12/17/2003	66.72	0.00	3,577.01	
		3/29/2004	66.86	0.00	3,576.87	
		3/8/2005	65.64	0.00	3,578.09	
MW-17	3642.25	3/11/2005	61.71	0.00	3,582.02	(1)
MW-18	3641.50	3/11/2005	61.76	0.00	3,581.97	(1)
MW-19	3642.25	3/11/2005	69.01	0.00	3,574.72	(1)

Table 2
Cumulative Groundwater Elevation Data
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Top-of-Casing Elevation (MSL)	Date Measured	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (MSL)	Comments
OW-4	3,644.06	7/2/1999	58.18	0.00	3,585.88	(8)
		9/14/1999	58.63	0.00	3,585.43	
		12/9/1999	58.92	0.00	3,585.14	
		3/9/2000	59.19	0.00	3,584.87	
		6/8/2000	59.56	0.00	3,584.50	
		9/13/2000	60.16	0.00	3,583.90	
		12/7/2000	61.15	0.00	3,582.91	
		3/8/2001	61.43	0.00	3,582.63	(10)
		6/21/01	61.48	0.00	3,582.58	
		9/10/01	61.53	0.00	3,582.53	
		12/6/2001	well dry during this and subsequent monitoring events			

(1) - Top of casing elevations and groundwater elevations of all monitor wells were relative to an arbitrary datum of 100.00 feet prior to March 1997 and have been converted to Mean Sea Level (MSL).

(2) - For wells having measurable thickness of free product, the groundwater elevation was calculated as follows:
Groundwater Elevation = (TOC elevation)-(depth to groundwater)+[(free product thickness)x(SG of free product)]
Note: The specific gravity (SG) of the free product is 0.82.

(3) - Not measured.

(4) - Monitor well MW-2 could not be located after January 1994.

(5) - Well plugged and abandoned July 2, 1999.

(6) - Monitor well MW-11 could not be located after September 12, 1997.

(7) - TOC elevations for MW-11A and MW-12 estimated relative to TOC elevation for MW-10.

(8) - TOC elevations for MW-12D and OW-4 estimated relative to TOC elevation for MW-12.

(9) - TOC elevation for MW-13 estimated relative to TOC elevation for MW-7.

(10) -Well dry (measured depth to water is below base of screen); true groundwater elevation is less than listed groundwater elevation.

Table 3
March 2005 Field Screening Results for Groundwater Samples
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Monitor Well	Cumulative Liters Removed	pH	Temperature (°C)	Conductivity (umhos/cm)	Redox (mV)	Dissolved Oxygen (meter) (mg/L)
MW-5	4.5[(1)]	7.03	16.33	978	149.0	6.72
MW-10	4.8[(1)]	6.65	17.07	3,357	-55.8	3.11
MW-11A	6.4[(1)]	6.30	20.44	8,471	-61.6	3.20
MW-12D	2.4	6.10	20.01	1,050	-64.4	0.52
MW-14	11.4[(1)]	6.86	18.26	1,486	132.1	7.32
MW-15	10[(1)]	6.70	18.20	1,473	162.3	5.80
MW-16	3.6	6.67	19.03	3,439	145.1	7.79
MW-17	4.8	7.35	16.60	1,111	103.4	8.54
MW-18	4.2	6.72	19.74	1,393	118.1	8.04
MW-19	4.2	6.60	19.87	1,604	110.5	7.50

Monitor wells MW-10, MW-11A, MW-14, and MW-15 were purged by removing 3 well volumes of groundwater from each well.
(1) - Well was purged dry using bailing techniques.

Table 4
Chloride Analytical Results for Soil Samples
Hobb, New Mexico Facility
BJ Services Company, U.S.A.

Date	Boring	Sample Depth Interval (ft. below grade)	Chloride, Total (325.2)[1]
3/10/2005	MW-17	9-10'	27.3
3/10/2005	MW-17	19-20'	186
3/10/2005	MW-17	29-30'	80.5
3/10/2005	MW-17	39-40'	40.2
3/10/2005	MW-17	49-50'	39.1
3/10/2005	MW-17	59-60'	42.8
3/9/2005	MW-18	9-10'	464
3/9/2005	MW-18	19-20'	363
3/9/2005	MW-18	29-30'	60.1
3/9/2005	MW-18	39-40'	31.4
3/9/2005	MW-18	49-50'	27.1
3/9/2005	MW-18	59-60'	97.9
3/9/2005	MW-19	9-10'	102
3/9/2005	MW-19	19-20'	50.8
3/9/2005	MW-19	29-30'	11.1
3/9/2005	MW-19	39-40'	12.6
3/9/2005	MW-19	49-50'	11
3/9/2005	MW-19	59-60'	13.2
3/9/2005	SB-16	4-5'	31.8
3/9/2005	SB-16	9-10'	39.3
3/9/2005	SB-16	14-15'	105
3/9/2005	SB-16	19-20'	124
3/9/2005	SB-16	24-25'	141
3/9/2005	SB-16	29-30'	93.5
3/9/2005	SB-16	34-35'	45.3
3/9/2005	SB-16	39-40'	70.1
3/9/2005	SB-16	44-45'	31.1
3/9/2005	SB-16	49-50'	32.2
3/9/2005	SB-16	54-55'	29.6
3/9/2005	SB-16	59-60'	26.2

(1) - in mg/kg.

Table 5
Cumulative Results(1) for Chloride(2) Analyses
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Sample Date	Monitor Wells[3]																				
	MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
8/1/1995	160	150	310	130	380	310	350	110	2,200	3,400	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
8/23/1996	130	140	100	99	210	250	360	140	2,000	2,900	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
3/23-24/1998	212	206	126	151	183	223	364	164	2,390	NS	940	1,200	NP	NP	NP	NP	NP	NP	NP	NP	NS
3/9-10/1999	163	156	142	155	411	238	274	123	1,160	NS	834	314	NP	NP	NP	NP	NP	NP	NP	NP	NS
6/10-7/2/1999	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	195	496	NP	NP	NP	NP	NP	NP	266
3/9-10/2000	258	196	196	196	NP	224	241	131	474	NP	1,290	327	117	276	NP	NP	NP	NP	NP	NP	258
1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	368	219	NP	NP	NP	NP	NS
3/8-9/2001	NA	165	172	152	NP	224	250	127	879	NP	1,720	586	NS	276	327	NA	NP	NP	NP	NP	NS-D
6/21/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NS	NA	222	222	NP	NP	NP	NP	NS-D
9/10/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	245	228	NP	NP	NP	NP	NS-D
9/18/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	79	NA	NA	NA	NP	NP	NP	NP	NS-D
12/6/2001	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NS-D	NA	NA	276	215	NP	NP	NP	NP	NS-D
3/11-12/2002	177	172	183	127	NP	188	241	110	861	NP	1,230	NS-D	76	207	284	224	NP	NP	NP	NP	NS-D
6/18/2002	NS	NA	NA	NA	NP	NA	NS	NS	NA	NP	NA	NS-D	NA	145	258	233	NP	NP	NP	NP	NS-D
9/16/2002	NS	NS	NS	121	NP	NS	NS	NS	1,030	NP	1,550	NS-D	86	NS	293	246	NP	NP	NP	NP	NS-D
1/9/2003	NS	NS	NS	123	NP	NS	NS	NS	525	NP	3,150	NS-D	95	NS	179	228	NP	NP	NP	NP	NS-D
3/6/2003	NS	NS	NS	116	NP	NS	NS	NS	363	NP	2,900	NS-D	102	NS	163	272	NP	NP	NP	NP	NS-D
6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	89.3	NS	NS	NS	983	NP	NP	NP	NS-D
8/22/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NS	NS	182	280	841	NP	NP	NP	NS-D
10/2/2003	NS	NS	NS	194	NP	NS	NS	NS	420	NP	3,240	NS-D	99.8	NS	175	298	963	NP	NP	NP	NS-D
12/18/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	123	263	823	NP	NP	NP	NS-D
3/30/2004	NS	NS	NS	70	NP	NS	NS	NS	928	NP	2,980	NS-D	116	NS	119	245	753	NP	NP	NP	NS-D
3/24/2005	NP	NP	NP	140	NP	NP	NP	NP	798	NP	2,740	NP	161	NP	303	321	1,140	167	199	330	NP

(1) - in mg/L.

(2) - NMWQCC standard for chloride is 250 mg/L.

(3) - MW-2 not operative after May 3, 1995; P&A'd 7/1/99.
MW-6 P&A'd 7/1/99.
MW-11 P&A'd 7/1/99.
MW-11A installed February 1998.
MW-12 installed February 1998 (screened at the top of the saturated zone).
MW-12D installed June 1999, adjacent to MW-12 (screened in a lower portion of the uppermost saturated zone).
MW-13 installed June 1999.
MW-14 and MW-15 installed January 2001.
MW-16 installed May 2003.
MW-17, MW-18, and MW-19 installed March 2005.
MW-1, MW-3, MW-4, MW-7, MW-8, MW-9, MW-12, MW-13, and OW-4 P&A'd March 2005.

NP = not present at time of sampling event.
NS = not sampled during applicable sampling event.
NA = not analyzed for chloride during applicable sampling event.
NS-D = not sampled because well was dry during applicable sampling event.

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																			
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Bicarbonate, as $CaCO_3$ (mg/L)	8/1/1995	380	430	490	290	670	440	360	570	520	560	NP[2]	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS[3]
	8/23/1996	310	310	210	270	120	400	280	390	520	430	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	286	214	175	247	180	309	260	306	557	NS	319	451	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	92	309	186	283	286	358	317	333	278	NS	335	386	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	200	520	NP	NP	NP	NP	NP	NP	316
	3/9-10/2000	89.1	248	160	253	NP	301	362	279	455	NP	703	402	244	240	NP	NP	NP	NP	NP	NP	1020
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	374	250	NP	NP	NP	NP	NS
	3/8-9/2001	90.9	242	232	222	NP	283	252	252	586	NP	646	475	NS	131	NA[4]	NS	NP	NP	NP	NP	NS-D[5]
	3/11-12/2002	230	230	210	260	NP	260	340	260	784	NP	520	NS-D	260	164	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	243	NP	NS	NS	NS	273	NP	401	NS-D	241	NS	373	231	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	232	NS	NA	NA	163	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	214	NP	NS	NS	NS	582	NP	378	NS-D	214	NS	368	209	279	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	225	NP	NP	NP	NP	523	NP	485	NP	224	NP	448	227	352	251	273	207	NP
Carbonate, as $CaCO_3$ (mg/L)	8/1/1995	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	NS	< 1	< 1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<1	<1	<1	<1	<1	< 1	< 1	< 1	< 1	NS	< 1	< 1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<1	<1	NP	NP	NP	NP	NP	NP	<1
	3/9-10/2000	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	NP	NP	NP	NP	NP	<4
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<2	<2	NP	NP	NP	NP	NS
	3/8-9/2001	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	<2	<2	NS	<2	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	<2	<2	<2	<2	NP	<2	<2	<2	<2	NP	<2	NS-D	<2	<2	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	<2	NP	NS	NS	NS	<2	NP	<2	NS-D	<2	NS	3.03	<2	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NA	NS-D	<2	NS	NA	NA	< 2	NP	NP	NP	NS-D
	12/18/2004	NS	NS	NS	234	NP	NS	NS	NS	279	NP	386	NS-D	189	NS	NA	NA	NA	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	<2	NP	NS	NS	NS	<2	NP	<2	NS-D	<2	NS	<2	<2	< 2	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	<2	NP	NP	NP	NP	<2	NP	<2	NP	<2	NP	<2	<2	<2	<2	<2	<2	NP
Hardness-Total, as $CaCO_3$ (mg/L)	3/23-24/1998	430	430	275	342	440	670	740	510	1,450	NP	1,000	1,600	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	250	440	310	340	640	780	680	370	720	NS	1,150	460	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/2000	600	450	500	1,200	NP	660	760	430	760	NP	880	700	260	540	NP	NP	NP	NP	NP	NP	3,000
	3/8-9/2001	310	470	610	440	NP	590	590	1,000	1,300	NP	1,900	1,300	NS	670	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	420	420	450	420	NP	ND[6]	ND	ND	1,200	NP	1,400	NS-D	330	750	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	690	NP	NS	NS	NS	NA	NP	1,500	NS-D	360	NS	NA	NA	NP	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	790	NP	NA	NS-D	NA	NS	600	660	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	220	NP	NS	NS	NS	1,300	NP	2,200	NS-D	380	NS	800	760	640	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	270	NP	NP	NP	NP	1300	NP	1300	NP	680	NP	1000	640	620	540	650	620	NP
Hydroxide (mg/L)	8/1/1995	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
Methane (mg/L)	3/23-24/1998	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012	0.039	< 0.0012	0.91	NS	0.14	< 0.0012	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	NS	NS	NS	<0.0012	NS	NS	NS	NS	0.035	NS	0.094	< 0.0012	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NA	NA	0.0015	0.0017	NP	NP	NP	NP	NP	NP	< 0.0012
	3/9-10/2000	< 0.0012	< 0.0012	< 0.0012	< 0.0012	NP	< 0.0012	0.13	< 0.0012	0.0056	NP	0.037	< 0.0012	< 0.0012	< 0.0012	NP	NP	NP	NP	NP	NP	< 0.0012
	3/8-9/2001	< 0.0012	< 0.0012	< 0.0012	< 0.0012	NP	< 0.0012	< 0.0012	< 0.0012	< 0.0012	NP	0.0028	< 0.0012	NS	< 0.0012	NA	NS	NP	NP	NP	NP	NP	NS-D
	3/11-12/2002	0.007	< 0.0012	0.0024	< 0.0012	NP	ND	ND	ND	ND	NP	0.0044	NS-D	< 0.0012	< 0.0012	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	< 0.0012	NP	NS	NS	NS	0.0031	NP	0.0044	NS-D	0.0038	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	< 0.0012	NS	NS	NS	< 0.0012	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.0012	NP	NS	NS	NS	<0.0012	NP	< 0.0012	NS-D	< 0.0012	NS	< 0.0012	< 0.0012	NS	NP	NP	NP	NS-D
	12/18/2004	NS	NS	NS	< 0.0012	NP	NS	NS	NS	<0.0012	NP	< 0.0012	NS-D	<0.0012	NS	NA	NA	NA	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.0012	NP	NS	NS	NS	<0.0012	NP	< 0.0012	NS-D	< 0.0012	NS	< 0.0012	< 0.0012	< 0.0012	NP	NP	NP	NS-D

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Anions (mg/L)																						
Chloride		See Table 5																				
Fluoride	3/23-24/1998	0.9	1.2	1.2	0.6	1.1	0.8	0.9	1.3	6.1	NS	2.9	4.2	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	1.54	1.46	1.5	1.38	1.79	1.56	1.44	1.84	4.93	NS	3.08	3.13	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	1.83	2.22	NP	NP	NP	NP	NP	NP	3.45
	3/9-10/2000	1.7	1.1	1.1	1.1	NP	0.75	0.69	1.5	1	NP	<0.1	1.7	1.3	1.7	NP	NP	NP	NP	NP	NP	3.8
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	3.5	1.2	NP	NP	NP	NP	NS
	3/8-9/2001	1.3	0.77	0.63	0.86	NP	0.69	0.66	0.92	1.2	NP	1.1	1.9	NS	1.6	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	1.2	1.4	1.2	1.4	NP	1.3	1.1	1.5	1.8	NP	2.1	NS-D	1.4	2.3	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	1.1	NP	NS	NS	NS	1.6	NP	4.1	NS-D	1.2	NS	2.3	0.91	NP	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	1.1	NP	NS	NS	NS	2.2	NP	3.5	NS-D	1.1	NS	2.5	1.1	5.3	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	1	NP	NP	NP	NP	<2.5	NP	6.3	NP	1.1	NP	2.4	1.1	8.2	3.7	1.7	1.2	NP
Nitrate (Nitrogen as N)	8/1/1995	4.7	5.6	15	28	1.3	9.2	11	38	< 0.1	5.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	11	7.6	7.6	12	< 0.5	10	8.6	24	< 5	11	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	1.78	3.07	2.59	3.87	0.69	3.92	1.84	4.27	0.07	NS	< 0.05	< 0.05	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.7	2.1	2.6	NA	<0.1	3.3	0.7	3.7	NA	NP	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	2.1	2.4	NP	NP	NP	NP	NP	NP	3.96
	3/9-10/2000	0.33	2.9	3.7	5.3	NP	3.6	0.35	7.2	0.1	NP	0.11	<0.1	0.14	<0.1	NP	NP	NP	NP	NP	NP	3.6
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	4.5	4.88	NP	NP	NP	NP	NS
	3/8-9/2001	4.31	2.56	4.75	3.24	NP	2.82	0.664	7.9	<0.1	NP	<0.1	<0.1	NS	<0.1	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	5.7	3.86	8.55	2.98	NP	3.23	0.607	6.34	<0.1	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	2.75	NP	NS	NS	NS	<0.1	NP	<0.1	NS-D	0.705	NS	5.82	3.67	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	<0.1	NS	NS	NS	4.4	NP	NP	NP	NS-D
	8/21/2003	NS	NS	NS	2.4	NP	NS	NS	NS	NA	NP	NA	NS-D	< 0.1	NS	NA	NA	NS	NP	NP	NP	NS-D
	12/18/2004	NS	NS	NS	2.5	NP	NS	NS	NS	0.28	NP	<0.1	NS-D	< 0.1	NS	NA	NA	NA	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	2.6	NP	NS	NS	NS	0.25	NP	1.9	NS-D	< 0.1	NS	4.9	3	5.8	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	4.2	NP	NP	NP	NP	<0.5	NP	NA	NP	NA	NP	NA	2.9	3.2	3.8	3.4	9.4	NP
Sulfate	8/1/1995	150	150	210	230	6.7	180	160	150	130	230	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	130	150	150	140	85	80	160	180	120	130	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	130	180	160	190	230	310	250	230	320	NS	190	240	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	196	162	178	195	72	246	240	146	223	NP	227	193	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10/1999-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	249	334	NP	NP	NP	NP	NP	NP	192
	3/9-10/2000	530	190	250	260	NP	280	260	170	160	NP	270	210	200	170	NP	NP	NP	NP	NP	NP	200
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	180	130	NP	NP	NP	NP	NS
	3/8-9/2001	210	170	180	180	NP	260	240	150	270	NP	330	300	NS	380	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	190	150	160	120	NP	240	250	130	230	NP	350	NS-D	200	380	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	110	NP	NS	NS	NS	270	NP	290	NS-D	170	NS	150	150	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	160	NS	NS	NS	200	NP	NP	NP	NS-D
	8/21/2003	NS	NS	NS	100	NP	NS	NS	NS	NA	NP	NA	NS-D	160	NS	NA	NA	NS	NP	NP	NP	NS-D
	12/18/2004	NS	NS	NS	110	NP	NS	NS	NS	350	NP	320	NS-D	160	NS	NA	NA	NA	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	110	NP	NS	NS	NS	350	NP	380	NS-D	160	NS	150	140	180	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	110	NP	NP	NP	NP	360	NP	370	NP	160	NP	130	200	110	150	220	200	NP
Cations (mg/L)																						
Calcium	8/1/1995	120	120	220	160	320	300	300	180	610	490	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	120	130	89	110	62	270	230	190	390	440	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	129	122	79	109	94	208	215	142	417	NS	259	388	NP	NP	NP	NP	NP	NP	NP	NP	NS

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Calcium (cont.)	3/9-10/1999	80.2	129	90.8	116	141	233	197	122	214	NP	308	148	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	113	389	NP	NP	NP	NP	NP	NP	141
	3/9-10/2000	155	119	147	387	NP	167	215	110	177	NP	229	180	78.1	122	NP	NP	NP	NP	NP	NP	882
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	179	150	NP	NP	NP	NP	NS
	3/8-9/2001	86.8	148	214	157	NP	172	183	381	331	NP	466	338	NS	198	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	112	121	130	143	NP	ND	ND	ND	303	NP	330	NS-D	120	225	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	288	NP	NS	NS	NS	NA	NP	470	NS-D	135	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	219	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	108	NP	NA	NS-D	NA	NS	62.2	107	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	80.1	NP	NS	NS	NS	308	NP	763	NS-D	142	NS	205	255	210	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	84.3	NP	NP	NP	NP	310	NP	394	NP	201	NP	276	218	192	169	207	206	NP
Magnesium	8/1/1995	34	36	58	27	72	42	49	43	130	130	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	120	32	21	18	28	40	48	44	84	120	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	36	30	18	20	42	47	52	36	130	NS	96	108	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	19.7	31.5	20.4	21.6	62.2	54.4	47.7	28.5	43	NP	101	32.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	16.6	83.9	NP	NP	NP	NP	NP	NP	44.3
	3/9-10/2000	41.3	27.5	26.3	29.2	NP	44.3	39.1	26.2	61	NP	47.7	30.6	7.25	38.8	NP	NP	NP	NP	NP	NP	74.5
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	87.5	28.3	NP	NP	NP	NP	NS
	3/8-9/2001	20.7	24.9	25.9	16.6	NP	41.1	37.4	28.2	95.1	NP	93.4	95.3	NS	52.3	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	27.3	20.7	20.7	13	NP	ND	ND	ND	ND	NP	103	NS-D	6.06	44.7	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	19.6	NP	NS	NS	NS	NA	NP	160	NS-D	6.74	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	45.4	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	41.1	NP	NA	NS-D	NA	NS	35.5	17.3	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	12.4	NP	NS	NS	NS	128	NP	134	NS-D	7.63	NS	66.4	31.5	39.2	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	12.9	NP	NP	NP	NP	101	NP	78.7	NP	10.8	NP	78.2	35.8	34.9	41.3	43.7	37.2	NP
Potassium	8/1/1995	2.4	2.6	3.5	4.2	3	3.4	5	4.1	35	46	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	2.4	3	2.2	3.1	2.4	3.7	3.9	2.6	41	53	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	20	NS	30	70	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	3	4	3	4	4	9	4	3	15	NP	21	101	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	66	6	NP	NP	NP	NP	NP	NP	3
	3/9-10/2000	4.01	4.11	3.95	5.61	NP	6.98	4.53	4.08	18.3	NP	18.6	104	70.6	2.84	NP	NP	NP	NP	NP	NP	10.7
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	3.59	4.59	NP	NP	NP	NP	NS
	3/8-9/2001	<2	2.56	2.76	2.25	NP	5.15	2.94	3.84	19.5	NP	33.5	47.2	NS	2.26	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	2.82	4.05	2.79	3.55	NP	ND	ND	ND	ND	NP	41.5	NS-D	72	2.82	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	3.72	NP	NS	NS	NS	NA	NP	39.4	NS-D	55.6	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	4.78	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	4.61	NP	NA	NS-D	NA	NS	< 2	3.98	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	4.15	NP	NS	NS	NS	10.8	NP	28.6	NS-D	50.4	NS	3.07	3.55	4.02	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	2.97	NP	NP	NP	NP	9.68	NP	31.9	NP	42.9	NP	4.36	3.42	4.06	17.8	3.65	5.64	NP
Sodium	8/1/1995	100	93	140	110	130	95	94	98	660	2000	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	100	110	88	120	120	96	100	83	960	2600	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	113	126	109	130	100	92	101	118	1090	NS	312	381	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	126	135	124	155	141	110	115	122	856	NP	225	180	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	121	165	NP	NP	NP	NP	NP	NP	103
	3/9-10/2000	123	112	115	123	NP	95.1	95.4	99.1	181	NP	608	129	103	114	NP	NP	NP	NP	NP	NP	97.3
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	144	108	NP	NP	NP	NP	NS
	3/8-9/2001	141	124	135	147	NP	121	118	119	410	NP	801	185	NS	142	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	147	133	128	145	NP	ND	ND	ND	ND	NP	660	NS-D	79.4	127	NS	NS	NP	NP	NP	NP	NS-D

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																			
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Sodium (cont.)	3/6/2003	NS	NS	NS	144	NP	NS	NS	NS	NA	NP	1550	NS-D	68.8	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	436	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	170	NP	NA	NS-D	NA	NS	53.3	63.8	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	115	NP	NS	NS	NS	408	NP	1370	NS-D	54	NS	80.7	88.1	382	NP	NP	NP	NS-D
	3/24/2005	NP	NP	NP	126	NP	NP	NP	NP	383	NP	1590	NP	56	NP	92.2	105	612	99.2	99.7	158	NP
Metals (mg/L)																						
Arsenic	8/1/1995	0.0076	0.0043	< 0.002	0.0059	0.028	0.0033	0.0034	0.0055	0.015	0.0086	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	0.0078	0.0066	0.0059	0.0067	0.018	0.0036	0.0033	0.0044	0.028	0.011	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	0.007	0.007	0.008	0.007	0.013	< 0.005	< 0.005	0.005	0.035	NS	0.019	0.013	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.013	0.009	0.012	0.005	0.02	0.006	0.005	0.007	0.026	NP	0.036	0.066	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.022	0.008	NP	NP	NP	NP	NP	NP	<0.005
	3/9-10/2000	0.0178	0.00817	0.0178	0.0173	NP	0.00849	0.00953	0.00757	0.0474	NP	0.108	0.0948	0.0143	< 0.005	NP	NP	NP	NP	NP	NP	0.034
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	0.00511	< 0.005	NP	NP	NP	NP	NS
	3/8-9/2001	0.0205	0.0094	0.0386	0.00974	NP	0.00694	NA	0.013	0.133	NP	0.08	0.0445	NS	0.00673	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	0.00939	0.00889	0.0101	0.0104	NP	ND	ND	ND	0.286	NP	0.086	NS-D	0.0471	0.012	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	0.0125	NP	NS	NS	NS	NA	NP	0.0387	NS-D	0.0491	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	0.00674	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	0.0598	NP	NA	NS-D	NA	NS	< 0.005	< 0.005	NS	NP	NP	NP	NS-D
	12/18/2004	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	NA	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	0.00836	NP	NS	NS	NS	0.052	NP	0.0559	NS-D	0.045	NS	0.00911	0.00841	0.00869	NP	NP	NP	NS-D
Barium	8/1/1995	0.069	0.38	0.34	0.049	1.1	0.069	0.075	0.089	0.37	0.2	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	0.064	0.24	0.069	0.038	0.29	0.061	0.066	0.089	0.26	0.2	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	0.11	0.182	0.044	0.044	0.208	0.059	0.074	0.066	0.287	NS	0.163	0.157	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.058	0.059	0.045	0.054	0.555	0.076	0.052	0.043	0.17	NP	0.174	0.144	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.155	0.333	NP	NP	NP	NP	NP	NP	0.062
	3/9-10/2000	0.0917	0.108	0.0694	0.184	NP	0.046	0.236	0.0419	0.281	NP	0.872	0.245	0.0962	0.113	NP	NP	NP	NP	NP	NP	1.49
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	0.0833	0.073	NP	NP	NP	NP	NS
	3/8-9/2001	0.044	0.119	0.0978	0.0055	NP	0.043	0.0512	0.111	0.23	NP	0.401	0.603	NS	0.171	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	0.06	0.0797	0.0805	0.0524	NP	ND	ND	ND	0.294	NP	0.348	NS-D	0.0865	0.109	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	0.15	NP	NS	NS	NS	NA	NP	0.297	NS-D	0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	0.0728	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	0.04	NP	NA	NS-D	NA	NS	0.0262	0.0326	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	0.0464	NP	NS	NS	NS	0.0922	NP	0.221	NS-D	0.104	NS	0.0699	0.0772	0.0596	NP	NP	NP	NS-D
Cadmium	8/1/1995	< 0.001	< 0.001	0.0052	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	NS	< 0.005	< 0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NP	<0.005	<0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.005	<0.005	NP	NP	NP	NP	NP	NP	<0.005
	3/9-10/2000	<0.005	< 0.005	0.0178	<0.005	NP	<0.005	<0.005	<0.005	<0.005	NP	< 0.005	<0.005	<0.005	<0.005	NP	NP	NP	NP	NP	NP	<0.005
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.005	<0.005	NP	NP	NP	NP	NS
	3/8-9/2001	<0.005	<0.005	0.0121	<0.005	NP	<0.005	<0.005	<0.005	<0.005	NP	<0.005	<0.005	NS	<0.005	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	<0.005	<0.005	<0.005	<0.005	NP	ND	ND	ND	<0.005	NP	<0.005	NS-D	<0.005	<0.005	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	<0.005	NP	NS	NS	NS	NA	NP	<0.005	NS-D	<0.005	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.005	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	<0.005	NP	NA	NS-D	NA	NS	62.2	107	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	<0.005	NP	NS	NS	NS	<0.005	NP	<0.005	NS-D	<0.005	NS	<0.005	<0.005	<0.005	NP	NP	NP	NS-D
Chromium	8/1/1995	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 0.01	< 0.01	< 0.01	< 0.01	0.049	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NS	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NP	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	NP	NP	NS

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Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Chromium	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.02	0.02	NP	NP	NP	NP	NP	NP	< 0.01
(cont.)	3/9-10/2000	< 0.01	< 0.01	< 0.01	0.0248	NP	< 0.01	< 0.01	< 0.01	0.031	NP	0.0342	0.0124	< 0.01	< 0.01	NP	NP	NP	NP	NP	NP	0.105
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	< 0.01	< 0.01	NP	NP	NP	NP	NS
	3/8-9/2001	< 0.01	< 0.01	0.0104	0.0101	NP	< 0.01	< 0.01	0.013	0.0109	NP	0.0392	0.0469	NS	0.0104	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.01	< 0.01	< 0.01	< 0.01	NP	ND	ND	ND	0.0246	NP	0.023	NS-D	< 0.01	0.0114	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	0.0174	NP	NS	NS	NS	NA	NP	0.0168	NS-D	0.01	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 0.01	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	< 0.01	NP	NA	NS-D	NA	NS	< 0.01	< 0.01	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.01	NP	NS	NS	NS	< 0.01	NP	0.0441	NS-D	< 0.01	NS	< 0.01	< 0.01	< 0.01	NP	NP	NP	NS-D
Lead	8/1/1995	< 0.002	< 0.002	0.0044	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.0025	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	NS	< 0.005	< 0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.005	<0.005	<0.005	< 0.005	0.013	< 0.005	< 0.005	< 0.005	< 0.005	NP	0.009	<0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.005	<0.005	NP	NP	NP	NP	NP	NP	< 0.005
	3/9-10/2000	<0.005	<0.005	<0.005	0.00565	NP	< 0.005	< 0.005	< 0.005	0.00661	NP	0.00595	< 0.005	<0.005	<0.005	NP	NP	NP	NP	NP	NP	0.0355
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.005	<0.005	NP	NP	NP	NP	NS
	3/8-9/2001	<0.005	<0.005	0.00602	<0.005	NP	<0.005	<0.005	0.00597	0.0222	NP	0.0119	0.00627	NS	<0.005	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	<0.005	<0.005	<0.005	<0.005	NP	ND	ND	ND	0.0234	NP	<0.005	NS-D	<0.005	<0.005	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	<0.005	NP	NS	NS	NS	NA	NP	<0.005	NS-D	<0.005	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.005	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	< 0.005	NP	NA	NS-D	NA	NS	< 0.005	< 0.005	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	<0.005	NP	NS	NS	NS	< 0.005	NP	0.00901	NS-D	<0.005	NS	< 0.005	<0.005	<0.005	NP	NP	NP	NS-D
Mercury	8/1/1995	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0005	< 0.0002	< 0.0002	< 0.0002	< 0.0002	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0003	< 0.0002	< 0.0002	NS	< 0.0002	< 0.0002	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.0002	<0.0002	NP	NP	NP	NP	NP	NP	<0.0002
	3/9-10/2000	NS	NS	NS	NS	NP	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	<0.0002	<0.0002	NP	NP	NP	NP	NP	NP	<0.0002
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.0002	<0.0002	NP	NP	NP	NP	NS
	3/8-9/2001	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	<0.0002	<0.0002	NP	<0.0002	<0.0002	NS	<0.0002	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	<0.0002	<0.0002	<0.0002	0.000243	NP	ND	ND	ND	<0.0002	NP	<0.0002	NS-D	<0.0002	<0.0002	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	<0.0002	NP	NS	NS	NS	NA	NP	<0.0002	NS-D	<0.0002	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.0002	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NA	NP	NS	NS	NS	<0.0002	NP	NA	NS-D	NA	NS	<0.0002	<0.0002	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	<0.0002	NP	NS	NS	NS	<0.0002	NP	<0.0002	NS-D	<0.0002	NS	<0.0002	<0.0002	<0.0002	NP	NP	NP	NS-D
Selenium	8/1/1995	<0.004	<0.004	<0.004	<0.004	<0.004	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	<0.004	<0.004	<0.004	<0.004	<0.004	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	0.005	0.006	<0.005	0.006	<0.005	0.005	<0.005	<0.005	<0.005	NP	<0.005	<0.005	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/2000	<0.005	<0.005	<0.005	<0.005	NP	0.00926	<0.005	<0.005	<0.005	NP	<0.005	<0.005	<0.005	<0.005	NP	NP	NP	NP	NP	NP	<0.005
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	<0.005	0.00523	NP	NP	NP	NP	NP	NS
	3/8-9/2001	<0.005	0.00702	0.00508	0.00587	NP	0.00617	<0.005	0.0054	<0.005	NP	<0.005	<0.005	NS	<0.005	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	0.00549	0.00625	<0.005	0.00558	NP	ND	ND	ND	<0.005	NP	<0.005	NS-D	<0.005	<0.005	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	<0.005	NP	NS	NS	NS	NA	NP	<0.005	NS-D	<0.005	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	<0.005	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	NS	NP	NS	NS	NS	< 0.005	NP	NS	NS-D	NA	NS	< 0.005	< 0.005	< 0.005	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	<0.005	NP	NS	NS	NS	< 0.005	NP	<0.005	NS-D	<0.005	NS	< 0.005	< 0.005	< 0.005	NP	NP	NP	NS-D

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
PAHs (µg/L)																						
Acenaphthene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	NS	<0.3	<0.3	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	<2.0	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	0.28	< 0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	< 0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Acenaphthylene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	< 0.1	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	0.91	< 0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	0.4	NP	<0.1	<0.1	<0.1	1.8	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	0.71	NP	0.35	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	1.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Anthracene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	< 0.1	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	0.12	< 0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	< 0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	<0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Benzo(a)-anthracene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	0.2	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS

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Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																			
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Benzo(a)-anthracene (cont.)	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	0.18	< 0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	< 0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Benzo(k)-fluoranthene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	0.2	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	< 0.1	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	< 0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Benzo(a)pyrene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	0.2	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	< 0.1	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	< 0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Fluorene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	NS	<0.3	<0.3	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	<2.0	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	25	< 0.1	0.36	<0.1	NP	<0.1	<0.1	1.5	<0.1	NP	<0.1	<0.1	<0.1	1.6	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D

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BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Naphthalene	8/1/1995	< 5	210	1700	< 5	470	< 5	< 5	15	92	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	230	110	440	< 5	< 30	< 5	< 5	< 84	< 76	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	130	23	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	4	8	NS	0.8	11	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	10	8	170	0.1	160	<0.1	<0.1	<0.1	6	NP	<0.1	19	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	0.6	34	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	2.4	<0.1	0.44	<0.1	NP	<0.1	<0.1	0.42	1.5	NP	0.12	0.26	<0.1	56	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	0.15	NP	0.21	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	0.14	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	0.14	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Phenanthrene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	2	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	0.65	<0.1	< 0.1	<0.1	NP	<0.1	<0.1	<0.1	<0.1	NP	<0.1	<0.1	<0.1	0.22	NP	NP	NP	NP	NP	NP	<0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	<0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
Pyrene	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	8/23/1996	< 10	< 10	< 30	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/23-24/1998	< 10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	<0.1	<0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	3/9-10/1999	< 0.1	< 0.1	0.4	< 0.1	<2.0	<0.1	<0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 0.1	< 1.0	NP	NP	NP	NP	NP	NP	<0.1
	3/9-10/2000	< 2	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	< 0.1	< 0.1	< 0.1	< 0.1	NP	NP	NP	NP	NP	NP	< 0.1
	1/14/2001	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	NS	NS	<0.1	<0.1	NP	NP	NP	NP	NS
	3/8-9/2001	<0.12	<0.13	<0.12	< 0.1	NP	<0.13	<0.12	<0.12	<0.15	NP	<0.13	<0.13	NS	<0.12	NA	NS	NP	NP	NP	NP	NS-D
	3/11-12/2002	< 0.1	<0.11	< 0.1	< 0.1	NP	ND	ND	ND	ND	NP	<0.1	NS-D	<0.1	<0.1	NS	NS	NP	NP	NP	NP	NS-D
	3/6/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	<0.1	NS-D	<0.1	NS	NA	NA	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS-D	NA	NS	NS	NS	< 5	NP	NP	NP	NS-D
	8/21-22/2003	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	NA	NS-D	NA	NS	< 0.1	< 0.1	NS	NP	NP	NP	NS-D
	3/30/2004	NS	NS	NS	< 0.1	NP	NS	NS	NS	< 0.1	NP	<0.1	NS-D	<0.1	NS	<0.1	<0.1	<0.1	NP	NP	NP	NS-D
VOCs (µg/L)																						
Acetone	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<100	<100	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/99	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	130	<100	NP	NP	NP	NP	NP	NP	<100
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<100	<100	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 100	NP	NP	NP	NS-D
sec-Butylbenzene	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	5	NP	NP	NP	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
Isopropylbenzene	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	31	NP	NP	NP	NP	NP	NP	< 5

Table 6
Summary of Groundwater Quality Parameters and Detected PAHs, Metals, VOCs and SVOCs
Hobbs, New Mexico Facility
BJ Services Company, U.S.A.

Analyte (units)	Sample Date	Monitor Wells[1]																				
		MW-1	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-11A	MW-12	MW-12D	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	OW-4
Isopropylbenzene	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NP	NP	NP	NS-D
(cont.)	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
Naphthalene	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	190	NP	NP	NP	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
n-Propylbenzene	3/23-24/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	68	NP	NP	NP	NP	NP	NP	< 5
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
1,2,4-Trimethyl-	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	93	NP	NP	NP	NP	NP	NP	< 5
benzene	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	< 5	NP	NP	NP	NS-D
1,3,5-Trimethyl-	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	93	NP	NP	NP	NP	NP	NP	< 5
benzene	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NP	NP	NP	NS-D
MTBE	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 10	25	NP	NP	NP	NP	NP	NP	< 10
	3/9-10/2000	NA	NA	NA	NA	NP	NA	NA	NA	NA	NP	NA	NA	NA	NA	<5.0	<5.0	NP	NP	NP	NP	NS-D
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
SVOCs (µg/L)																						
2,4-Dimethyl-	8/1/1995	< 50	97	< 500	< 5	42	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
phenol	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	56	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
2-Methyl-	8/1/1995	280	62	1500	< 5	150	< 5	< 5	36	23	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
naphthalene	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	29	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
2-Methylphenol	8/1/1995	< 50	56	< 500	< 5	< 30	< 5	< 5	< 5	< 5	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	< 5	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
4-Methylphenol	8/1/1995	< 80	< 20	< 800	< 8	150	< 8	< 8	< 8	< 8	< 8	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	< 5	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
Bis(2-ethylhexyl)-	8/1/1995	750	< 20	10000	40	< 40	< 7	< 7	< 7	< 7	< 7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
phthalate	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	< 5	< 5	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D
Phenol	8/1/1995	< 50	< 10	< 500	< 5	< 30	< 5	< 5	< 5	8.2	< 5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NS
	6/10-7/2/1999	NS	NS	NS	NS	NP	NS	NS	NS	NS	NP	NS	NS	<5	6	NP	NP	NP	NP	NP	NP	<5
	6/20/2003	NS	NS	NS	NA	NP	NS	NS	NS	NA	NP	NA	NS-D	NA	NS	NA	NA	< 5	NP	NP	NP	NS-D

(1) - MW-2 not operative after May 3, 1995; MW-11 not operative after September 1997; MW-2, MW-6, and MW-11 P&A'd 7/1/99.

(2) - NP = Well not present at time of sampling event.

(3) - NS = Well not sampled.

(4) - NA = Not Analyzed.

(5) - NS-D = Well not sampled (dry well).

(6) - ND = No data - sample aliquot not collected due to insufficient well yield.

APPENDICES

APPENDIX A

Boring Logs and Monitor Well Construction Diagrams: Monitor Wells MW-17, MW-18, MW-19 and Soil Boring SB-16

Monitoring Well: **MW-17**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **1** of **3**

Project Location: **Hobbs, New Mexico**		Logged By: **B. Camacho**	Approved: **R. Rexroad**
Drilling Contractor: **Harrison and Cooper**		Date Started: **3/10/05**	Date Finished: **3/10/05**
Drilling Equipment: **Ingersol-Rand TH-60**	Driller: **Leonard Hennen**	Total Boring Depth: (feet) **78.0**	Depth to Static Water: (feet)
Drilling Method: **Air Rotary**	Borehole Diameter: **5 1/8"**	TOC Elevation:	Ground Elevation:
Sampling Method: **cuttings**		Diameter and Type of Well Casing: **2" Schedule 40 PVC**	
Comments: **Logged by cuttings**		Slot Size: **0.01"**	Filter Material: **20/40 Silica Sand**
		Development Method: **2" PVC Bailer**	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
0				Concrete Pad					Locking Well Cap (Below Grade Completion)
2				Fill, Sand with gravel					2.0
4		CL		SANDY CLAY (CL), Dark brown sandy clay, slightly moist.					
6				SILTSTONE, Light brown siltstone with caliche, fine grained, moderatley moist.					
8								9-10'	
10									
12		SP		SAND (SP), Whitish, fine grained, contains 1/2 inch rounded siltstone gravel, low moisture content.					
14									Hydrated Bentonite Seal
16									
18									
20				Light pinkish brown caliche cemented with very fine grained sand, slightly moist.				19-20'	
22									
24									
26									
28				SAA, light brown, low moisture content.				29-30'	
30				SAA, light pinkish brown, slightly moist.					
32									

Monitoring Well: **MW-17**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **2** of **3**

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID
34								
36		SP		SAND (SP), light brown sand, medium grained, contains 0.5 to 1.0 inch diameter sandstone nodules, slightly moist.				
38								39-40'
40								
42				SANDSTONE, Medium brown sandstone, >1" diameter nodules of very fine lithified sandstone, slightly moist.				
44								
46								
48								
50								49-50'
52				SAA, .5" to 1" nodules of rounded sandstone.				
54								
56		SW		SAND (SW), brown sand, Fine to very fine grained, moist.				
58								
60	▼							59-60'
62				SAA, wet				
64								
66				SAA, medium to fine grained.				
68								
70				Light pinkish brown fine grained lithified sandstone, dry. (Aquitard)				
72								
74								

Monitoring Well Remarks

Monitoring Well: **MW-17**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet 3 of 3

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
76									75.3 Bottom cap
78				Total Depth = 78 feet					78.0

Monitoring Well: **MW-18**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **1** of **3**

Project Location: **Hobbs, New Mexico**		Logged By: **B. Camacho**	Approved: **R. Rexroad**
Drilling Contractor: **Harrison and Cooper**		Date Started: **3/9/05**	Date Finished: **3/9/05**
Drilling Equipment: **Ingersol-Rand TH-60**	Driller: **Leonard Hennen**	Total Boring Depth: (feet) **78.0**	Depth to Static Water: (feet)
Drilling Method: **Air Rotary**	Borehole Diameter: **5 1/8"**	TOC Elevation:	Ground Elevation:
Sampling Method: **cuttings**		Diameter and Type of Well Casing: **2" Schedule 40 PVC**	
Comments: **Logged by cuttings**		Slot Size: **0.01"**	Filter Material: **20/40 Silica Sand**
		Development Method: **2" PVC Bailer**	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
0				FILL, Sand with Gravel.					Locking Well Cap (Below Grade Completion)
2		CL		SANDY CLAY (CL), Grayish to white sandy clay with caliche, slightly moist.					2.0
4									
6				SILTSTONE, Light brown siltstone with caliche, fine to very fine grained, moderatley moist.					
8								9-10'	
10									
12				SANDSTONE, Medium brown sandstone, fine grained, slightly moist.					
14									
16		SP		SAND (SP), Whitish, fine grained, contains 1/2 inch rounded sandstone nodules, low moisture content.					Hydrated Bentonite Seal
18									
20								19-20'	
22				SANDSTONE, Light pinkish brown sandstone with cemented caliche, fine grained, dry.					
24									
26									
28									
30								29-30'	
32									

Monitoring Well: **MW-18**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **2** of **3**

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
34									
36		SP		SAND (SP), light brown sand, medium to fine grained, contains 0.5 to 1.0 inch diameter sandstone nodules, slightly moist.					Hydrated Bentonite Seal
38									
40								39-40'	
42				SAA, Medium brown.					
44									
46									
48									
50				SAA, < .5" diameter sandstone nodules, moist.				49-50'	
52									
54									
56				SAA, Very fine sand, moist.					
58									58.0
60								59-60'	20/40 Silica Sand Filter Pack
62	▼	SW		SAND (SW), Light brown sand, fine to very fine grained, well sorted, wet.					0.01-inch slotted well screen
64									
66									
68									
70									
72				SANDSTONE, Light brown sandstone, medium to fine grained, wet.					
74									75.0

Monitoring Well: **MW-18**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **3** of **3**

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
76									75.3 Bottom cap
78				Total Depth = 78 feet					78.0

Monitoring Well: **MW-19**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **1** of **3**

Project Location: **Hobbs, New Mexico**		Logged By: **B. Camacho**	Approved: **R. Rexroad**
Drilling Contractor: **Harrison and Cooper**		Date Started: **3/9/05**	Date Finished: **3/9/05**
Drilling Equipment: **Ingersol-Rand TH-60**	Driller: **Leonard Hennen**	Total Boring Depth: (feet) **78.0**	Depth to Static Water: (feet)
Drilling Method: **Air Rotary**	Borehole Diameter: **5 1/8"**	TOC Elevation:	Ground Elevation:
Sampling Method: **cuttings**		Diameter and Type of Well Casing: **2" Schedule 40 PVC**	
Comments: **Logged by cuttings**		Slot Size: **0.01"**	Filter Material: **20/40 Silica Sand**
		Development Method: **2" PVC Bailer**	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
2		CL ML		Dark brown silty clay with sand and gravel, slightly moist.					Locking Well Cap (Above Grade Completion)
4				Medium brown fine to very fine sandstone, moderatley moist.					2.0
8				Light pinkish brown caliche, little fine sand, moist.				9-10'	
14				SAA, dry.					Hydrated Bentonite Seal
18				SAA, slightly moist.				19-20'	
22				Light pinkish brown caliche-cemented sandstone, with 0.5" nodules of lithified sandstone, dry					
28		SP		Light brown medium to fine sand, slightly moist.				29-30'	
32									

Monitoring Well: **MW-19**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **2** of **3**

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
34									
36				Medium brown sandstone, 0.5" to 1.0" nodules of very fine lithified sandstone, slightly moist.					
38								39-40'	
40									
42									
44									
46									
48				SAA, 0.5" nodules of lithified sandstone, moist.					
50								49-50'	
52		SW		Medium brown medium to fine grained sand, moist.					
54									
56									56.0 20/40 Silica Sand Filter Pack
58									
60	▼			SAA, fine to very fine sand, wet.				59-60'	
62									0.01-inch slotted well screen
64									
66									
68									
70				Dark brown sandstone, medium to fine grained, wet.					
72									73.0
74									73.3 Bottom cap

Hydrated Bentonite Seal

Monitoring Well: **MW-19**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet 3 of 3

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Monitoring Well Remarks
76									
78				Total Depth = 78 feet					78.0

Soil Boring: **SB-16**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **1** of **2**

Project Location: **Hobbs, New Mexico**		Logged By: **B. Camacho**	Approved: **R. Rexroad**
Drilling Contractor: **Harrison and Cooper**		Date Started: **3/9/05**	Date Finished: **3/9/05**
Drilling Equipment: **Ingersol-Rand TH-60**	Driller: **Leonard Hennen**	Total Boring Depth: (feet) **62.0**	Depth to Static Water: (feet)
Drilling Method: **Air Rotary**	Borehole Diameter: **5 1/8"**	TOC Elevation:	Ground Elevation:
Sampling Method: **cuttings**		Diameter and Type of Well Casing:	
Comments: **Logged by cuttings**		Slot Size:	Filter Material:
		Development Method:	

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Soil Boring Remarks
2		CL ML		Dark brown silty clay with sand and gravel, slightly moist.					SB-16 was plugged with a hydrated bentonite seal
4				Medium brown fine to very fine sandstone, slightly moist.				4-5'	
6									
8								9-10'	
10				Light pinkish brown caliche, little fine sand, slightly moist.					
12									
14				SAA, some fine to very fine sand, moist.				14-15'	
16									
18									
20				SAA, slightly moist.				19-20'	
22									
24								24-25'	
26				Light pinkish brown caliche-cemented sandstone,dry.					
28									
30								29-30'	
32									

Soil Boring: **SB-16**

Project Name: **BJ Services Company, USA** Project Number: **126238.020** Sheet **2** of **2**

Depth (feet)	Depth to Water	USC Soil Type	Lithology	Description	PID Readings	Sampled Interval	Recovery (feet)	Sample ID	Soil Boring Remarks
34		SP		Light brown medium to fine sand, dry.				34-35'	
36									
38									
40				Medium brown sandstone, 0.5" to 1.0" nodules of very fine lithified sandstone, slightly moist.				39-40'	
42									
44								44-45'	
46				SAA, 0.5" nodules of lithified sandstone.					
48									
50								49-50'	
52									
54								54-55'	
56		SW		Medium brown medium to fine grained sand, moist					
58				SAA, fine to very fine sand.				59-60'	
60	▼								
62				Total Depth = 62 feet					

APPENDIX B

Laboratory Analytical Reports

APPENDIX B

Laboratory Analytical Reports

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

MAR 2 5 2005
BROWN AND CALDWELL HOUSTON

Brown & Caldwell

Certificate of Analysis Number:

05030473

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	3/21/2005
ph: (713) 759-0999	fax: (713) 308-3886		

This Report Contains A Total Of 45 Pages

Excluding This Page, Chain Of Custody

And

Attachments

3/21/2005

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

05030473

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	3/21/2005
ph: (713) 759-0999	fax: (713) 308-3886		

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

The result for fluoride on your sample "MW-10" was reported as ND (not detected) at a 5-fold dilution due to matrix interference.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Your sample "MW-5" was randomly selected for use in SPL's quality control program for metals by Method 6010B, and the percent recoveries and RPD's for calcium and magnesium could not be reported because the concentrations for these elements in the sample were greater than four times the amount of spike added to the sample.

Any other exceptions associated with this report will be footnoted in the analytical result pages or the quality control summary pages.

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/22/2005
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

05030473

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ Service/126238.020
Site: Hobbs, NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 3/21/2005

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-5	05030473-01	Water	3/8/2005 4:45:00 PM	3/11/2005 9:30:00 AM		☐
MW-10	05030473-02	Water	3/8/2005 5:30:00 PM	3/11/2005 9:30:00 AM		☐
MW-18-S-9-10'	05030473-03	Soil	3/9/2005 8:00:00 AM	3/11/2005 9:30:00 AM		☐
MW-18-S-19-20'	05030473-04	Soil	3/9/2005 8:10:00 AM	3/11/2005 9:30:00 AM		☐
MW-18-S-29-30'	05030473-05	Soil	3/9/2005 8:15:00 AM	3/11/2005 9:30:00 AM		☐
MW-18-S-39-40'	05030473-06	Soil	3/9/2005 8:20:00 AM	3/11/2005 9:30:00 AM		☐
MW-18-S-49-50'	05030473-07	Soil	3/9/2005 8:25:00 AM	3/11/2005 9:30:00 AM		☐
MW-18-S-59-60'	05030473-08	Soil	3/9/2005 8:40:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-4-5'	05030473-09	Soil	3/9/2005 10:00:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-9-10'	05030473-10	Soil	3/9/2005 10:05:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-14-15'	05030473-11	Soil	3/9/2005 10:10:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-19-20'	05030473-12	Soil	3/9/2005 10:15:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-24-25'	05030473-13	Soil	3/9/2005 10:20:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-29-30'	05030473-14	Soil	3/9/2005 10:25:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-34-35'	05030473-15	Soil	3/9/2005 10:30:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-39-40'	05030473-16	Soil	3/9/2005 10:35:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-44-45'	05030473-17	Soil	3/9/2005 10:40:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-49-50'	05030473-18	Soil	3/9/2005 10:45:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-54-55'	05030473-19	Soil	3/9/2005 10:50:00 AM	3/11/2005 9:30:00 AM		☐
SB-16-59-60'	05030473-20	Soil	3/9/2005 10:55:00 AM	3/11/2005 9:30:00 AM		☐
MW-19-S-9-10'	05030473-21	Soil	3/9/2005 11:35:00 AM	3/11/2005 9:30:00 AM		☐
MW-19-S-19-20'	05030473-22	Soil	3/9/2005 11:40:00 AM	3/11/2005 9:30:00 AM		☐
MW-19-S-29-30'	05030473-23	Soil	3/9/2005 11:45:00 AM	3/11/2005 9:30:00 AM		☐
MW-19-S-39-40'	05030473-24	Soil	3/9/2005 11:50:00 AM	3/11/2005 9:30:00 AM		☐

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/21/2005
Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

05030473

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ Service/126238.020
Site: Hobbs, NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 3/21/2005

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-19-S-49-50'	05030473-25	Soil	3/9/2005 11:55:00 AM	3/11/2005 9:30:00 AM		☐
MW-19-S-59-60'	05030473-26	Soil	3/9/2005 12:00:00 PM	3/11/2005 9:30:00 AM		☐
MW-5	05030473-27	Water	3/10/2005 7:40:00 AM	3/11/2005 9:30:00 AM		☐
MW-10	05030473-28	Water	3/10/2005 7:55:00 AM	3/11/2005 9:30:00 AM		☐

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/21/2005
Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-5 **Collected:** 03/08/2005 16:45 **SPL Sample ID:** 05030473-01

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	225	2		1		03/16/05 17:00	A_E	2685861
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/16/05 17:00	A_E	2685936
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	140	5		5		03/18/05 13:15	T_H	2688019
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	270	25		5		03/17/05 14:00	CV	2686869
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	1	0.5		1		03/11/05 14:44	CV	2679305
Sulfate	110	5		10		03/14/05 14:24	CV	2685268
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	84.3	0.1		1		03/15/05 11:38	MW	2684043
Magnesium	12.9	0.1		1		03/15/05 11:38	MW	2684043
Potassium	2.97	2		1		03/15/05 11:38	MW	2684043
Sodium	126	0.5		1		03/15/05 11:38	MW	2684043

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/14/2005 15:50	VMD	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
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Client Sample ID: MW-10 **Collected:** 03/08/2005 17:30 **SPL Sample ID:** 05030473-02

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	523	2		1		03/16/05 17:00	A_E	2685865
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/16/05 17:00	A_E	2685937
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	798	10		10		03/18/05 13:15	T_H	2688022
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	1300	250		50		03/17/05 14:00	CV	2686870
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	ND	2.5		5		03/11/05 21:26	CV	2679330
Sulfate	360	25		50		03/14/05 14:36	CV	2685269
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	310	0.1		1		03/15/05 12:02	MW	2684049
Magnesium	101	0.1		1		03/15/05 12:02	MW	2684049
Potassium	9.68	2		1		03/15/05 12:02	MW	2684049
Sodium	383	0.5		1		03/15/05 12:02	MW	2684049

Prep Method	*Prep Date*	*Prep Initials*	*Prep Factor*
SW3010A	03/14/2005 15:50	VMD	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-18-S-9-10' **Collected:** 03/09/2005 8:00 **SPL Sample ID:** 05030473-03

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	464	10	1		03/17/05 14:10	T_H	2686782

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-18-S-19-20' **Collected:** 03/09/2005 8:10 **SPL Sample ID:** 05030473-04

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	363	10	1		03/17/05 14:10	T_H	2686783

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-18-S-29-30' **Collected:** 03/09/2005 8:15 **SPL Sample ID:** 05030473-05

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	60.1	10	1		03/17/05 14:13	T_H	2686784

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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8880 INTERCHANGE DRIVE
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(713) 660-0901

Client Sample ID: MW-18-S-39-40' **Collected:** 03/09/2005 8:20 **SPL Sample ID:** 05030473-06

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	31.4	10	1		03/17/05 14:13	T_H	2686785

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-18-S-49-50' **Collected:** 03/09/2005 8:25 **SPL Sample ID:** 05030473-07

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	27.1	10	1		03/17/05 14:13	T_H	2686786

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-18-S-59-60' **Collected:** 03/09/2005 8:40 **SPL Sample ID:** 05030473-08

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	97.9	10	1		03/17/05 14:13	T_H	2686787

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: SB-16-4-5' **Collected:** 03/09/2005 10:00 **SPL Sample ID:** 05030473-09

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	31.8	10	1		03/17/05 14:13	T_H	2686788

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: SB-16-9-10' **Collected:** 03/09/2005 10:05 **SPL Sample ID:** 05030473-10

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	39.3	10	1		03/18/05 9:24	T_H	2687200

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: SB-16-14-15' **Collected:** 03/09/2005 10:10 **SPL Sample ID:** 05030473-11

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	105	10		1		03/18/05 9:24	T_H	2687204

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: SB-16-19-20' **Collected:** 03/09/2005 10:15 **SPL Sample ID:** 05030473-12

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	124	10	1		03/18/05 9:26	T_H	2687205

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: SB-16-24-25' **Collected:** 03/09/2005 10:20 **SPL Sample ID:** 05030473-13

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	141	10	1		03/18/05 9:26	T_H	2687206

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-29-30' **Collected:** 03/09/2005 10:25 **SPL Sample ID:** 05030473-14

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	93.5	10	1		03/18/05 9:26	T_H	2687207

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-34-35' **Collected:** 03/09/2005 10:30 **SPL Sample ID:** 05030473-15

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	45.3	10	1		03/18/05 9:26	T_H	2687208

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-39-40' **Collected:** 03/09/2005 10:35 **SPL Sample ID:** 05030473-16

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	70.1	10	1		03/18/05 9:26	T_H	2687209

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-44-45' **Collected:** 03/09/2005 10:40 **SPL Sample ID:** 05030473-17

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	31.1	10	1		03/18/05 10:19	T_H	2687435

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-49-50' **Collected:** 03/09/2005 10:45 **SPL Sample ID:** 05030473-18

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	32.2	10	1		03/18/05 10:19	T_H	2687438

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-54-55' **Collected:** 03/09/2005 10:50 **SPL Sample ID:** 05030473-19

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	29.6	10	1		03/18/05 10:19	T_H	2687439

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: SB-16-59-60' **Collected:** 03/09/2005 10:55 **SPL Sample ID:** 05030473-20

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	26.2	10	1		03/18/05 10:21	T_H	2687440

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-9-10' **Collected:** 03/09/2005 11:35 **SPL Sample ID:** 05030473-21

Site: **Hobbs, NM**

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	102	10	1		03/18/05 10:21	T_H	2687441

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-19-20' **Collected:** 03/09/2005 11:40 **SPL Sample ID:** 05030473-22

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	50.8	10	1		03/18/05 10:21	T_H	2687442

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-29-30' **Collected:** 03/09/2005 11:45 **SPL Sample ID:** 05030473-23

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	11.1	10	1		03/18/05 10:21	T_H	2687443

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-39-40' **Collected:** 03/09/2005 11:50 **SPL Sample ID:** 05030473-24

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	12.6	10		1		03/18/05 10:21	T_H	2687444

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-49-50' **Collected:** 03/09/2005 11:55 **SPL Sample ID:** 05030473-25

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	11	10	1		03/18/05 10:22	T_H	2687447

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19-S-59-60' **Collected:** 03/09/2005 12:00 **SPL Sample ID:** 05030473-26

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	13.2	10	1		03/18/05 10:22	T_H	2687448

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-5 **Collected:** 03/10/2005 7:40 **SPL Sample ID:** 05030473-27

Site: **Hobbs, NM**

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY		**MCL**	**E300.0**		**Units: mg/L**		
Nitrogen,Nitrate (As N)	4.2	0.5	1		03/11/05 15:09	CV	2679306

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-10 **Collected:** 03/10/2005 7:55 **SPL Sample ID:** 05030473-28

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY		**MCL**	**E300.0**		**Units: mg/L**		
Nitrogen,Nitrate (As N)	ND	0.5	1		03/11/05 15:21	CV	2679307

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 05030473
Lab Batch ID: 46277

Method Blank

RunID: TJA_050315A-2684041 Units: mg/L
Analysis Date: 03/15/2005 11:29 Analyst: MW
Preparation Date: 03/14/2005 15:50 Prep By: VMD Method SW3010A

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01A	MW-5
05030473-02A	MW-10

Analyte	Result	Rep Limit
Calcium	ND	0.1
Magnesium	ND	0.1
Potassium	ND	2
Sodium	ND	0.5

Laboratory Control Sample (LCS)

RunID: TJA_050315A-2684042 Units: mg/L
Analysis Date: 03/15/2005 11:33 Analyst: MW
Preparation Date: 03/14/2005 15:50 Prep By: VMD Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Calcium	1	0.9836	98.36	80	120
Magnesium	1	0.9880	98.80	80	120
Potassium	10	9.216	92.16	80	120
Sodium	1	0.9604	96.04	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-01
RunID: TJA_050315A-2684044 Units: mg/L
Analysis Date: 03/15/2005 11:42 Analyst: MW
Preparation Date: 03/14/2005 15:50 Prep By: VMD Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Calcium	84.33	1	85.44	N/C	1	85.92	N/C	N/C	20	75	125
Magnesium	12.90	1	13.91	N/C	1	13.92	N/C	N/C	20	75	125
Potassium	2.970	10	13.20	102.3	10	12.38	94.06	6.449	20	75	125
Sodium	126.4	1	126.5	N/C	1	125.3	N/C	N/C	20	75	125

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - *Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.*

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0

WorkOrder: 05030473
Lab Batch ID: R135560B

Method Blank

RunID: IC1_050311A-2679297 Units: mg/L
Analysis Date: 03/11/2005 12:38 Analyst: CV

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01B	MW-5
05030473-02B	MW-10

Analyte	Result	Rep Limit
Fluoride	ND	0.50
Nitrogen,Nitrate (As N)	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC1_050311A-2679298 Units: mg/L
Analysis Date: 03/11/2005 12:50 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	9.77	97.7	85	115
Nitrogen,Nitrate (As N)	10	9.83	98.3	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-01
RunID: IC1_050311A-2679328 Units: mg/L
Analysis Date: 03/11/2005 21:01 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Fluoride	1.03	10	10.4	93.7	10	10.1	90.6	2.96	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0

WorkOrder: 05030473
Lab Batch ID: R135910

Method Blank

RunID: IC1_050314A-2685258 Units: mg/L
Analysis Date: 03/14/2005 12:18 Analyst: CV

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01B	MW-5
05030473-02B	MW-10

Analyte	Result	Rep Limit
Sulfate	ND	0.50

Laboratory Control Sample (LCS)

RunID: IC1_050314A-2685259 Units: mg/L
Analysis Date: 03/14/2005 12:31 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10	10.1	101	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030472-03
RunID: IC1_050314A-2685263 Units: mg/L
Analysis Date: 03/14/2005 13:21 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	1940	5000	7060	102	5000	6960	100	1.46	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Bicarbonate
Method: M2320 B
WorkOrder: 05030473
Lab Batch ID: R135936

Method Blank

RunID: WET_050316X-2685847 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01B	MW-5
05030473-02B	MW-10

Analyte	Result	Rep Limit
Alkalinity, Bicarbonate	ND	2.0

Laboratory Control Sample (LCS)

RunID: WET_050316X-2685852 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Bicarbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030438-03
RunID: WET_050316X-2685855 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Bicarbonate	98.5	99.5	1.02	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Carbonate
Method: M2320 B
WorkOrder: 05030473
Lab Batch ID: R135939

Method Blank

RunID: WET_050316Y-2685926 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01B	MW-5
05030473-02B	MW-10

Analyte	Result	Rep Limit
Alkalinity, Carbonate	ND	2.0

Laboratory Control Sample (LCS)

RunID: WET_050316Y-2685931 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Carbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030438-03
RunID: WET_050316Y-2685933 Units: mg/L
Analysis Date: 03/16/2005 17:00 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Carbonate	ND	ND	0	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030473
Lab Batch ID: R135990

Method Blank

RunID: KONELAB_050317E-26867 Units: mg/kg
Analysis Date: 03/17/2005 14:10 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-03A	MW-18-S-9-10'
05030473-04A	MW-18-S-19-20'
05030473-05A	MW-18-S-29-30'
05030473-06A	MW-18-S-39-40'
05030473-07A	MW-18-S-49-50'
05030473-08A	MW-18-S-59-60'
05030473-09A	SB-16-4-5'

Laboratory Control Sample (LCS)

RunID: KONELAB_050317E-26867 Units: mg/kg
Analysis Date: 03/17/2005 14:10 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	500	552.6	110.5	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030437-04
RunID: KONELAB_050317E-26867 Units: mg/kg
Analysis Date: 03/17/2005 14:10 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	ND	500	534.2	105.0	500	537.1	105.6	0.5350	20	76	131

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Hardness, Total (Titrimetric, EDTA) **WorkOrder:** 05030473
Method: E130.2 **Lab Batch ID:** R135996

Method Blank

RunID: WET_050317G-2686864 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01A	MW-5
05030473-02A	MW-10

Analyte	Result	Rep Limit
Hardness (As CaCO3)	ND	5.0

Laboratory Control Sample (LCS)

RunID: WET_050317G-2686866 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Hardness (As CaCO3)	330	335	102	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-08
RunID: WET_050317G-2686873 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Hardness (As CaCO3)	675	1250	1950	102	1250	1920	100	1.29	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030473
Lab Batch ID: R136012

Method Blank

RunID: KONELAB_050318A-26871 Units: mg/kg
Analysis Date: 03/18/2005 9:24 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-10A	SB-16-9-10'
05030473-11A	SB-16-14-15'
05030473-12A	SB-16-19-20'
05030473-13A	SB-16-24-25'
05030473-14A	SB-16-29-30'
05030473-15A	SB-16-34-35'
05030473-16A	SB-16-39-40'

Laboratory Control Sample (LCS)

RunID: KONELAB_050318A-26871 Units: mg/kg
Analysis Date: 03/18/2005 9:24 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	500	469.5	93.90	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-10
RunID: KONELAB_050318A-26872 Units: mg/kg
Analysis Date: 03/18/2005 9:24 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	39.28	500	481.4	88.42	500	480.6	88.26	0.1718	20	76	131

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030473
Lab Batch ID: R136027

Method Blank

RunID: KONELAB_050318B-26874 Units: mg/kg
Analysis Date: 03/18/2005 10:19 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-17A	SB-16-44-45'
05030473-18A	SB-16-49-50'
05030473-19A	SB-16-54-55'
05030473-20A	SB-16-59-60'
05030473-21A	MW-19-S-9-10'
05030473-22A	MW-19-S-19-20'
05030473-23A	MW-19-S-29-30'
05030473-24A	MW-19-S-39-40'
05030473-25A	MW-19-S-49-50'
05030473-26A	MW-19-S-59-60'

Laboratory Control Sample (LCS)

RunID: KONELAB_050318B-26874 Units: mg/kg
Analysis Date: 03/18/2005 10:19 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	500	476.0	95.21	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-17
RunID: KONELAB_050318B-26874 Units: mg/kg
Analysis Date: 03/18/2005 10:19 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	31.14	500	617.4	117.2	500	616.5	117.1	0.1388	20	76	131

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/21/2005 8:25:39 AM

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030473
Lab Batch ID: R136067

Method Blank

RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030473-01B	MW-5
05030473-02B	MW-10

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	50	47.57	95.14	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-01
RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	140.4	250	433.5	117.2	250	432.2	116.7	0.3099	20	76	131

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

Sample Receipt Checklist
And
Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	05030473	Received By:	NB
Date and Time Received:	3/11/2005 9:30:00 AM	Carrier name:	FedEx
Temperature:	4.0°C	Chilled by:	Water Ice

1.	Shipping container/cooler in good condition?	Yes	☑	No	☐	Not Present ☐
2.	Custody seals intact on shippping container/cooler?	Yes	☑	No	☐	Not Present ☐
3.	Custody seals intact on sample bottles?	Yes	☐	No	☐	Not Present ☑
4.	Chain of custody present?	Yes	☑	No	☐	
5.	Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
6.	Chain of custody agrees with sample labels?	Yes	☑	No	☐	
7.	Samples in proper container/bottle?	Yes	☑	No	☐	
8.	Sample containers intact?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test?	Yes	☑	No	☐	
10.	All samples received within holding time?	Yes	☑	No	☐	
11.	Container/Temp Blank temperature in compliance?	Yes	☑	No	☐	
12.	Water - VOA vials have zero headspace?	Yes	☐	No	☐	Not Applicable ☑
13.	Water - pH acceptable upon receipt?	Yes	☑	No	☐	Not Applicable ☐

SPL Representative: _____ Contact Date & Time: _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

Page 1 of 2

Brown & Caldwell		Sampling Event Description		COC Record No.
Contact: Rick Rexroad	Phone: (713) 759-0999	MW-Monitoring Wells SEP	X	SPL Workorder Number: 0503073
Address: 1415 Louisiana	Fax: (713) 308-3886	Other (describe below)		
Suite 2500		WC-Waste Char.		
City: Houston	State: TX, 770002	Other (describe below)		
Project Name: BJ Service		QA/QC Level		
Project No: 126238.020		Std X	Lvl 3	
Site Address: Hobbs, NM		CLP	Other	
Sampled By: Ben Camacho				

SAMPLE ID	DATE	TIME	COMP	GRAB	Matrix: Water	Matrix: Soil	Number Container	Container Type	Preservative	RCRA-Metals,Ca,Mg,K,Na (+) 6010	SO4/Cl-300.0/CLD-325.3	NO3	Carb/Bicarb/Hardness 4500-CO2-D/130	CLD-325.2				
MW-5	3/8/05	1645		X	X		2	3,3	HNO3	X	X		X					
MW-10	3/8/05	1730		X	X		2	3,3	HNO3	X	X		X					
MW-18-S-9-10'	3/9/05	0800		X		X	1	4oz	—					X				
MW-18-S-19-20'	3/9/05	0810		X		X	1	4oz	—					X				
MW-18-S-29-30'	3/9/05	0815		X		X	1	4oz	—					X				
MW-18-S-39-40'	3/9/05	0820		X		X	1	4oz	—					X				
MW-18-S-49-50'	3/9/05	0825		X		X	1	4oz	—					X				
MW-18-S-59-60'	3/9/05	0840		X		X	1	4oz	—					X				
SB-16-4-5'	3/9/05	1000		X		X	1	4oz	—					X				
SB-16-9-10'	3/9/05	1005		X		X	1	4oz	—					X				
SB-16-14-15'	3/9/05	1010		X		X	1	4oz	—					X				
SB-16-19-20'	3/9/05	1015		X		X	1	4oz	—					X				

TAT

24hr ☐ 72hr ☐

48hr ☐ 10 day ☒

Other ☐

Special Detection Limits (Specify)

Special Reporting Requirements: - Soil is Method 325.2 Chloride. NO3 Analysis has 48hr Hold time.

Consultant Remarks

Laboratory Remarks (1) RCRA metals not required. RL 3/14/05

Container Type: 1=40ml vial/2=16oz plastic 3=32oz plastic

	date	time	
Relinquished by Sampler: Ben Camacho	3/10/05	1200	Received by:
Relinquished by:	date	time	Received by:
Relinquished by:	date 3/11/05	time 0930	Received by SPL, Inc.:

RL 3

Brown & Caldwell

Contact: Rick Rexroad	Phone: (713) 759-0999	Sampling Event Description: MW-Monitoring Wells SEP [X]	COC Record No.
Address: 1415 Louisiana	Fax: (713) 308-3886	Other (describe below) [ ]	SPL Workorder Number: 05030473
Suite 2500		WC-Waste Char. [ ]	
City: Houston	State: TX, 770002	Other (describe below) [ ]	
Project Name: BJ Service		QA/QC Level	
Project No: 126238.020		Std [X] Lvl 3 [ ]	
Site Address: Hobbs, NM		CLP [ ] Other [ ]	
Sampled By: Ben Camacho			

SAMPLE ID	DATE	TIME	COMP	GRAB	Matrix: Water	Matrix: Soil	Number Container	Container Type	Preservative	REQUESTED ANALYSIS: RCRA Metals,Ca,Mg,K,Na 6010 (1)	SO4/Cl 300.0/OLD 325.3	NO3	Carb/Bicarb/Hardness 4500-CO2-D/2330	OLD 325.3 325.2				
SB-16-24-25'	3/9/05	1020		X		X	1	4oz	—					X				
SB-16-29-30'	3/9/05	1025		X		X	1	4oz	—					X				
SB-16-34-35'	3/9/05	1030		X		X	1	4oz	—					X				
SB-16-39-40'	3/9/05	1035		X		X	1	4oz	—					X				
SB-16-44-45'	3/9/05	1040		X		X	1	4oz	—					X				
SB-16-49-50'	3/9/05	1045		X		X	1	4oz	—					X				
SB-16-54-55'	3/9/05	1050		X		X	1	4oz	—					X				
SB-16-59-60'	3/9/05	1055		X		X	1	4oz	—					X				
MW-19-S-9-10'	3/9/05	1135		X		X	1	4oz	—					X				
MW-19-S-19-20'	3/9/05	1140		X		X	1	4oz	—					X				
MW-19-S-29-30'	3/9/05	1145		X		X	1	4oz	—					X				
MW-19-S-39-40'	3/9/05	1150		X		X	1	4oz	—					X				

TAT

24hr [ ] 72hr [ ]
48hr [ ] 10 day [X]
Other [ ]

Special Detection Limits (Specify) Soil analysis - Chloride
NO3 has 48 hold time 325.2

Special Reporting Requirements:

Consultant Remarks

Laboratory Remarks (1) RCRA metals not required. PL 3/14/05

Container Type: 1=40ml vial/2=16oz plastic 3=32oz plastic

Relinquished by Sampler: Ben Camacho Ben Camacho	date: 3/10/05	time: 1200	Received by:
Relinquished by:	date:	time:	Received by:
Relinquished by:	date: 3/11/05	time: 0930	Received by SPL, Inc.

PL

Brown & Caldwell

Contact: Rick Rexroad	Phone: (713) 759-0999	Sampling Event Description: MW-Monitoring Wells SEP	X
Address: 1415 Louisiana	Fax: (713) 308-3886	Other (describe below)	
Suite 2500		WC-Waste Char.	
City: Houston	State: TX, 770002	Other (describe below)	
Project Name: BJ Service		QA/QC Level	
Project No: 126238.020		Std X	Lvl 3
Site Address: Hobbs, NM		CLP	Other

COC Record No.

SPL Workorder Number: 0503047 3

Sampled By: Ben Camacho

SAMPLE ID	DATE	TIME	COMP	GRAB	Matrix: Water	Matrix: Soil	Number Container	Container Type	Preservative	RCRA-Metals,Ca,Mg,K,Na 6010	SO4/FLI-388.8/CLD-325.3	NO3	Carb/Bicarb/Hardness 4500-Cl-D/310.1	CLD-325.3 325.2			
MW-19-S-49-50'	3/9/05	1155		X		X	1	4oz	—					X			
MW-19-S-59-60'	3/9/05	1200		X		X	1	4oz	—					X			
MW-5	3/10/05	0740		X	X		1	2	—			X					
MW-10	3/10/05	0755		X	X		1	2	—			X					

RUSH!

TAT: 24hr ☐ 72hr ☐ 48hr ☐ 10 day ☒ Other ☐

Special Detection Limits (Specify)

Special Reporting Requirements:
Soil Analysis - Chloride 325.2
NO3 Analysis has 48 hr hold time

Consultant Remarks

Laboratory Remarks ① RCRA metals not required. PLL 3/15/05

Container Type: 1=40ml vial/2=16oz plastic 3=32oz plastic

	date	time	
Relinquished by Sampler: Ben Camacho	3/10/05	1200	Received by:
Relinquished by:	date	time	Received by:
Relinquished by:	date 3/11/05	time 0930	Received by SPL Inc:

PLL

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:
05030533

MAR 3 0 2005
BROWN AND CALDWELL HOUSTON

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	3/24/2005
ph: (713) 759-0999	fax: (713) 308-3886		

This Report Contains A Total Of 18 Pages

Excluding This Page, Chain Of Custody

And

Attachments

3/24/2005

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

05030533

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	3/24/2005
ph: (713) 759-0999	fax: (713) 308-3886		

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/24/2005
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

05030533

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	3/24/2005
ph: (713) 759-0999	fax: (713) 308-3886		

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

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SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/24/2005
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

05030533

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ Service/126238.020
Site: Hobbs, NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 3/24/2005

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-18	05030533-01	Water	3/11/2005 9:45:00 AM	3/12/2005 10:00:00 AM		☐
MW-15	05030533-02	Water	3/11/2005 10:15:00 AM	3/12/2005 10:00:00 AM		☐
MW-16	05030533-03	Water	3/11/2005 10:50:00 AM	3/12/2005 10:00:00 AM		☐
MW-19	05030533-04	Water	3/11/2005 11:45:00 AM	3/12/2005 10:00:00 AM		☐

3/24/2005

Pat Lynch
Senior Project Manager

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-18 **Collected:** 03/11/2005 9:45 **SPL Sample ID:** 05030533-01

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	273	2		1		03/22/05 19:00	A_E	2693050
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/22/05 19:00	A_E	2693059
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	199	10		10		03/23/05 10:44	T_H	2692987
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	650	125		25		03/17/05 14:00	CV	2686878
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	1.7	0.5		1		03/14/05 19:00	CV	2685289
Nitrogen,Nitrate (As N)	3.4	0.5		1		03/12/05 14:07	CV	2681637
Sulfate	220	25		50		03/14/05 16:04	CV	2685276
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	207	0.1		1		03/22/05 12:29	MW	2692404
Magnesium	43.7	0.1		1		03/22/05 12:29	MW	2692404
Potassium	3.65	2		1		03/22/05 12:29	MW	2692404
Sodium	99.7	0.5		1		03/22/05 12:29	MW	2692404

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-15 **Collected:** 03/11/2005 10:15 **SPL Sample ID:** 05030533-02

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	227	2		1		03/22/05 19:00	A_E	2693052
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/22/05 19:00	A_E	2693061
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	321	10		10		03/23/05 10:45	T_H	2692988
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	640	50		10		03/17/05 14:00	CV	2686881
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	1.1	0.5		1		03/14/05 19:13	CV	2685290
Nitrogen,Nitrate (As N)	2.9	0.5		1		03/12/05 14:19	CV	2681638
Sulfate	200	10		20		03/14/05 16:42	CV	2685279
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	218	0.1		1		03/22/05 12:33	MW	2692405
Magnesium	35.8	0.1		1		03/22/05 12:33	MW	2692405
Potassium	3.42	2		1		03/22/05 12:33	MW	2692405
Sodium	105	0.5		1		03/22/05 12:33	MW	2692405

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-16 **Collected:** 03/11/2005 10:50 **SPL Sample ID:** 05030533-03

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	352	2		1		03/22/05 19:00	A_E	2693053
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/22/05 19:00	A_E	2693062
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	1140	20		20		03/23/05 12:16	T_H	2693184
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	620	50		10		03/17/05 14:00	CV	2686882
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	8.2	2.5		5		03/14/05 19:26	CV	2685291
Nitrogen,Nitrate (As N)	3.2	0.5		1		03/12/05 14:32	CV	2681639
Sulfate	110	5		10		03/14/05 16:55	CV	2685280
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	192	0.1		1		03/22/05 12:37	MW	2692406
Magnesium	34.9	0.1		1		03/22/05 12:37	MW	2692406
Potassium	4.06	2		1		03/22/05 12:37	MW	2692406
Sodium	612	2.5		5		03/22/05 12:56	MW	2692410

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19 **Collected:** 03/11/2005 11:45 **SPL Sample ID:** 05030533-04

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	207	2		1		03/22/05 19:00	A_E	2693054
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/22/05 19:00	A_E	2693063
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	330	10		10		03/23/05 10:45	T_H	2692989
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	620	50		10		03/17/05 14:00	CV	2686883
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	1.2	0.5		1		03/14/05 19:38	CV	2685292
Nitrogen,Nitrate (As N)	9.4	0.5		1		03/12/05 14:45	CV	2681640
Sulfate	200	10		20		03/14/05 17:07	CV	2685281
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	206	0.1		1		03/22/05 12:41	MW	2692407
Magnesium	37.2	0.1		1		03/22/05 12:41	MW	2692407
Potassium	5.64	2		1		03/22/05 12:41	MW	2692407
Sodium	158	0.5		1		03/22/05 12:41	MW	2692407

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

3/24/2005 7:43:06 AM

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 05030533
Lab Batch ID: 46287

Method Blank

RunID: TJA_050322A-2692390 Units: mg/L
Analysis Date: 03/22/2005 11:27 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Result	Rep Limit
Calcium	ND	0.1
Magnesium	ND	0.1
Potassium	ND	2
Sodium	ND	0.5

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01A	MW-18
05030533-02A	MW-15
05030533-03A	MW-16
05030533-04A	MW-19

Laboratory Control Sample (LCS)

RunID: TJA_050322A-2692391 Units: mg/L
Analysis Date: 03/22/2005 11:35 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Calcium	1	1.094	109.4	80	120
Magnesium	1	1.001	100.1	80	120
Potassium	10	10.23	102.3	80	120
Sodium	1	0.9629	96.29	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030495-24
RunID: TJA_050322A-2692393 Units: mg/L
Analysis Date: 03/22/2005 11:44 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Calcium	0.1918	1	1.250	105.8	1	1.267	107.5	1.381	20	75	125
Magnesium	ND	1	0.9846	95.42	1	1.018	98.80	3.374	20	75	125
Potassium	ND	10	9.847	89.98	10	10.44	95.92	5.856	20	75	125
Sodium	ND	1	1.016	90.84	1	1.036	92.86	1.964	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030533
Lab Batch ID: R135694

Method Blank

RunID: IC1_050312A-2681627 Units: mg/L
Analysis Date: 03/12/2005 12:01 Analyst: CV

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01C	MW-18
05030533-02C	MW-15
05030533-03C	MW-16
05030533-04C	MW-19

Laboratory Control Sample (LCS)

RunID: IC1_050312A-2681628 Units: mg/L
Analysis Date: 03/12/2005 12:14 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10	9.78	97.8	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-11
RunID: IC1_050312A-2681633 Units: mg/L
Analysis Date: 03/12/2005 13:17 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	10	9.57	95.7	10	9.39	93.9	1.88	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030533
Lab Batch ID: R135910A

Method Blank

RunID: IC1_050314A-2685258 Units: mg/L
Analysis Date: 03/14/2005 12:18 Analyst: CV

Analyte	Result	Rep Limit
Fluoride	ND	0.50
Sulfate	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01C	MW-18
05030533-02C	MW-15
05030533-03C	MW-16
05030533-04C	MW-19

Laboratory Control Sample (LCS)

RunID: IC1_050314A-2685259 Units: mg/L
Analysis Date: 03/14/2005 12:31 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	9.81	98.1	85	115
Sulfate	10	10.1	101	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030533-01
RunID: IC1_050314A-2685277 Units: mg/L
Analysis Date: 03/14/2005 16:17 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	224	500	741	103	500	729	101	1.66	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0

WorkOrder: 05030533
Lab Batch ID: R135910B

Method Blank

RunID: IC1_050314A-2685258 Units: mg/L
Analysis Date: 03/14/2005 12:18 Analyst: CV

Analyte	Result	Rep Limit
Fluoride	ND	0.50
Sulfate	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01C	MW-18
05030533-02C	MW-15
05030533-03C	MW-16
05030533-04C	MW-19

Laboratory Control Sample (LCS)

RunID: IC1_050314A-2685259 Units: mg/L
Analysis Date: 03/14/2005 12:31 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	9.81	98.1	85	115
Sulfate	10	10.1	101	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-08
RunID: IC1_050314A-2685285 Units: mg/L
Analysis Date: 03/14/2005 18:10 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Fluoride	1.10	10	10.2	91.4	10	10.3	91.9	0.497	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Hardness, Total (Titrimetric, EDTA) **WorkOrder:** 05030533
Method: E130.2 **Lab Batch ID:** R135996A

Method Blank

RunID: WET_050317G-2686864 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Result	Rep Limit
Hardness (As CaCO3)	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01A	MW-18
05030533-02A	MW-15
05030533-03A	MW-16
05030533-04A	MW-19

Laboratory Control Sample (LCS)

RunID: WET_050317G-2686866 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Hardness (As CaCO3)	330	335	102	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030533-01
RunID: WET_050317G-2686879 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Hardness (As CaCO3)	650	1250	1880	98.0	1250	1880	98.0	0	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - *Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.*

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030533
Lab Batch ID: R136348

Method Blank

RunID: KONELAB_050323C-26929 Units: mg/L
Analysis Date: 03/23/2005 10:44 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	1.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01B	MW-18
05030533-02B	MW-15
05030533-04B	MW-19

Laboratory Control Sample (LCS)

RunID: KONELAB_050323C-26929 Units: mg/L
Analysis Date: 03/23/2005 10:44 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	50	47.76	95.52	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030622-10
RunID: KONELAB_050323C-26929 Units: mg/L
Analysis Date: 03/23/2005 10:44 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	243.8	250	514.2	108.2	250	513.9	108.0	0.06550	20	76	131

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Bicarbonate
Method: M2320 B
WorkOrder: 05030533
Lab Batch ID: R136354

Method Blank

RunID: WET_050322T-2693047 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Result	Rep Limit
Alkalinity, Bicarbonate	ND	2.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01B	MW-18
05030533-02B	MW-15
05030533-03B	MW-16
05030533-04B	MW-19

Laboratory Control Sample (LCS)

RunID: WET_050322T-2693049 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Bicarbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030533-01
RunID: WET_050322T-2693050 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Bicarbonate	273	273.4	0	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Carbonate
Method: M2320 B

WorkOrder: 05030533
Lab Batch ID: R136356

Method Blank

RunID: WET_050322U-2693056 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Result	Rep Limit
Alkalinity, Carbonate	ND	2.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-01B	MW-18
05030533-02B	MW-15
05030533-03B	MW-16
05030533-04B	MW-19

Laboratory Control Sample (LCS)

RunID: WET_050322U-2693058 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Carbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030533-01
RunID: WET_050322U-2693059 Units: mg/L
Analysis Date: 03/22/2005 19:00 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Carbonate	ND	ND	0	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030533
Lab Batch ID: R136361

Method Blank

RunID: KONELAB_050323E-26931 Units: mg/L
Analysis Date: 03/23/2005 12:16 Analyst: T_H

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030533-03B	MW-16

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: KONELAB_050323E-26931 Units: mg/L
Analysis Date: 03/23/2005 12:16 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	50	47.07	94.14	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030610-02
RunID: KONELAB_050323E-26931 Units: mg/L
Analysis Date: 03/23/2005 12:16 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	4460	2500	6662	88.10	2500	6657	87.89	0.08149	20	76	131

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	05030533	Received By:	RE
Date and Time Received:	3/12/2005 10:00:00 AM	Carrier name:	Fedex-Priority
Temperature:	3.5°C	Chilled by:	Water Ice

1.	Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present	☐
2.	Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present	☐
3.	Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present	☑
4.	Chain of custody present?	Yes ☑	No ☐		
5.	Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
6.	Chain of custody agrees with sample labels?	Yes ☑	No ☐		
7.	Samples in proper container/bottle?	Yes ☑	No ☐		
8.	Sample containers intact?	Yes ☑	No ☐		
9.	Sufficient sample volume for indicated test?	Yes ☑	No ☐		
10.	All samples received within holding time?	Yes ☑	No ☐		
11.	Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
12.	Water - VOA vials have zero headspace?	Yes ☐	No ☐	Not Applicable	☑
13.	Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable	☐

SPL Representative: _____ Contact Date & Time: _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

Brown & Caldwell | Sampling Event Description | COC Record No. | Page 1 of 1

Contact: Rick Rexroad | Phone: (713) 759-0999
Address: 1415 Louisiana | Fax: (713) 308-3886
Suite 2500
City: Houston | State: TX, 770002

Project Name: BJ Service
Project No: 126238.020
Site Address: Hobbs, NM
Sampled By: Ben Camacho

Sampling Event Description:
- MW-Monitoring Wells SEP [X]
- Other (describe below) [ ]
- WC-Waste Char. [ ]
- Other (describe below) [ ]

QA/QC Level:
- Std [X] Lvl 3 [ ]
- CLP [ ] Other [ ]

SPL Workorder Number: 05030533

SAMPLE ID	DATE	TIME	COMP	GRAB	Matrix: Water	Matrix: Soil	Number Container	Container Type	Preservative	RCRA Metals,Ca,Mg,K,Na	SO4/FLI-388.8/CLD-325.3	NO3	Carb/Bicarb/Hardness	(SC)
MW-18	3/11/05	0945		X	X		3	3,3,2	HNO3	X	X	X	X	
MW-15	3/11/05	1015		X	X		3	3,3,2	HNO3	X	X	X	X	
MW-16	3/11/05	1050		X	X		3	3,3,2	HNO3	X	X	X	X	
MW-19	3/11/05	1145		X	X		3	3,3,2	HNO3	X	X	X	X	

REQUESTED ANALYSIS

TAT
24hr [ ] 72hr [ ]
48hr [ ] 10 day [X]
Other [ ]

Special Detection Limits (Specify)

Special Reporting Requirements:
Nitrate Analysis has 48hr. hold time

Consultant Remarks
3.5c

Laboratory Remarks
Container Type: 1=40ml vial/2=16oz plastic 3=32oz plastic

	date	time	
Relinquished by Sampler: Ben Camacho			Received by:
Relinquished by:			Received by:
Relinquished by:	3/12/05	1000	Received by SPL, Inc.:

PLS 3/c

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

MAR 30 2005
BROWN AND CALDWELL HOUSTON

Brown & Caldwell

Certificate of Analysis Number:

05030531

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	3/24/2005
ph: (713) 759-0999	fax: (713) 308-3886		

This Report Contains A Total Of 28 Pages

Excluding This Page, Chain Of Custody

And

Attachments

3/24/2005

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

Brown & Caldwell

Certificate of Analysis Number:

05030531

Report To:		Project Name:	BJ Service/126238.020
Brown & Caldwell		Site:	Hobbs, NM
Rick Rexroad		Site Address:	
1415 Louisiana			
Suite 2500		PO Number:	
Houston		State:	New Mexico
TX		State Cert. No.:	
77002-		Date Reported:	3/24/2005
ph: (713) 759-0999	fax: (713) 308-3886		

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Patricia L. Lynch

Pat Lynch
Senior Project Manager

3/24/2005
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Brown & Caldwell

Certificate of Analysis Number:

05030531

Report To: Brown & Caldwell
Rick Rexroad
1415 Louisiana
Suite 2500
Houston
TX
77002-
ph: (713) 759-0999 fax: (713) 308-3886

Fax To: Brown & Caldwell
Rick Rexroad fax : (713) 308-3886

Project Name: BJ Service/126238.020
Site: Hobbs, NM
Site Address:
PO Number:
State: New Mexico
State Cert. No.:
Date Reported: 3/24/2005

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-17-S-9-10'	05030531-01	Soil	3/10/2005 8:30:00 AM	3/12/2005 10:00:00 AM		☐
MW-17-S-19-20'	05030531-02	Soil	3/10/2005 8:35:00 AM	3/12/2005 10:00:00 AM		☐
MW-17-S-29-30'	05030531-03	Soil	3/10/2005 8:40:00 AM	3/12/2005 10:00:00 AM		☐
MW-17-S-39-40'	05030531-04	Soil	3/10/2005 8:45:00 AM	3/12/2005 10:00:00 AM		☐
MW-17-S-49-50'	05030531-05	Soil	3/10/2005 8:50:00 AM	3/12/2005 10:00:00 AM		☐
MW-17-S-59-60'	05030531-06	Soil	3/10/2005 8:55:00 AM	3/12/2005 10:00:00 AM		☐
MW-11A	05030531-07	Water	3/10/2005 3:45:00 PM	3/12/2005 10:00:00 AM		☐
MW-12D	05030531-08	Water	3/10/2005 4:30:00 PM	3/12/2005 10:00:00 AM		☐
MW-14	05030531-09	Water	3/10/2005 5:20:00 PM	3/12/2005 10:00:00 AM		☐
MW-17	05030531-10	Water	3/11/2005 8:30:00 AM	3/12/2005 10:00:00 AM		☐
MW-12D	05030531-11	Water	3/11/2005 8:00:00 AM	3/12/2005 10:00:00 AM		☐
MW-11A	05030531-12	Water	3/11/2005 8:10:00 AM	3/12/2005 10:00:00 AM		☐
MW-14	05030531-13	Water	3/11/2005 8:20:00 AM	3/12/2005 10:00:00 AM		☐

Patricia L. Lynch

3/24/2005

Pat Lynch
Senior Project Manager

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

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Client Sample ID MW-17-S-9-10' **Collected:** 03/10/2005 8:30 **SPL Sample ID:** 05030531-01

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	27.3	10	1		03/18/05 11:01	T_H	2687609

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-17-S-19-20' **Collected:** 03/10/2005 8:35 **SPL Sample ID:** 05030531-02

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL		**MCL**	**E325.2**		**Units: mg/kg**		
Chloride	186	10	1		03/18/05 11:01	T_H	2687612

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-17-S-29-30' **Collected:** 03/10/2005 8:40 **SPL Sample ID:** 05030531-03

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	80.5	10	1		03/18/05 11:01	T_H	2687613

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-17-S-39-40' **Collected:** 03/10/2005 8:45 **SPL Sample ID:** 05030531-04

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	40.2	10	1		03/18/05 11:02	T_H	2687614

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - *Analyte* detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-17-S-49-50' **Collected:** 03/10/2005 8:50 **SPL Sample ID:** 05030531-05

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	39.1	10	1		03/18/05 11:02	T_H	2687615

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-17-S-59-60' **Collected:** 03/10/2005 8:55 **SPL Sample ID:** 05030531-06

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			**MCL**	**E325.2**	**Units: mg/kg**		
Chloride	42.8	10	1		03/18/05 11:02	T_H	2687616

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-11A **Collected:** 03/10/2005 15:45 **SPL Sample ID:** 05030531-07

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	485	2		1		03/21/05 15:30	A_E	2690676
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/21/05 15:30	A_E	2690687
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	2740	100		100		03/21/05 12:17	T_H	2689669
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	1300	250		50		03/17/05 14:00	CV	2686871
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	6.3	5		10		03/14/05 19:51	CV	2685293
Sulfate	370	50		100		03/14/05 14:49	CV	2685270
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	394	0.1		1		03/22/05 12:04	MW	2692398
Magnesium	78.7	0.1		1		03/22/05 12:04	MW	2692398
Potassium	31.9	2		1		03/22/05 12:04	MW	2692398
Sodium	1590	2.5		5		03/22/05 12:52	MW	2692409

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-12D **Collected:** 03/10/2005 16:30 **SPL Sample ID:** 05030531-08

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	224	2		1		03/21/05 15:30	A_E	2690678
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/21/05 15:30	A_E	2690689
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	161	5		5		03/18/05 13:18	T_H	2688024
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	680	125		25		03/17/05 14:00	CV	2686872
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	1.1	0.5		1		03/14/05 17:32	CV	2685282
Sulfate	160	10		20		03/14/05 15:02	CV	2685271
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	201	0.1		1		03/22/05 12:08	MW	2692399
Magnesium	10.8	0.1		1		03/22/05 12:08	MW	2692399
Potassium	42.9	2		1		03/22/05 12:08	MW	2692399
Sodium	56	0.5		1		03/22/05 12:08	MW	2692399

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-14 **Collected:** 03/10/2005 17:20 **SPL Sample ID:** 05030531-09

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	448	2		1		03/21/05 15:30	A_E	2690679
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/21/05 15:30	A_E	2690690
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	303	5		5		03/18/05 13:18	T_H	2688025
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	1000	125		25		03/17/05 14:00	CV	2686875
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	2.4	0.5		1		03/14/05 18:35	CV	2685287
Sulfate	130	10		20		03/14/05 15:39	CV	2685274
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	276	0.1		1		03/22/05 12:21	MW	2692402
Magnesium	78.2	0.1		1		03/22/05 12:21	MW	2692402
Potassium	4.36	2		1		03/22/05 12:21	MW	2692402
Sodium	92.2	0.5		1		03/22/05 12:21	MW	2692402

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
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HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-17 **Collected:** 03/11/2005 8:30 **SPL Sample ID:** 05030531-10

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ALKALINITY, BICARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Bicarbonate	251	2		1		03/21/05 15:30	A_E	2690680
ALKALINITY, CARBONATE			**MCL**	**M2320 B**		**Units: mg/L**		
Alkalinity, Carbonate	ND	2		1		03/21/05 15:30	A_E	2690691
CHLORIDE, TOTAL			**MCL**	**E325.2**		**Units: mg/L**		
Chloride	167	5		5		03/18/05 13:18	T_H	2688026
HARDNESS, TOTAL (TITRIMETRIC, EDTA)			**MCL**	**E130.2**		**Units: mg/L**		
Hardness (As CaCO3)	540	50		10		03/17/05 14:00	CV	2686877
ION CHROMATOGRAPHY			**MCL**	**E300.0**		**Units: mg/L**		
Fluoride	3.7	0.5		1		03/14/05 18:48	CV	2685288
Nitrogen,Nitrate (As N)	3.8	0.5		1		03/12/05 13:54	CV	2681636
Sulfate	150	10		20		03/14/05 15:52	CV	2685275
METALS BY METHOD 6010B, TOTAL			**MCL**	**SW6010B**		**Units: mg/L**		
Calcium	169	0.1		1		03/22/05 12:25	MW	2692403
Magnesium	41.3	0.1		1		03/22/05 12:25	MW	2692403
Potassium	17.8	2		1		03/22/05 12:25	MW	2692403
Sodium	99.2	0.5		1		03/22/05 12:25	MW	2692403

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	03/15/2005 9:30	BMB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-12D **Collected:** 03/11/2005 8:00 **SPL Sample ID:** 05030531-11

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY			**MCL**	**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	ND	0.5	1		03/12/05 13:04	CV	2681632

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-11A **Collected:** 03/11/2005 8:10 **SPL Sample ID:** 05030531-12

Site: **Hobbs, NM**

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY			**MCL**	**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	ND	0.5	1		03/12/05 12:51	CV	2681631

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-14 **Collected:** 03/11/2005 8:20 **SPL Sample ID:** 05030531-13

Site: Hobbs, NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
ION CHROMATOGRAPHY			**MCL**	**E300.0**	**Units: mg/L**		
Nitrogen,Nitrate (As N)	5	0.5	1		03/12/05 13:42	CV	2681635

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Metals by Method 6010B, Total
Method: SW6010B
WorkOrder: 05030531
Lab Batch ID: 46287

Method Blank

RunID: TJA_050322A-2692390 Units: mg/L
Analysis Date: 03/22/2005 11:27 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Result	Rep Limit
Calcium	ND	0.1
Magnesium	ND	0.1
Potassium	ND	2
Sodium	ND	0.5

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07A	MW-11A
05030531-08A	MW-12D
05030531-09A	MW-14
05030531-10A	MW-17

Laboratory Control Sample (LCS)

RunID: TJA_050322A-2692391 Units: mg/L
Analysis Date: 03/22/2005 11:35 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Calcium	1	1.094	109.4	80	120
Magnesium	1	1.001	100.1	80	120
Potassium	10	10.23	102.3	80	120
Sodium	1	0.9629	96.29	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030495-24
RunID: TJA_050322A-2692393 Units: mg/L
Analysis Date: 03/22/2005 11:44 Analyst: MW
Preparation Date: 03/15/2005 9:30 Prep By: BMB Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Calcium	0.1918	1	1.250	105.8	1	1.267	107.5	1.381	20	75	125
Magnesium	ND	1	0.9846	95.42	1	1.018	98.80	3.374	20	75	125
Potassium	ND	10	9.847	89.98	10	10.44	95.92	5.856	20	75	125
Sodium	ND	1	1.016	90.84	1	1.036	92.86	1.964	20	75	125

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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(713) 660-0901

Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030531
Lab Batch ID: R135694

Method Blank

RunID: IC1_050312A-2681627 Units: mg/L
Analysis Date: 03/12/2005 12:01 Analyst: CV

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-10C	MW-17
05030531-11A	MW-12D
05030531-12A	MW-11A
05030531-13A	MW-14

Laboratory Control Sample (LCS)

RunID: IC1_050312A-2681628 Units: mg/L
Analysis Date: 03/12/2005 12:14 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	10	9.78	97.8	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-11
RunID: IC1_050312A-2681633 Units: mg/L
Analysis Date: 03/12/2005 13:17 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	10	9.57	95.7	10	9.39	93.9	1.88	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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3/24/2005 9:36:47 AM

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0
WorkOrder: 05030531
Lab Batch ID: R135910A

Method Blank

RunID: IC1_050314A-2685258 Units: mg/L
Analysis Date: 03/14/2005 12:18 Analyst: CV

Analyte	Result	Rep Limit
Fluoride	ND	0.50
Sulfate	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07C	MW-11A
05030531-08C	MW-12D
05030531-09C	MW-14
05030531-10C	MW-17

Laboratory Control Sample (LCS)

RunID: IC1_050314A-2685259 Units: mg/L
Analysis Date: 03/14/2005 12:31 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	9.81	98.1	85	115
Sulfate	10	10.1	101	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030533-01
RunID: IC1_050314A-2685277 Units: mg/L
Analysis Date: 03/14/2005 16:17 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	224	500	741	103	500	729	101	1.66	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Ion Chromatography
Method: E300.0

WorkOrder: 05030531
Lab Batch ID: R135910B

Method Blank

RunID: IC1_050314A-2685258 Units: mg/L
Analysis Date: 03/14/2005 12:18 Analyst: CV

Analyte	Result	Rep Limit
Fluoride	ND	0.50
Sulfate	ND	0.50

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07C	MW-11A
05030531-08C	MW-12D
05030531-09C	MW-14
05030531-10C	MW-17

Laboratory Control Sample (LCS)

RunID: IC1_050314A-2685259 Units: mg/L
Analysis Date: 03/14/2005 12:31 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Fluoride	10	9.81	98.1	85	115
Sulfate	10	10.1	101	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-08
RunID: IC1_050314A-2685285 Units: mg/L
Analysis Date: 03/14/2005 18:10 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Fluoride	1.10	10	10.2	91.4	10	10.3	91.9	0.497	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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3/24/2005 9:36:47 AM

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Hardness, Total (Titrimetric, EDTA) **WorkOrder:** 05030531
Method: E130.2 **Lab Batch ID:** R135996

Method Blank

RunID: WET_050317G-2686864 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Result	Rep Limit
Hardness (As CaCO3)	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07A	MW-11A
05030531-08A	MW-12D
05030531-09A	MW-14
05030531-10A	MW-17

Laboratory Control Sample (LCS)

RunID: WET_050317G-2686866 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Hardness (As CaCO3)	330	335	102	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-08
RunID: WET_050317G-2686873 Units: mg/L
Analysis Date: 03/17/2005 14:00 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Hardness (As CaCO3)	675	1250	1950	102	1250	1920	100	1.29	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030531
Lab Batch ID: R136042

Method Blank

RunID: KONELAB_050318C-26876 Units: mg/kg
Analysis Date: 03/18/2005 11:01 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	10

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-01A	MW-17-S-9-10'
05030531-02A	MW-17-S-19-20'
05030531-03A	MW-17-S-29-30'
05030531-04A	MW-17-S-39-40'
05030531-05A	MW-17-S-49-50'
05030531-06A	MW-17-S-59-60'

Laboratory Control Sample (LCS)

RunID: KONELAB_050318C-26876 Units: mg/kg
Analysis Date: 03/18/2005 11:01 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	500	479.4	95.89	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030531-01
RunID: KONELAB_050318C-26876 Units: mg/kg
Analysis Date: 03/18/2005 11:01 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	27.33	500	581.1	110.7	500	582.9	111.1	0.3219	20	76	131

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

3/24/2005 9:36:48 AM

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030531
Lab Batch ID: R136067

Method Blank

RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Analyte	Result	Rep Limit
Chloride	ND	1.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-08B	MW-12D
05030531-09B	MW-14
05030531-10B	MW-17

Laboratory Control Sample (LCS)

RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	50	47.57	95.14	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030473-01
RunID: KONELAB_050318E-26880 Units: mg/L
Analysis Date: 03/18/2005 13:15 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	140.4	250	433.5	117.2	250	432.2	116.7	0.3099	20	76	131

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Chloride, Total
Method: E325.2
WorkOrder: 05030531
Lab Batch ID: R136161

Method Blank

RunID: KONELAB_050321C-26896 Units: mg/L
Analysis Date: 03/21/2005 12:15 Analyst: T_H

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07B	MW-11A

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: KONELAB_050321C-26896 Units: mg/L
Analysis Date: 03/21/2005 12:15 Analyst: T_H

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	50	47.13	94.25	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05030760-01
RunID: KONELAB_050321C-26896 Units: mg/L
Analysis Date: 03/21/2005 12:15 Analyst: T_H

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
hloride	15.96	50	73.89	115.9	50	73.79	115.7	0.1350	20	76	131

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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3/24/2005 9:36:48 AM

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Bicarbonate
Method: M2320 B
WorkOrder: 05030531
Lab Batch ID: R136234

Method Blank

RunID: WET_050321K-2690673 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Result	Rep Limit
Alkalinity, Bicarbonate	ND	2.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07B	MW-11A
05030531-08B	MW-12D
05030531-09B	MW-14
05030531-10B	MW-17

Laboratory Control Sample (LCS)

RunID: WET_050321K-2690675 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Bicarbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030531-07
RunID: WET_050321K-2690676 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Bicarbonate	485	485.4	0	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Quality Control Report

Brown & Caldwell

BJ Service/126238.020

Analysis: Alkalinity, Carbonate
Method: M2320 B
WorkOrder: 05030531
Lab Batch ID: R136236

Method Blank

RunID: WET_050321L-2690684 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Result	Rep Limit
Alkalinity, Carbonate	ND	2.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05030531-07B	MW-11A
05030531-08B	MW-12D
05030531-09B	MW-14
05030531-10B	MW-17

Laboratory Control Sample (LCS)

RunID: WET_050321L-2690686 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Alkalinity, Carbonate	14.4	14.07	97.71	90	110

Sample Duplicate

Original Sample: 05030531-07
RunID: WET_050321L-2690687 Units: mg/L
Analysis Date: 03/21/2005 15:30 Analyst: A_E

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Alkalinity, Carbonate	ND	ND	0	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

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Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	***05030531***	Received By:	***RE***
Date and Time Received:	***3/12/2005 10:00:00 AM***	Carrier name:	***Fedex-Priority***
Temperature:	***4.0°C***	Chilled by:	***Water Ice***

1.	Shipping container/cooler in good condition?	Yes	☑	No	☐	Not Present ☐
2.	Custody seals intact on shippping container/cooler?	Yes	☑	No	☐	Not Present ☐
3.	Custody seals intact on sample bottles?	Yes	☐	No	☐	Not Present ☑
4.	Chain of custody present?	Yes	☑	No	☐	
5.	Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
6.	Chain of custody agrees with sample labels?	Yes	☑	No	☐	
7.	Samples in proper container/bottle?	Yes	☑	No	☐	
8.	Sample containers intact?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test?	Yes	☑	No	☐	
10.	All samples received within holding time?	Yes	☑	No	☐	
11.	Container/Temp Blank temperature in compliance?	Yes	☑	No	☐	
12.	Water - VOA vials have zero headspace?	Yes	☐	No	☐	Not Applicable ☑
13.	Water - pH acceptable upon receipt?	Yes	☑	No	☐	Not Applicable ☐

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

Brown & Caldwell

Contact: Rick Rexroad	Phone: (713) 759-0999
Address: 1415 Louisiana	Fax: (713) 308-3886
Suite 2500	
City: Houston	State: TX, 770002
Project Name: BJ Service	
Project No: 126238.020	
Site Address: Hobbs, NM	
Sampled By: Ben Camacho	

Sampling Event Description

- MW-Monitoring Wells SEP [X]
- Other (describe below) [ ]
- WC-Waste Char. [ ]
- Other (describe below) [ ]

QA/QC Level

- Std [X] Lvl 3 [ ]
- CLP [ ] Other [ ]

COC Record No.: Page 1 of 1

SPL Workorder Number: 05030531

PH @ 3/12

SAMPLE ID	DATE	TIME	COMP	GRAB	Matrix: Water	Matrix: Soil	Number Container	Container Type	Preservative	RCRA-Metals,Ca,Mg,K,Na 6010 (1)	SO4/Fl.1-300.0/CLD-325.3	NO3	Carb/Bicarb/Hardness 4500-CO2-D/130.1	CLD-325.3 325.2			
MW-17-S-9-10'	3/10/05	0830		X		X	1	4oz	—					X			
MW-17-S-19-20'	3/10/05	0835		X		X	1	4oz	—					X			
MW-17-S-29-30'	3/10/05	0840		X		X	1	4oz	—					X			
MW-17-S-39-40'	3/10/05	0845		X		X	1	4oz	—					X			
MW-17-S-49-50'	3/10/05	0850		X		X	1	4oz	—					X			
MW-17-S-59-60'	3/10/05	0855		X		X	1	4oz	—					X			
MW-11A	3/10/05	1545		X	X		2	3,3	HNO3	X	X		X				
MW-12D	3/10/05	1630		X	X		2	3,3	HNO3	X	X		X				
MW-14	3/10/05	1720		X	X		2	3,3	HNO3	X	X		X				
MW-12D	3/11/05	0800		X	X		1	2	—			X					
MW-11A	3/11/05	0810		X	X		1	2	—			X					
MW-14	3/11/05	0820		X	X		1	2	—			X					
MW-17	3/11/05	0830		X	X		3	3,2	HNO3	X	X	X	X				

RUSH

TAT

24hr [ ] 72hr [ ]
48hr [ ] 10 day [X]
Other [ ]

Special Detection Limits (Specify)

Special Reporting Requirements: Soil analyzed for chloride 325.2
Nitrate Analysis has 48hr hold time

Consultant Remarks

Laboratory Remarks (1) RCRA metals not required 4.0c PL 3/14/05

Container Type: 1=40ml vial/2=16oz plastic 3=32oz plastic

	date	time	
Relinquished by Sampler: Ben Camacho, [signature]	3/11/05	1500	Received by:
Relinquished by:	date	time	Received by:
Relinquished by:	date 3/12/05	time 1000	Received by SPL, Inc.: [signature]

PLL 8c

APPENDIX C

Groundwater Sampling Forms

APPENDIX C

Groundwater Sampling Forms

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-5

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/8/05 Time: 1620

Client: Os-services Personnel: B. CAMACHO

Project Location: Hobbs, NM Weather: 75°F, wind 5mph East

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 64.58 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.80 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 2.78 feet Well Volume: .46 gal Screened Interval (from GS):

x 3 = 1.4 gallons *Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft*

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. Disposable bailer
2. YSI-600 XL
3. Hach turb.

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other:	Comments
1630	~~1.0~~	6.84	16.18	0.994	161.2	7.90	13.0		
1640	~~1.2~~	7.03	16.33	0.978	149.0	6.72	11.0		

well purged dry at 1.2 gallons removed wait 1 1/2 recharge to sample.

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☐ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☐ No

Sample ID: MW-5 Sample Time: 1645 # of Containers: ~~1~~ 2

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: mg/L

DO: mg/L

Nitrate: mg/L

Sulfate: mg/L

Alkalinity: mg/L

5. COMMENTS

nitrate Sampled on 3/10/05 @ 0740

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

FORM GW-1 (Rev 6/8/99 - wah)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-10

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/9/05 Time: 1700

Client: DS-Services Personnel: B. CAMACHO

Project Location: Hobbs, NM Weather: Sunny 75-85°F wind 5mph E

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 63.43 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 60.91 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Length of Water Column: 2.5 feet	Well Volume: .42 gal Screened Interval (from GS):

3 well x = 1.3 gallons *Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft*

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. YSI 600XL
2. Hach Turb.
3. Bailer

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other:	Comments
1715	—	6.70	16.95	3,298	-41.7	5.07	19.2		- water purged
1720	-	6.66	16.86	3.355	-54.5	3.36	15.7		by filtr. pump 1st.
1725	-	6.65	17.07	3.357	-55.8	3.11	—		- went Dry
									- well went Dry
									after 1.3 gallons
				1.3 gal removed					was bailed.

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☒ No

Sample ID: MW-10 Sample Time: 1730 # of Containers: 2

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron:	mg/L
DO:	mg/L
Nitrate:	mg/L
Sulfate:	mg/L
Alkalinity:	mg/L

5. COMMENTS

Bailed Nitrate on 3/10/05 @ 0755

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

FORM GW-1 (Rev 6/8/99 - wah)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-11A

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/10/05 Time: 1530

Client: BJ-Services Personnel: B. CAMACHO

Project Location: Hobbs, NM Weather: 75-80°F 5mph East, Sunny

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 64.79 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.45 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: 3.34 feet Well Volume: 1.58 gal Screened Interval (from GS):

3 well x = 1.7

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: ____ ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. Bailer
2. YSI 600XL
3. Hach Turb meter

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other:	Comments
1540	1.6	6.50	20.48	8492	-63.9	3.94	96.6 (BC)		well purged dry after 1.7gal removed. -Waiting for recharge -water recharging slowly.
1545	—	6.30	20.44	8.471	-61.6	3.20	76.2		

1.7 Gallons removed

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☒ No

Sample ID: MW-11A Sample Time: 1545 # of Containers: 2

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: ____ mg/L

DO: ____ mg/L

Nitrate: ____ mg/L

Sulfate: ____ mg/L

Alkalinity: ____ mg/L

5. COMMENTS

Sampled for Nitrate on 3/11/05 @ 0810

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-12D

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/10/05 Time: 1555

Client: BJ-Services Personnel: B.CAMACHO

Project Location: Hobbs, NM Weather: 68°F, wind 5mph east

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 87.65 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.56 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: _____ feet Well Volume: _____ gal Screened Interval (from GS): _____

pump intake @ 73.0'

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: .2 gal/min

Equipment Model(s)
1. YSI 600 XL
2. HACH Turbidity
3. fultz pump

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other: ft	Comments
1610	—	6.23	19.86	1.073	9.3	2.00	35.7	61.78	
1614	.6	6.07	19.85	1.039	-56.1	.71	28.0	61.78	
1618	1.2	6.09	19.97	1.047	-62.7	.53	22.0	61.79	
1622	1.8	6.09	20.04	1.048	-63.9	.52	19.7	61.79	
1626	2.4	6.10	20.01	1.050	-64.4	.52	21.5	61.79	

BC

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 61.79 Field Filtered? ☐ Yes ☒ No

Sample ID: MW-12A Sample Time: 1630 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: _____ mg/L

DO: _____ mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

nitrate Sample on 3/11/05 - 0800

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

FORM GW-1 (Rev 6/8/99 - wah)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-14

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/10/05 Time: 1655

Client: BJ-Services Personnel: B. CAMACHO

Project Location: Hobbs, NM Weather: 75-80°F wind 5-7mph NE

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 67.38 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 62.18 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Length of Water Column: 7.20 feet	Well Volume: 1.2 gal X 3 = 3.6 Screened Interval (from GS):

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. disposable Bailer
2. YSI-600 XL
3. HACH Turbidity

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other:	Comments
1700	3.6	6.86	18.31	1.484	132.9	7.30	325		
1705	—	6.86	18.26	1.486	132.1	7.32	457		

well purged dry after 3.0 gallons removed

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: ___ ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☒ No

Sample ID: MW-14 Sample Time: 1720 # of Containers: 2

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron:	mg/L
DO:	mg/L
Nitrate:	mg/L
Sulfate:	mg/L
Alkalinity:	mg/L

5. COMMENTS

Nitrate sampled on 3/11/05 @ 0820

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

FORM GW-1 (Rev 6/8/99 - wah)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-15

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/11/05 Time: 0955

Client: BJ-Services Personnel: B. Camacho

Project Location: Hobbs, NM Weather: 80°F / 15 mph NE / Sunny

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 66.21 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.13 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Length of Water Column: 5.08 feet	Well Volume: .85 gal — Screened Interval (from GS):
Pump intake depth — (from GS)	3X well = 2.6 — Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☒ Yes ☐ No Pumping Rate: — gal/min

Equipment Model(s)
1. disposable bailer
2. YSI 600 XL
3. HACH Turb. meter

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
1000	2.6	7.01	18.43	1.462	131.5	6.66	41.4		
1010	—	6.81	18.30	1.473	151.9	5.40	—		- turn pump
1015	—	6.70	18.20	1.473	162.3	5.40	37.2		purged 1 gallons before water was below pump
				2.6 gallons bailed					

4. SAMPLING DATA

Method(s): ☒ Bailer, Size: 2 ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☐ Stainless ☐ PVC ☒ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: — Field Filtered? ☐ Yes ☐ No

Sample ID: MW-15 Sample Time: 1015 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: ____ mg/L

DO: ____ mg/L

Nitrate: ____ mg/L

Sulfate: ____ mg/L

Alkalinity: ____ mg/L

5. COMMENTS

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-16

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/11/05 Time: 1025

Client: BJ Services Personnel: B. CAMACHO, Yang Ping

Project Location: Hobbs, NM Weather: Sunny, wind 15mph NE

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 75.85 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 65.64 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: _____ feet Well Volume: _____ gal Screened Interval (from GS): _____

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

Pump intake depth 70' (from ~~GS~~) TOC

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/Tubing ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: Liters ~~gal~~/min

Equipment Model(s)

1. Hach Turbidity
2. Fultz pump
3. YSI-600XL

Time	Cum. ~~Gallons~~ Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
—	Liters	—	°C	mS/cm	mV	mg/L	NTU	ft	
10:30	—	6.94	17.90	3.404	162.8	7.94	247	65.92	
10:34	.6	6.84	18.18	3.443	156.1	7.94	182	65.89	-Turbidity
10:37	1.2	6.74	18.27	3.455	149.7	7.85	155	65.89	very High
10:40	1.8	6.70	18.34	3.455	151.4	7.86	154	65.89	
10:43	2.4	6.67	18.66	3.446	147.8	7.82	160	65.89	
10:46	3.0	6.66	18.77	3.443	146.4	7.82	150	65.89	
10:49	3.6	6.67	19.03	3.439	145.1	7.79	98	65.89	
10:52	4.2							65.89	BC

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: Pump/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Tubing/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 65.89 Field Filtered? ☐ Yes ☒ No

Sample ID: MW-16 Sample Time: 10:50 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: _____ mg/L

DO: _____ mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

Sampled for Anions, cations, CO3, HCO3, Hardness

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-17

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/11/05 Time: 0735

Client: D5-Services Personnel: B. CAMACHO, Yang Ling

Project Location: Hobbs, NM Weather: Sunny, 80°F 15 mph NE

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 73.98 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.71 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: ~~67~~ feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: _____ feet Well Volume: _____ gal Screened Interval (from GS): _____

pump intake depth = 67 ft (TOC)

Note: 2-inch well = 0.167 gal/ft 4-inch well = 0.667 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: (Pump)/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/(Tubing) ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: .2 gal/min

Equipment Model(s)
1. Hach Turbidity
2. YSI 600XL
3. Fultz pump

Time	Cum. Gallons Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Other: ft	Comments
—	Liters	—	°C	ms/cm	mV	mg/L	NTU	ft	
0753	—	7.79	16.13	1,180	176.0	8.53	>1000	61.79	
0756	.6	7.65	16.36	1.164	153.6	8.67	>1000	61.78	
0800	1.2	7.51	16.41	1.134	121.9	8.64	>1000	61.78	
0803	1.8	7.46	17.45	1.121	113.2	8.56	705	61.78	-Turbidity very
0806	2.4	7.44	17.29	1.121	108.7	8.51	577	61.78	High.
0809	3.0	7.41	17.17	1.113	107.6	8.58	537	61.78	
0812	3.6	7.38	16.93	1.108	104.6	8.62	257	61.78	
0815	4.2	7.36	16.45	1.116	105.1	8.58	190	61.78	
0818	4.8	7.35	16.60	1.111	103.4	8.54	136	61.78	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: (Pump)/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: (Tubing)/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 61.78 Field Filtered? ☐ Yes ☐ No

Sample ID: MW-17 Sample Time: 8:30 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: _____

Geochemical Analyses

Ferrous Iron: _____ mg/L

DO: _____ mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

Sampled for Anions, cations, CO3, HCO3, Hardness

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Signature

FORM GW-1 (Rev 6/8/99 - wah)

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-18

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/11/05 Time: 0900

Client: 65 - Services Personnel: B. CAMACHO, Yang Ping

Project Location: Hobbs, NM Weather: wind 15 mph NE, 80°F sunny

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 73.90 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 61.76 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: _____ feet Well Volume: _____ gal Screened Interval (from GS): _____

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

Pump intake depth 67' (from [redacted] BTOC

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: (Pump)/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/(Tubing) ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: 0.2 ~~gal~~ L/min

Equipment Model(s)

1. YSI-600 XL
2. HACH Turbidity
3. fu/tz pump

Time	Cum. ~~Gallons~~ Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
	Liters	—	°C	ms/cm	MV	mg/L	NTU	ft	- Turbidity very
9:10	—	7.15	17.66	1.375	102.3	7.73	484	61.78	High.
9:13	.6	7.03	17.90	1.377	106.1	7.91	460	61.78	
9:16	1.2	6.92	18.52	1.376	100.1	8.11	371	61.78	
9:19	1.8	6.91	19.19	1.382	93.0	8.16	302	61.78	
9:22	2.4	6.84	19.81	1.384	101.8	8.13	201	61.78	
9:25	3.0	6.78	19.99	1.389	108.8	8.11	156	61.78	- water clearing
9:28	3.6	6.70	19.78	1.394	116.1	8.08	118	61.78	up.
9:31	4.2	6.72	19.74	1.393	118.1	8.04	61.9	61.78	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: (Pump)/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: (Tubing)/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 61.78 Field Filtered? ☐ Yes ☐ No

Sample ID: MW-18 Sample Time: 9:45 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: _____ mg/L

DO: _____ mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

Sampled for Anions, cations, CO3, HCO3, Hardness

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

Signature

BROWN AND CALDWELL

GROUNDWATER SAMPLING FIELD DATA SHEET

WELL ID: MW-19

1. PROJECT INFORMATION

Project Number: 126238 Task Number: 019 Date: 3/11/05 Time: 1115

Client: BS-Services Personnel: B. CAMACHO, Yang Ping

Project Location: Hobbs, NM Weather: 80°F, sunny, win 15mph NE

2. WELL DATA

Casing Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Screen Diameter: 2 inches	Type: ☒ PVC ☐ Stainless ☐ Galv. Steel ☐ Teflon® ☐ Other:
Total Depth of Well: 76.15 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Static Water: 69.01 feet	From: ☒ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:
Depth to Product: — feet	From: ☐ Top of Well Casing (TOC) ☐ Top of Protective Casing ☐ Other:

Length of Water Column: _____ feet Well Volume: _____ gal Screened Interval (from GS): _____

Pump intake depth 72' (from ~~GS~~ TOC

Note: 2-inch well = 0.16 gal/ft 4-inch well = 0.65 gal/ft

3. PURGE DATA

Purge Method: ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

Materials: (Pump)/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: Rope/(Tubing) ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Was well purged dry? ☐ Yes ☒ No Pumping Rate: 1.2 ~~gal~~ L/min

Equipment Model(s)

1. YSI-600 XL
2. Fultz pumps
3. Hach Turb.

Time	Cum. ~~Gallons~~ Removed	pH	Temp	Spec. Cond.	Eh	Dissolved Oxygen	Turbidity	Depth to Water (TOC)	Comments
—	Liters	—	°C	Ms/cm	MV	mg/L	NTU	ft	
11:16	—	7.01	19.04	1.611	115.8	7.67	>1000	70.02	
11:19	.6	6.72	19.11	1.592	113.2	7.64	>1000	69.58	
11:22	1.2	6.66	19.79	1.584	95.6	7.39	>1000	69.53	
11:25	1.8	6.66	20.16	1.592	92.5	7.26	681	69.53	
11:28	2.4	6.64	20.25	1.601	95.3	7.17	312	69.53	
11:31	3.0	6.58	19.78	1.598	107.5	7.40	510	69.53	
11:34	3.6	6.58	19.88	1.600	109.0	7.42	325	69.53	
11:37	4.2	6.60	19.8	1.604	110.5	7.50	127	69.53	

4. SAMPLING DATA

Method(s): ☐ Bailer, Size: ___ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

Materials: (Pump)/Bailer ☒ Stainless ☐ PVC ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned ☐ Disposable

Materials: (Tubing)/Rope ☒ Polyethylene ☐ Polypropylene ☐ Teflon® ☐ Other: _____ ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned ☒ Disposable

Depth to Water at Time of Sampling: 69.53 Field Filtered? ☐ Yes ☒ No

Sample ID: MW-19 Sample Time: 11:45 # of Containers: 3

Duplicate Sample Collected? ☐ Yes ☒ No ID: —

Geochemical Analyses

Ferrous Iron: _____ mg/L

DO: _____ mg/L

Nitrate: _____ mg/L

Sulfate: _____ mg/L

Alkalinity: _____ mg/L

5. COMMENTS

Sampled for cations, anions, CO_3, HCO_3, Hardness

Note: Include comments such as well condition, odor, presence of NAPL, or other items not on the field data sheet.

Gen\non-proj\forms\Field Data Sheet.xls\BC-gallons

FORM GW-1 (Rev 2/26/02 - dg)

Signature