

Office of Environmental Management – Grand Junction



Moab UMTRA Project
March 2009 Validation Data Package for
Performance Assessment of the
Monthly Sampling for the Ground Water
Interim Action

June 2009



U.S. Department
of Energy

Office of Environmental Management

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March 2009 Validation Data Package for Performance Assessment
of the Monthly Sampling for the
Ground Water Interim Action

June 2009

**Moab UMTRA Project
March 2009 Monthly Ground Water Sampling Event**

Revision 0

Review and Approval

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6/16/09
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Revision History

Revision No.	Date	Reason/Basis for Revision
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Attachment 1. Interim Action Well Field Monthly Sampling Trip Report

Acronyms and Abbreviations

bgs	below ground surface
CCB	continuing calibration blank
CCV	continuing calibration verification
CF	Configuration
cfs	cubic feet per second
COC	chain of custody
CRI	reporting limit verification
EB	equipment blank
EDD	electronic data deliverable
EPA	Environmental Protection Agency
ft	feet
gpm	gallons per minute
ICP	inductively coupled plasma
ICP-MS	inductively coupled plasma-mass spectrometry
ICV	initial calibration verification
IDL	instrument detection limit
LCS	laboratory control sample
MB	method blank
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
r^2	correlation coefficient
RIN	report identification number
RL	reporting limit
RPD	relative percent difference
RS	replicate sample
SD	serial dilution
SDG	sample data group
TDS	total dissolved solids
UMTRA	Uranium Mill Tailings Remedial Action
UMTRCA	Uranium Mill Tailings Radiation Control Act
USGS	U.S. Geological Survey
VDP	validation data package

1.0 Introduction

The purpose of this document is to summarize the results of the data validation process associated with ground water and/or surface water samples collected from the Moab Uranium Mill Tailings Remedial Action (UMTRA) site. This data validation follows the criteria according to the *Environmental Procedures Catalog* (STO 6), “Standard Practice for Validation of Laboratory Data,” GT-9(P) (2006).

As part of the scope of this document, the complete results of this data validation process are provided. Section 1 presents the Summary Criteria, the Sampling Event Summary, and the Sampling and Analysis. Section 2 provides the Data Assessment Summaries, including the Field Activity Verification, Laboratory Performance Assessment, Field Analyses/Activities description, and the Certification. All flagged data, and the reasons for the applicable flags, are also presented in Section 2. The Data Presentation is contained in Section 3, which includes a summary of the anomalous data generated by the validation process. Various appendices contain the Water Sampling Field Activities Verification, Water Quality Data, Water Level Data, and the Minimums and Maximums Report table. Attachment 1 contains the trip report. All Colorado River flow discussed in this document is measured from the U.S. Geological Survey (USGS) Cisco gaging station No. 09180500.

This validation data package (VDP) presents the results of the March 2009 monthly sampling event completed from March 16 through 26, 2009, in which ground water samples were collected from a variety of locations across the well field. Section 1.0 contains the Summary Criteria with a sample location map (Section 1.1), the Sampling Event Summary (Section 1.2), and the Sampling and Analyses (Section 1.3) for this March 2009 monthly sampling event.

1.1 Summary Criteria

Sampling Period: March 16 through 26, 2009

The purpose of this sampling was to collect data that can be used to evaluate the performance of the ground water interim action well field. All sampling locations are shown on Figure 1. A summary of site conditions is presented in Figure 2.

1. As a result of this sampling event, is there any indication of anomalous data that may be related to well field pump rate changes, river flow, or other known causes?

Yes. There were 13 locations (three surface water locations and 10 well points) with 36 analytical results that were considered anomalous based on the Minimums and Maximums Report. All were anomalously high, and a majority of the results (27 of the 36) were collected from well points located within the riverbed. Ground water discharge may have been more prevalent during this time period of low river stage, increasing the analyte concentrations as evidenced by the accompanying increased total dissolved solids (TDS) concentrations.

2. Were all interim action well field pumps operating within the planned parameters?

Yes. Configuration (CF) 1 wells were extracting ground water at a rate of approximately 22 gallons per minute (gpm), while PW02 was extracting at a rate of 16 gpm. CF3 wells were restarted for the first time in 2009 on March 23 and were extracting approximately

20 gpm by the end of this sampling event. As a result, the total well field extraction rate (by the end of the event) was approximately 58 gpm.

3. Was the evaporation pond functioning properly?

Yes. The pond level ranged from 5.0 to 5.8 feet (ft) during this sampling event.

4. Were all proposed well (ground water) and surface water locations sampled during this event?

No. A number of the surface water locations and well points were dry and could not be sampled during this event.

5. Were there any site activities that have impacted or may impact the interim action system?

No.

1.2 Sampling Event Summary

This VDP presents the validated data associated with the ground water collected during the March 2009 interim action monthly sampling event at the former uranium tailings processing site in Moab, Utah. This VDP includes a discussion of the data validation process in Section 2.0, with a description of how these data are qualified based on field and laboratory verification assessments (Sections 2.1 and 2.2). Attachment 1 contains the trip report detailing the field events associated with this sampling event.

A list of flagged data is presented in Table 4 in Section 2.2. No data were rejected (flagged as “R”) as a result of this validation process. A Minimums and Maximums Report (presented in Section 3.1) was generated to determine if the data are within a normal statistical range. There were 13 locations with 36 analytical results associated with this sampling event based on the results of the Minimums and Maximums Report (Section 3.1).

While independent of the data validation process, a brief summary of the most recent concentration trends based on the March 2009 data is provided for CFs 3, 2, 1, and 4 (listed from north to south) within the well field. Time versus concentration (ammonia, TDS, and uranium) plots for selected performance indicator monitoring wells located upgradient or downgradient within the interim action well field are presented to display historical trends exhibited by the data over the past 2 years. Colorado River flows over the same time frame are also plotted to determine whether the magnitude of river flows influences analyte concentrations.

CF3

Among the locations typically discussed in this section for CF3, samples were collected from 0683 (27 ft below ground surface [bgs]), 0688 (31 ft bgs), and 0689 (46 ft bgs) during March 2009. A review of the time versus concentration plots (Figures 3, 4, and 5) suggest ammonia, TDS, and uranium concentrations have remained constant since October 2008 and have stayed within the historical range.

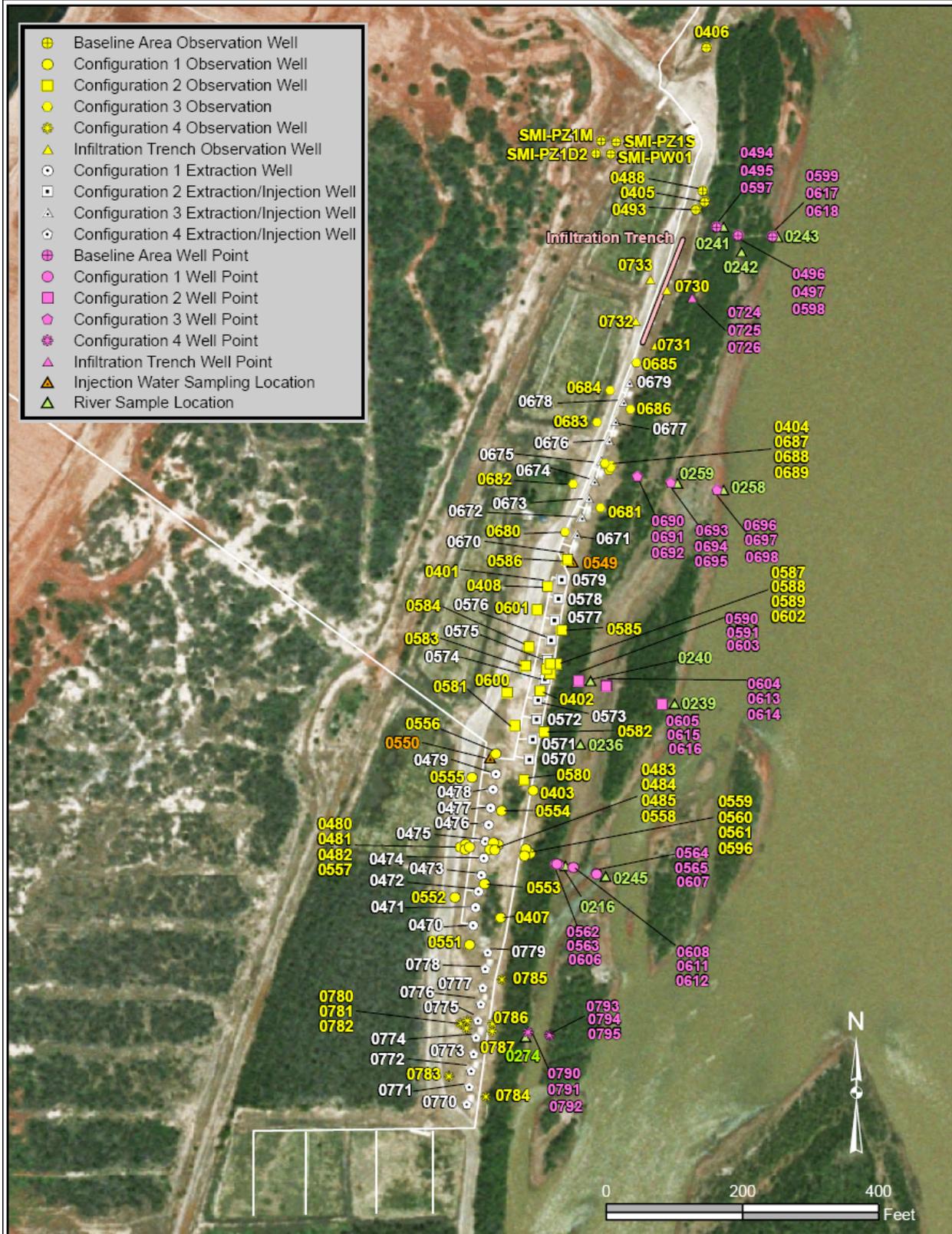


Figure 1. Sample Locations at the Interim Action Well Field and Baseline Area (may include locations not sampled)



V:\moab.tac.local\Applications\DNS\Drawings\Moab\Water\MOA_GW_20090604_00075.mxd

Scale (ft)
250

N

U.S. DEPARTMENT OF ENERGY DENVER, COLORADO	MOAB UMTRA PROJECT S&E ASSOCIATES, INC. 3000 W. 10TH AVENUE DENVER, COLORADO 80202
Site Conditions	
Date: June 4, 2009	Project: MOAGW00075

Figure 2. March 2009 Sampling Event Site Conditions

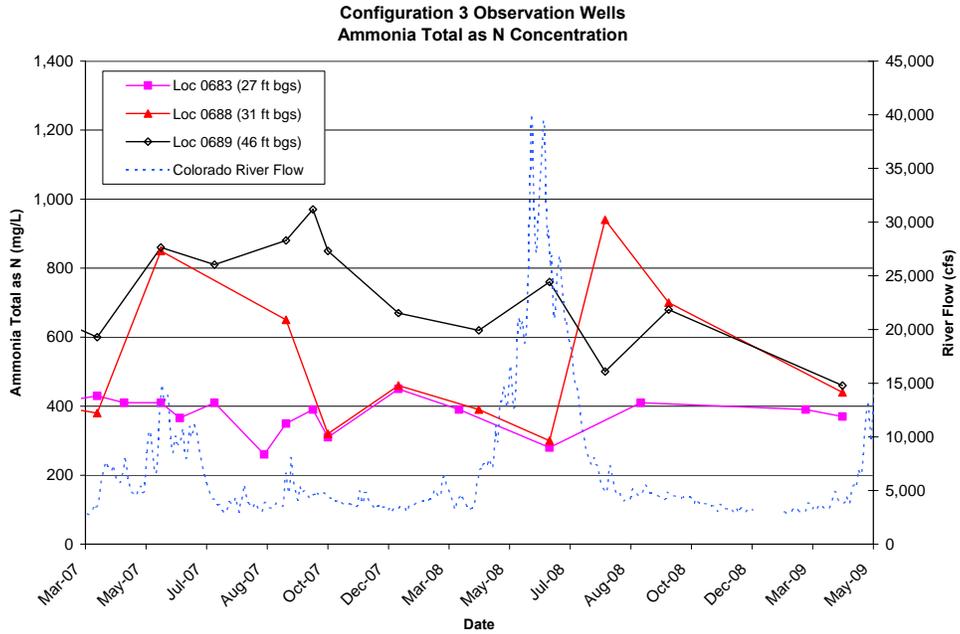


Figure 3. CF3 Observation Wells Time Versus Ammonia Total as N Concentration Plot

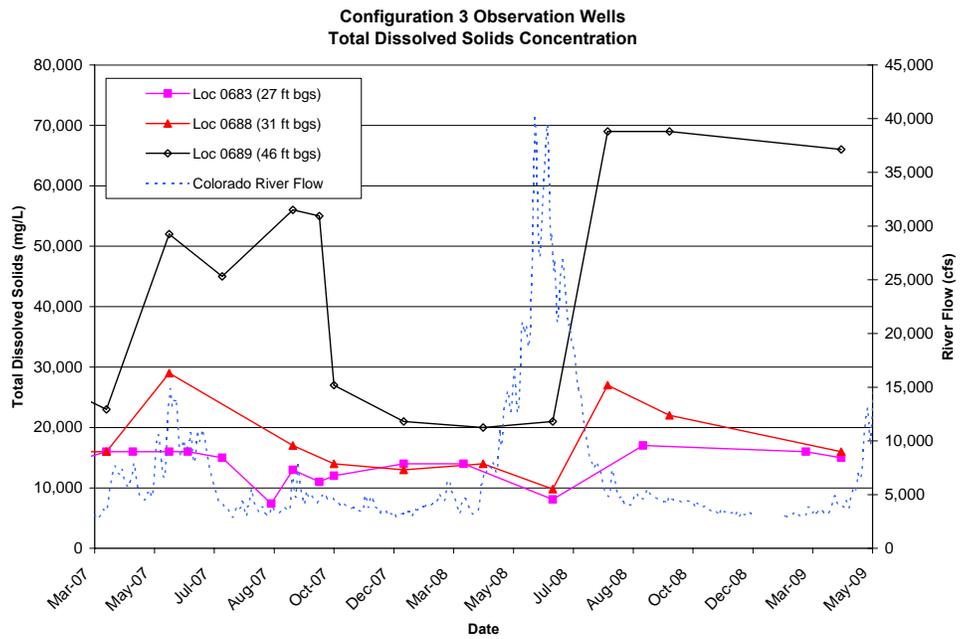


Figure 4. CF3 Observation Wells Time Versus TDS Concentration Plot

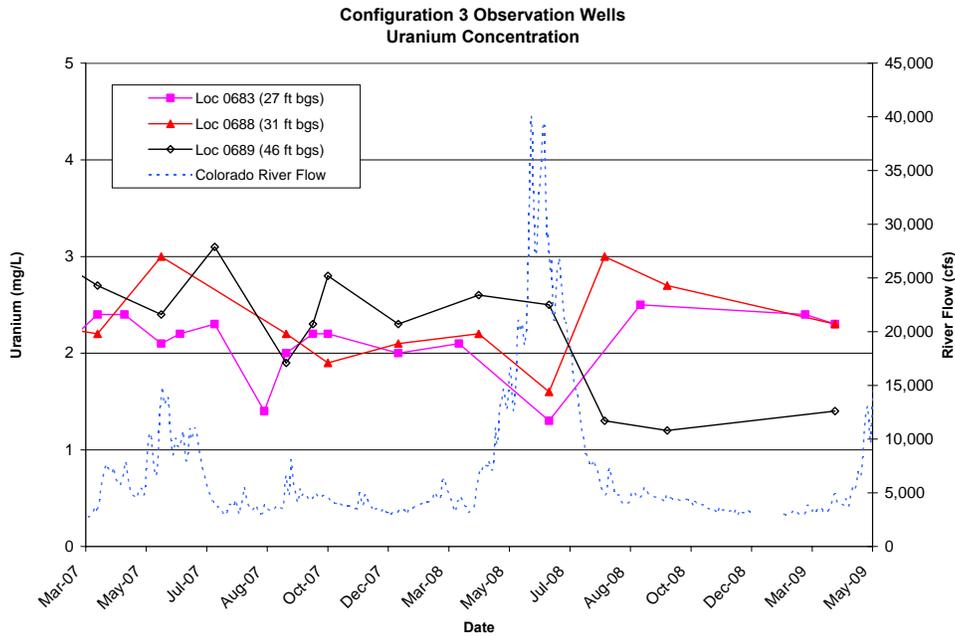


Figure 5. CF3 Observation Wells Time Versus Uranium Concentration Plot

CF2

Among the indicator wells, samples were collected only from 0588 (34 ft bgs) and 0589 (52 ft bgs) during March 2009. The time versus ammonia (Figure 6), TDS (Figure 7), and uranium (Figure 8) concentration plots indicate these analyte concentrations did not significantly change since the previous sampling event and remained within the historical range.

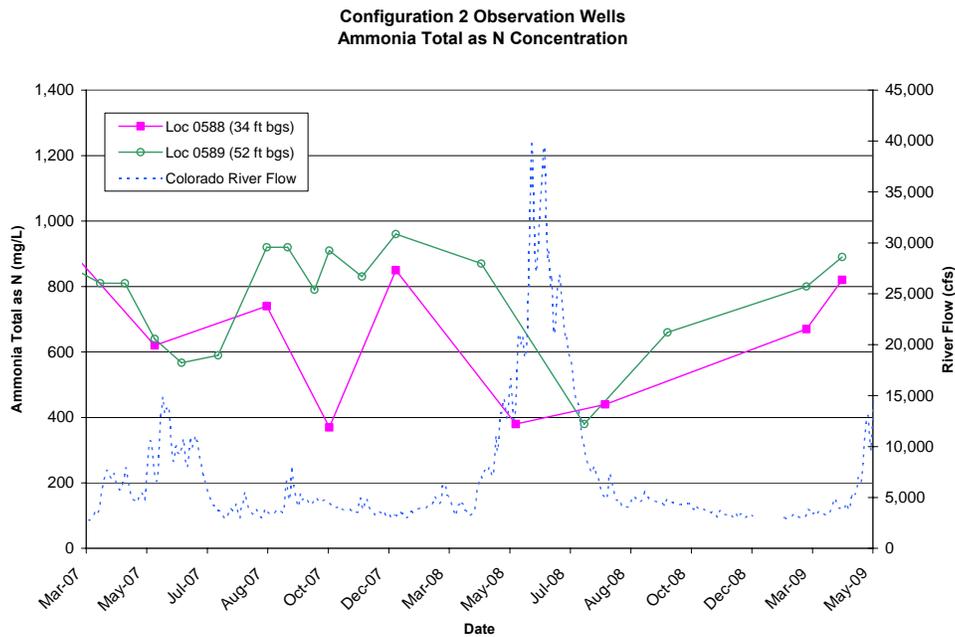


Figure 6. CF2 Observation Wells Time Versus Ammonia Total as N Concentration Plot

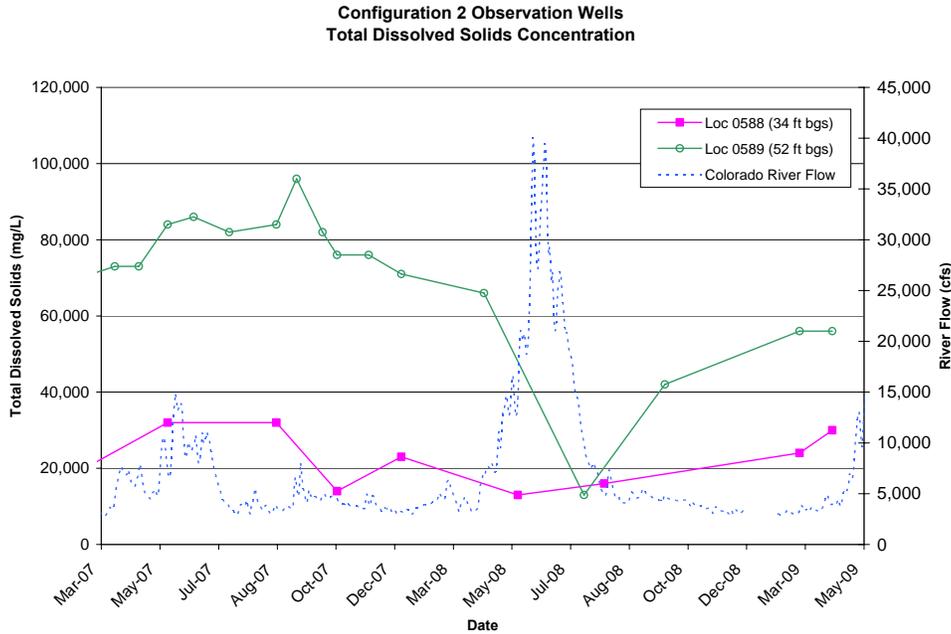


Figure 7. CF2 Observation Wells Time Versus TDS Concentration Plot

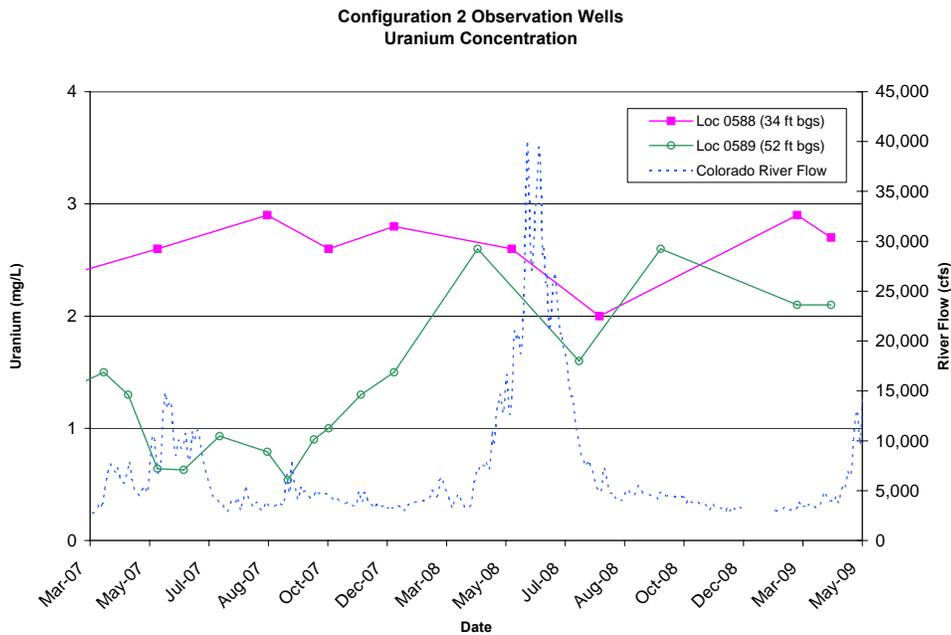


Figure 8. CF2 Observation Wells Time Versus Uranium Concentration Plot

CF1

Wells 0483 (from 18 ft bgs), 0560 (31 ft bgs), and 0557 (40 ft bgs) were sampled during the March 2009 monthly event. Figures 9, 10, and 11 display the ammonia, TDS, and uranium concentration trends, respectively, over the past 2 years. Similar to the other parts of the well field, analyte concentrations either remained constant or continued rebounding to base-flow levels.

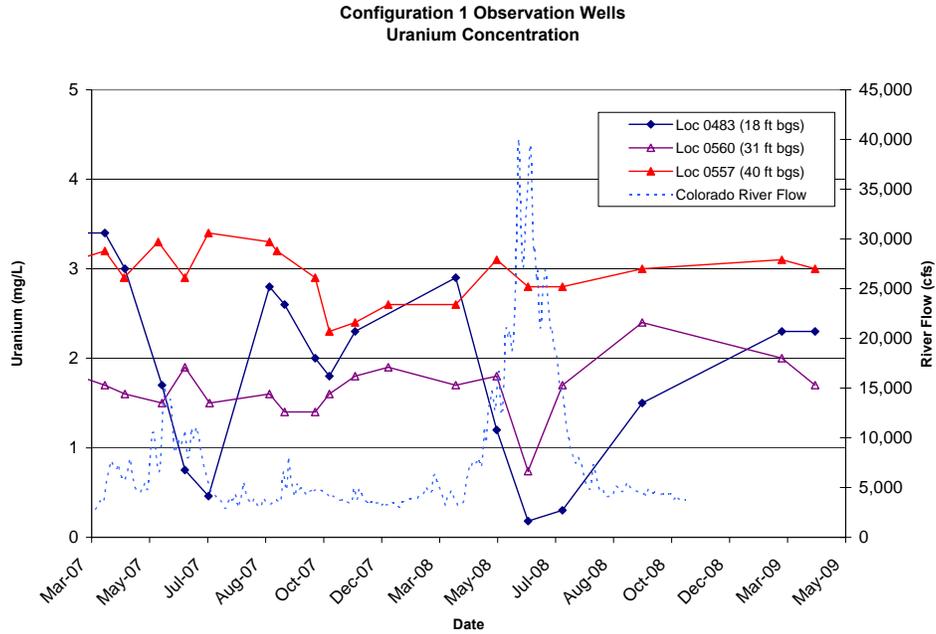


Figure 9. CF1 Observation Wells Time Versus Ammonia Total as N Concentration Plot

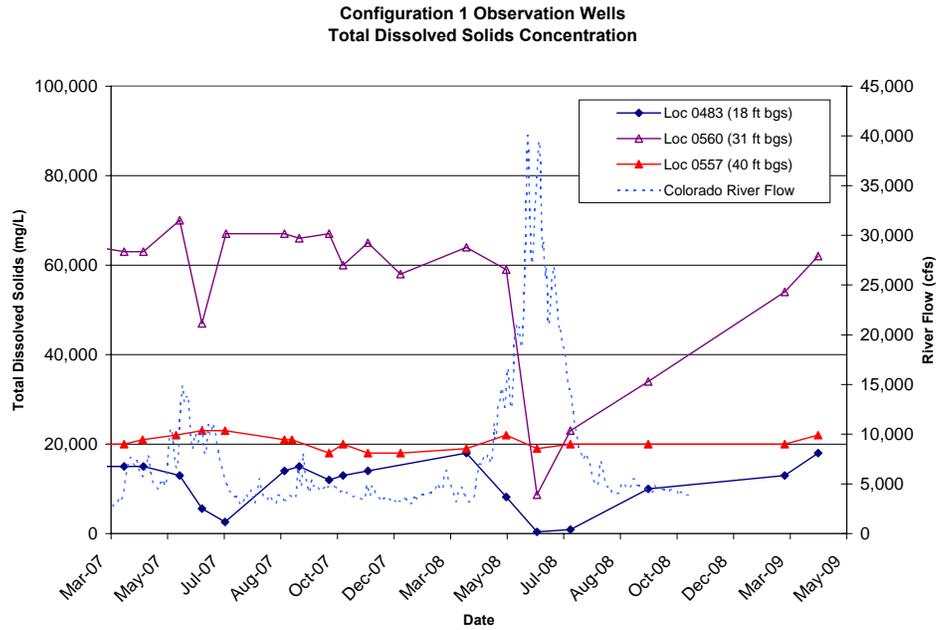


Figure 10. CF1 Observation Wells Time Versus TDS Concentration Plot

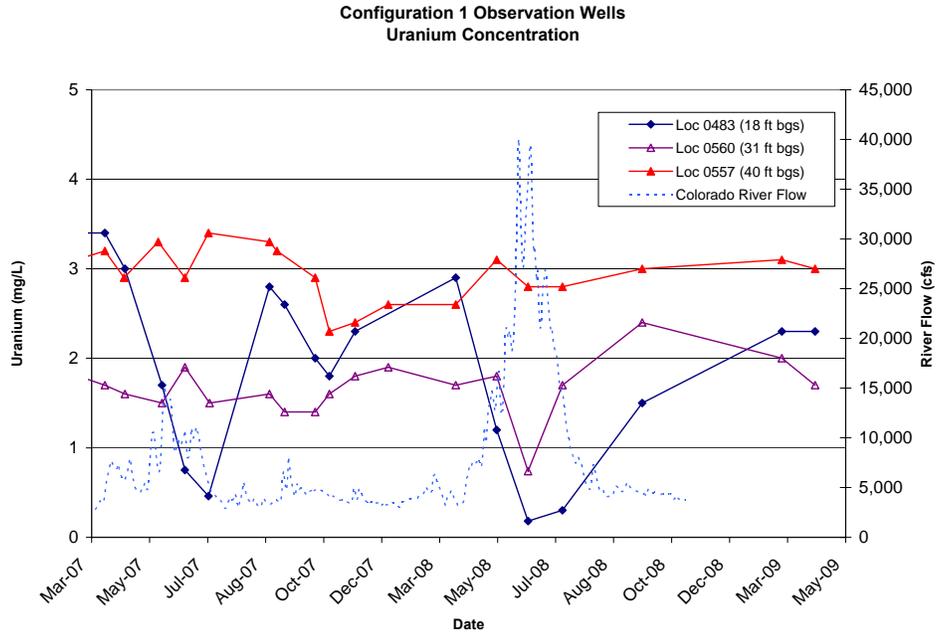


Figure 11. CF1 Observation Wells Time Versus Uranium Concentration Plot

CF1 Observation Wells 0403 and 0407

Samples were also collected from wells 0403 and 0407, which are located on the river bank within CF1, during the March 2009 sampling event. As shown in the time versus analyte concentration plots (Figures 12, 13, and 14), these concentrations have also continued to rebound to prerunoff levels, with well 0407 having the highest ammonia concentration. TDS and uranium concentrations from the two locations also rebounded to prerunoff levels.

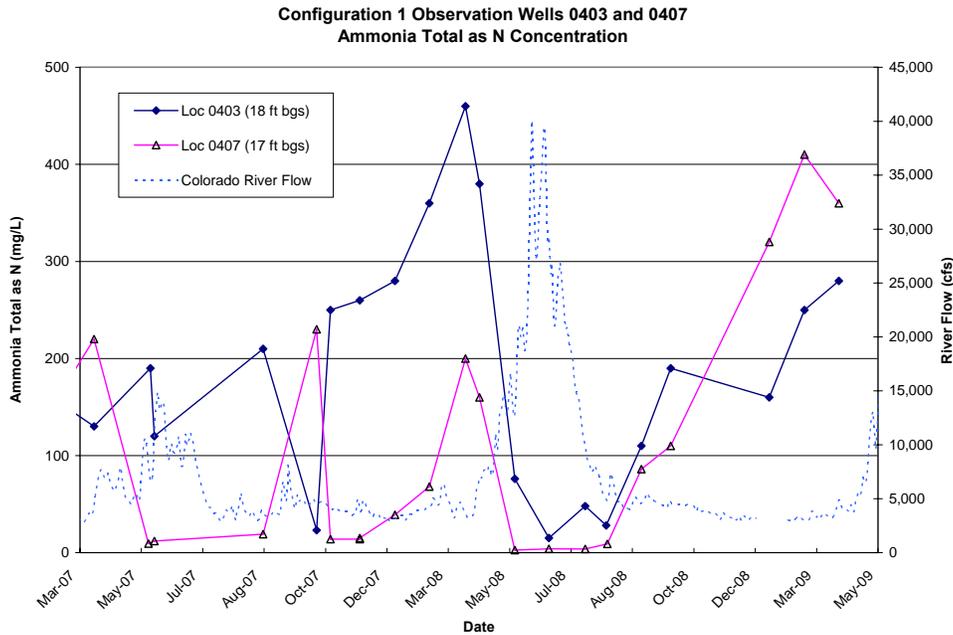


Figure 12. CF1 Observation Wells 0403 and 0407 Time Versus Ammonia Total as N Concentration Plot

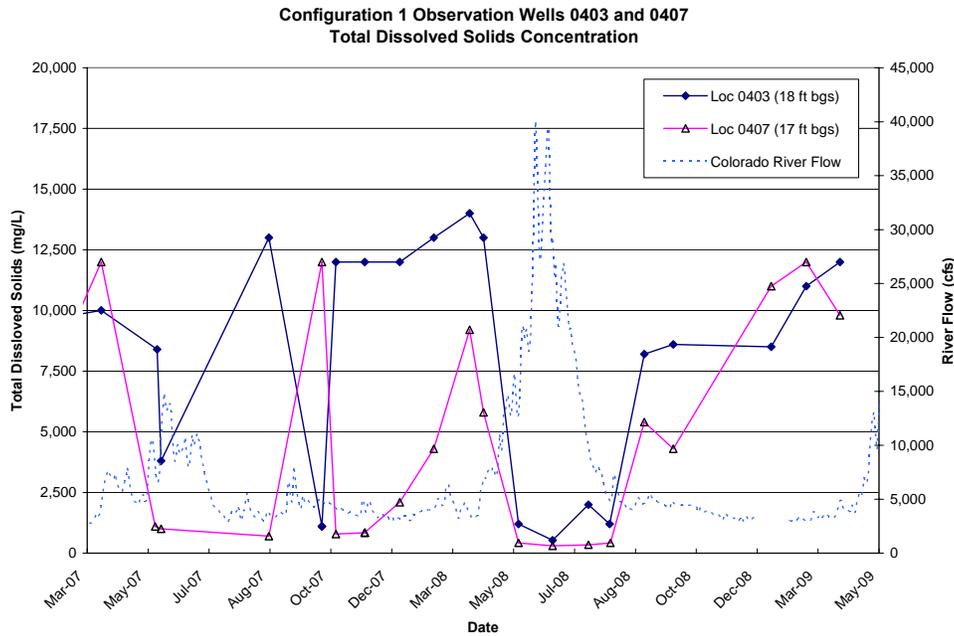


Figure 13. CF1 Observation Wells 0403 and 0407 Time Versus TDS Concentration Plot

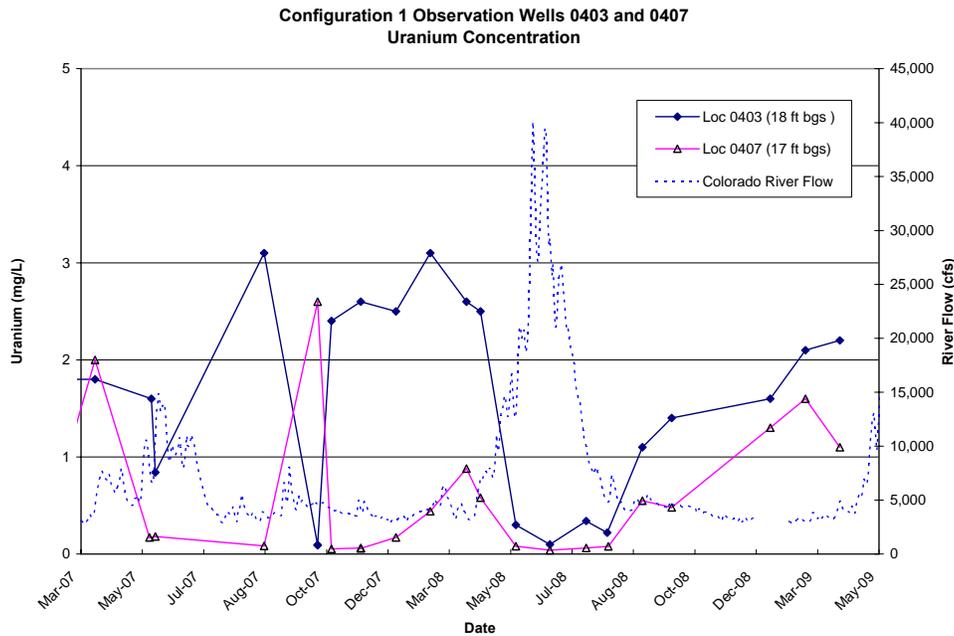


Figure 14. CF1 Observation Wells 0403 and 0407 Time Versus Uranium Concentration Plot

CF4

Of the indicator wells typically discussed in this summary for CF4, locations 0780 (28 ft bgs), 0786 (28 ft bgs), 0782 (33 ft bgs), and 0787 (36 ft bgs) were sampled during March 2009. Ammonia, TDS, and uranium concentration trends over the past 2 years are displayed in Figures 15, 16, and 17, respectively. Ammonia and TDS concentrations remained constant since February 2009 after generally increasing over the previous autumn, and uranium concentrations also leveled off after either decreasing or remaining consistent since autumn 2008.

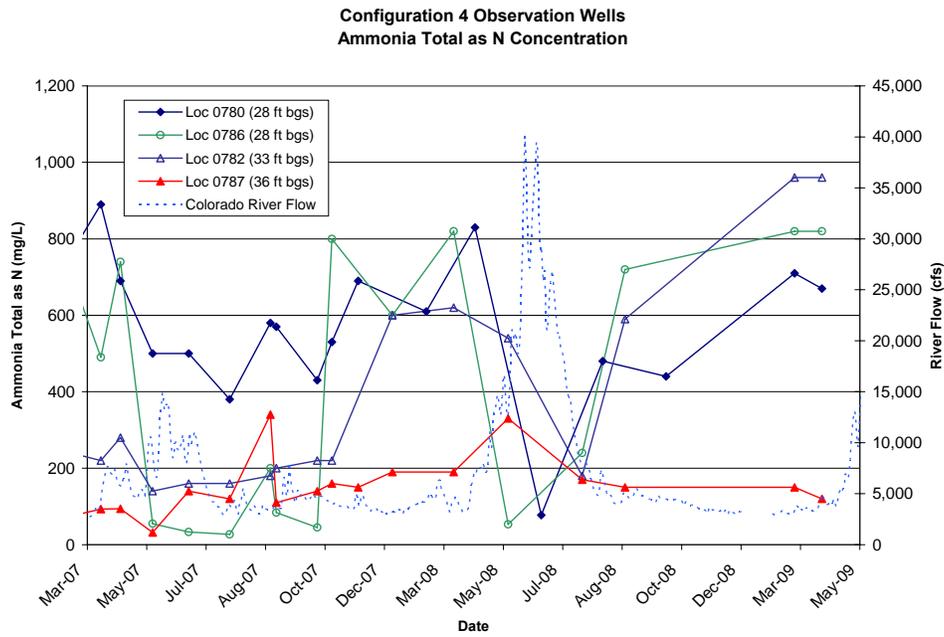


Figure 15. CF4 Observation Wells Time Versus Ammonia Total as N Concentration Plot

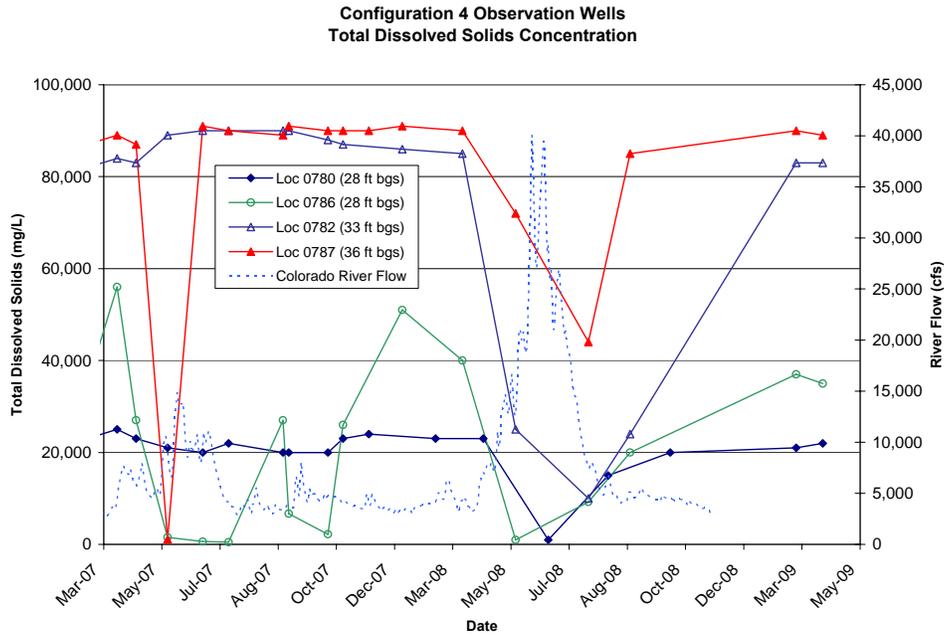


Figure 16. CF4 Observation Wells Time Versus TDS Concentration Plot

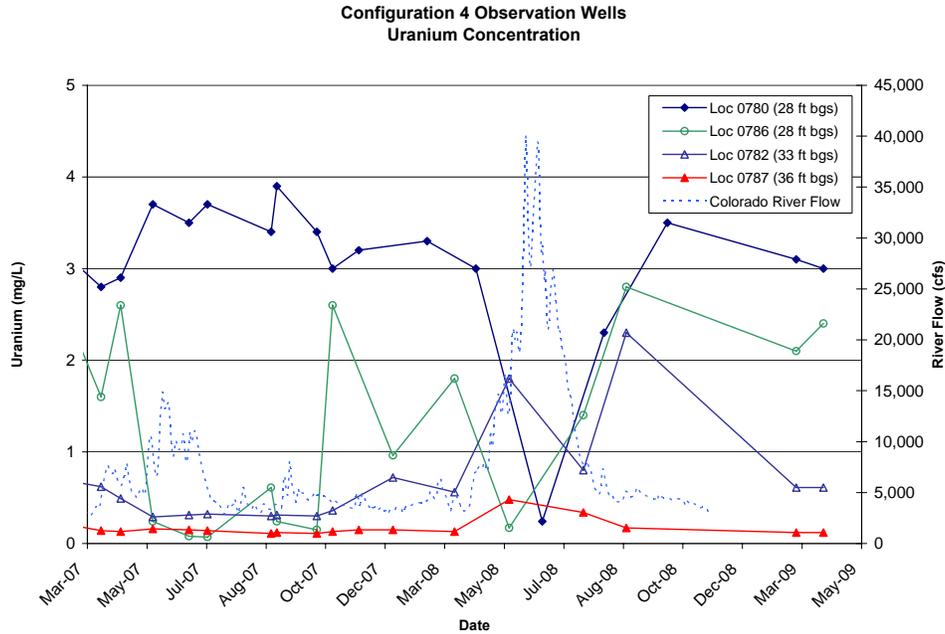


Figure 17. CF4 Observation Wells Time Versus Uranium Concentration Plot

Surface Water Sampling Results

Table 1 presents a summary of the ammonia concentrations associated with the surface water samples collected during this sampling event. For comparison purposes, the applicable state of Utah and federal criteria for both acute and chronic concentrations (along with the temperature and pH data used to calculate these concentrations) are provided.

Table 1. March 2009 Sampling Event Surface Water Ammonia Concentrations and Comparisons to State of Utah and Federal Criteria

Location	Date	Temp (°C)	pH	Ammonia Total as N (mg/L)	State/Federal AWQC-Acute Total as N (mg/L) ¹	State/Federal AWQC-Chronic Total as N (mg/L) ²
0239	3/18/09	10.5	8.18	2.4	3.83	1.79
0243	3/19/09	13.2	8.28	0.69	3.15	1.52
0245	3/17/09	20.4	8.67	1.1	1.47	0.55
0259	3/18/09	16.6	8.09	4	4.64	1.91
0274	3/16/09	20.6	7.81	69	8.11	2.23

AWQC = ambient water quality criteria; mg/L = milligrams per liter; Temp = temperature

¹State of Utah, Standards of Quality for Waters of the State (Effective May 1, 2008), Rule R317-2, Table 2.14.2, 1-Hour Average (Acute) Concentration of Total Ammonia as N (mg/L)

²State of Utah, Standards of Quality for Waters of the State (Effective May 1, 2008), Rule R317-2, Table 2.14.2, 30-Day Average (Chronic) Concentration of Total Ammonia as N (mg/L), Fish Early Life Stages Present

As shown in Table 1, surface water samples collected from three of the five locations during this sampling event (locations 0239, 0245, and 0259) exceeded the state or federal chronic criteria, and one sample (from location 0274) exceeded both the acute and chronic criteria. The locations from which these samples were collected were not considered as habitat areas, and the river flows (approximately 3,300 cubic feet per second [cfs]) were below the average base flow for this same time period (approximately 3,700 cfs). The side channel off CF1 was dry, and a sample from 0216 was not collected. This side channel becomes dry only under extremely low river flow conditions. Of particular note, the sample collected from 0274 was collected when this side

channel was closed off upriver and open downriver. Abundant salt crusts were exposed, and foam and wood debris were present. No fish were observed in this area.

Table 2 presents the uranium results from the surface water samples. As shown in this table, the sample from location 0274 exceeds the Uranium Mill Tailings Radiation Control Act (UMTRCA) Drinking Water Standard of 0.044 milligrams per liter.

Table 2. March 2009 Sampling Event Surface Water Uranium Concentrations and Comparisons to the UMTRCA Drinking Water Standard

Location	Date	Uranium (mg/L)	UMTRCA Drinking Water Standard for Uranium (mg/L) ¹
0239	3/18/09	0.025	0.044
0243	3/19/09	0.022	
0245	3/17/09	0.018	
0259	3/18/09	0.035	
0274	3/16/09	0.34	

¹The maximum concentration limit in the Environmental Protection Agency Ground Water Standards for uranium is 30 picocuries per liter, which is equal to 0.044 mg/L assuming uranium-234 and uranium-238 are in secular equilibrium.

1.3 Sampling and Analyses

Sampling and analyses were conducted in accordance with the *Moab UMTRA Project Operations, Maintenance, and Performance Monitoring Plan for the Interim Action Ground Water Treatment System*, April 2008 (DOE-EM/GJ1220). Although not listed here, the normal set of locations were sampled. Please refer to the attached trip report (Attachment 1) for specific sampled locations and an explanation of why some locations were not sampled, such as dry conditions at specific surface water locations.

The data validations indicate that the data meet the quality-control criteria specified for this project. An adequate number of duplicates were collected; since surface water samples are collected on dedicated equipment, no equipment blanks (EBs) were needed. All samples were analyzed within their prescribed holding times. No significant discrepancies were noted regarding sample shipping and receiving, preservation times, instrument calibration, method blanks (MBs), or matrix spikes (MSs), except as qualified or noted in the Laboratory Performance Assessment (Section 2.2).

There were 13 locations with 36 anomalous data points (all historic high results) in CF1 (0563, 0606, 0607, 0608, 0611, and 0612), CF2 (0239, 0591, 0615, and 0616), CF3 (0259), and CF4 (0274 and 0790) sampled during this sampling event. See the Anomalous Data Review Table (Section 3.2) for more details.

According to the USGS Cisco gaging station, the mean daily Colorado River flow rates varied between 3,250 and 4,870 cfs during this sampling period.

2.0 Data Assessment Summaries

This section contains the Water Sampling Field Activities Verification (Section 2.1), the Laboratory Performance Assessment (Section 2.2), the Field Analyses/Activities (Section 2.3), and Certification (Section 2.4).

2.1 Water Sampling Field Activities Verification

The field activities verification processes for these sampling events were documented. As the verification exhibits, all sampling was conducted following the applicable procedures. This verification is provided in Appendix A.

2.2 Laboratory Performance Assessment

General Information

Report Identification Number (RIN): 0903028

Sample Event: March 2009 Interim Action Well Field Monthly Sampling Event

Site(s): Moab, Utah

Laboratory: Paragon Analytics, Inc., Fort Collins, Colorado

Sample Data Group (SDG) Nos. 0903161 and 0903219

Analysis: Metals and Inorganics

Validator: Rachel Cowan

Review Date: May 16, 2009

This validation was performed according to the *Environmental Procedures Catalog* (STO 6), "Standard Practice for Validation of Laboratory Data," GT-9(P) (2006). The procedure was applied at Level 3, Data Deliverables Examination. The level 3 validation was performed on 100 percent of the samples, which included a review of the chain of custody (COC), case narratives, field and sample identifications, holding times, preservation, and cooler receipt. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 3.

Table 3. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	EPA 350.1	EPA 350.1
Chloride	MIS-A-039	SW-846 9056	SW-846 9056
Copper	MET-A-020	SW-846 3005A	SW-846 6010B
Manganese	G17	SW-846 3005A	SW-846 6010B
Selenium	G14	SW-846 3005A	SW-846 6020A
Sulfate	MIS-A-044	SW-846 9056	SW-846 9056
TDS	WIC-A-033	MCAWW 160.1	MCAWW 160.1
Uranium	G1	SW-846 3005A	SW-846 6020A

Data Qualifier Summary

Analytical results were qualified as listed in Table 4. Refer to Table 5 for an explanation of the data qualifiers applied.

Table 4. Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
0903161-1, -3, -4, -5, -7 through -11, -16 through -23, -26, -27, -28, -32 through -35	0239, 0245, 0259, 0274, 0562, 0563, 0565, 0590, 0591, 0605, 0606, 0607, 0608, 0611, 0612; 0615, 0616, 0690, 0691, 0692, 0790, 0791, 0792	All	J	P1
0903219-2 to -9, -19, -20, -31 through -35; 0903161-2 to -9, -19, -20, -31 through -34	0406, 0407, 0470, 0473, 0474, 0475, 0478, 0480, 0671, 0674, 0403, 0560, 0683; 0239, 0243, 0245, 0259, 0274, 0495, 0562, 0563, 0565, 0603, 0608, 0611, 0617	Ammonia	J	MS1
0903161-6, -12 through -17, -24, -25, -27, -29, -30, -31, -34	0495, 0597, 0598, 0599, 0603, 0605, 0606, 0617, 0618, 0691, 0696, 0725, 0726, 0792	Selenium	J	SD2
0903219- 24, -30	0683, 0787	Uranium	J	ISR1

J indicates results are estimated and becomes a UJ for analytical results below the detection limit.

Table 5. Reason Codes for Data Flags

Reason Code	Qualifier (Detects)	Qualifier (Nondetects)	Explanation
ISR1	J	UJ	Results for the affected analyte(s) are regarded as estimated (J) because the percent recovery for the initial or continuing calibration verification sample for the internal standard was not between 30 and 120%.
MS1	J	UJ	Results for the affected analyte(s) are regarded as estimated (J) because the MS sample was (a) from another client, (b) of dissimilar matrix, (c) a field blank or EB, or (d) not analyzed at the proper frequency as stated in the appropriate analytical method.
P1	J	J	Results for the affected analyte(s) are regarded as estimated (J) because the samples were received outside the temperature criteria.
SD2	J	N/A	Results for the affected analyte(s) are regarded as estimated (J) because the result of the sample used for serial dilution analysis is greater than or equal to 50 times (100 times for inductively coupled plasma-mass spectrometry) the practical quantitation limit, and the percent difference is greater than 10%.

Sample Shipping/Receiving

Paragon Analytics in Fort Collins, Colorado, received a total of 69 samples for RIN 0903028 in two shipments. SDG 0903161 of 34 samples arrived on March 20, 2009 (UPS tracking number 1Z5W1Y510192446148), and SDG 0903219 of 35 samples arrived on March 27, 2009 (UPS tracking number 1Z5W1Y510198537119). All sample groups were accompanied by COC forms. The COC forms were checked to confirm that all of the samples were listed on each form with sample collection dates and times and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents, including the COC forms and the sample tickets, had no errors or omissions except for the following.

The bottles containing sample 0903219-2 (location 0406) had a different collection time listed on the bottles (1620) than on the COC form (1610) and the sample ticket (1610). Three of the four bottles containing sample 0903219-30 (location 0787) had a different collection time listed on the bottles (1105) than on the COC form (1150) and the sample ticket (1150).

Preservation and Holding Times

SDG 0903161 was received intact in two coolers with the temperatures within the coolers ranging from 3.8 to 4.2°C, which exceeds requirements. All analyte results from the samples in the cooler with the temperature of 4.2°C were flagged for reason “P1.” SDG 0903219 was received intact in two coolers, and their temperatures ranged from 1.0 to 1.6°C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses. All samples were analyzed within the applicable holding times.

Laboratory Instrument Calibration

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for all analytes. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear curve. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed correctly in accordance with the cited methods. Calibration standards were prepared from independent sources. In addition, for inductively coupled plasma (ICP) analytes (manganese, copper, selenium, and uranium), reporting limit verifications (CRIs) verify the linearity of the calibration curve near the reporting limit (RL). For ICP-mass spectrometry (ICP-MS) analytes (selenium and uranium), instrument tuning and performance criteria are checked for mass calibration and resolution verifications. Also, for ICP-MS, internal standards are analyzed to indicate stability of the instruments.

Method SW-846 6010B, Copper and Manganese

Calibrations for copper and manganese were performed on April 2, 2009, and for manganese only on March 24, 2009. All calibrations used three calibration standards and a blank, resulting in calibration curves with correlation coefficient (r^2) values greater than 0.995. The copper intercept was negative and more than three times the method detection limit (MDL), but the copper result was greater than three times the absolute value of the intercept and so did not need to be qualified with a “J.” The calibration curve intercepts for manganese were positive, and their values were greater than three times the MDL.

Initial and continuing calibration verification (ICV and CCV) checks were made at the required frequency, resulting in two CCVs (April 2, 2009) and four CCVs (March 24, 2009) for copper analysis and six CCVs (April 2, 2009) for manganese. All calibration checks met the acceptance criteria, and the CRIs were within the acceptance range.

Method SW-846 6020A, Selenium and Uranium

The calibrations for the selenium analyses were performed on March 25 and March 31, 2009. The uranium calibrations were performed on March 23 and March 31, 2009. The initial calibrations for both analytes were performed using eight calibration standards and one blank, resulting in calibration curves with r^2 values greater than 0.995. The absolute value of the calibration curve intercept for selenium was less than three times the MDL. Although the calibration curve intercepts for uranium were positive, their absolute values were greater than three times the MDL. Therefore, all uranium results from all SDGs were checked to confirm that all results were greater than three times the absolute value of the intercept; however, none needed to be flagged for this reason.

ICV and CCV checks were made at the required frequency, resulting in three CCVs (March 25, 2009) and two CCVs (March 31, 2009) for selenium and six CCVs (March 23, 2009) and five CCVs (March 31, 2009) for uranium. All calibration checks met the acceptance criteria. CRIs were made at the required frequency to verify the linearity of the calibration curve near the RL, and the CRIs were within the acceptance criteria range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries were stable and within acceptable ranges, except for the rhenium CCV-10 in SDG 0903219. Rhenium is the internal standard for uranium in this SDG. The uranium results associated with the failed internal standard were “J”-flagged for reason “IRS1.”

Method EPA 350.1, Ammonia

Initial calibration for ammonia was performed using six calibration standards and a blank on March 26 and April 1, 2009. The calibration curves had r^2 values greater than 0.995 and intercepts less than three times the MDL. ICV and CCV checks were made at the required frequency, resulting in six CCVs (March 26, 2009) and five CCVs (April 1, 2009). All calibration check results were within the acceptance criteria.

Method SW-846 9056, Chloride and Sulfate

Initial calibrations for chloride and sulfate were performed using five calibration standards and a blank on March 25, 2009. The calibration curve r^2 values were greater than 0.995, and the absolute values of the intercepts were less than three times the MDL. ICV and CCV check standards were prepared from independent sources. ICV and CCV checks were made at the required frequency, resulting in four CCVs (March 25, 2009), one CCV (March 27, 2009), five CCVs (March 30, 2009), three CCVs (March 31, 2009), and one CCV (April 1, 2009). All calibration checks met the acceptance criteria.

Method MCAWW 160.1, TDS

There is no initial or continuing calibration requirement associated with the determination of TDS.

Method and Calibration Blanks

MBs are analyzed to assess any contamination that may have occurred during sample preparation. Both initial calibration and continuing calibration blanks (CCBs) are analyzed to assess instrument contamination prior to and during sample analysis. Detected sample results associated with blanks results greater than the MDL or instrument detection limit (IDL) (depending on method requirements) were “U”-qualified when the detections were less than five times the blank concentration. Nondetects were not qualified.

All manganese CCBs in SDG 0903161 and one in SDG 0903219 had results that were greater than the MDL. However, the CCB results were greater than five times the associated blanks’ concentration, so no results were qualified. This same situation held true for the copper CCBs in SDG 0903219.

All selenium and uranium CCB results from both SDGs were greater than the respective MDLs/IDLs. However, all results were greater than five times the associated blanks’ concentrations, so no results were qualified.

Some ammonia CCBs results in SDG 0903161 were greater than the IDL, and all ammonia CCB results in SDG 0903219 were negative and had absolute values greater than the IDL. However, the absolute value of the ammonia results from these SDGs were all greater than five times the associated blanks’ concentrations, so no ammonia results were flagged for this reason.

Some chloride CCBs in SDG 0903161 and some chloride and sulfate CCBs in SDG 0903219 were also greater than the associated IDLs; however, all affected results were greater than five times the related blanks’ concentrations, so no results were qualified.

ICP Interference Check Sample Analysis

ICP interference check samples (ICSA and ICSAB) are analyzed to verify the instrument interelement and background correction factors. For the manganese results in SDG 0903161 and the copper and manganese results in SDG 0903219, interelement interference was not a factor based on the results of aluminum, calcium, iron, and magnesium being lower than the corresponding amounts in the ICSA standard. The recovery of the ICSAB samples was acceptable as well.

For the uranium and selenium analyses in all SDGs, the ICSA values for calcium, magnesium, aluminum, and iron were not provided for verification of the instrument’s interelement and background correction factors. The percent recoveries of the ICSAB samples were provided and were acceptable for all uranium and selenium analyses. All other check sample results met the acceptance criteria, so no qualification of the sample results was necessary.

MS Analysis

MS samples were prepared and analyzed for all analytes as a measure of method performance in the sample matrix. Laboratory spike standards are prepared from independent sources. The spike recoveries met the recovery and precision criteria for all analytes, with the following exception.

There were not enough MSs for ammonia (only two in SDG 0903161 and two in SDG 0903219), although the method states that one MS must be analyzed per 10 field samples. Therefore, some samples in each of these SDGs were qualified “J” for this reason, as shown in Table 3. In

addition, MS recoveries could not be evaluated for one of the ammonia MS samples in SDG 0903219 because the analyte concentration in the native sample was above the analytical range. Based on validation protocol, qualification requirements are not applicable when the native sample concentration exceeds four times the spike concentration. Therefore, no qualifiers were applied to samples associated with this unanalyzed MS.

Laboratory Replicate Analysis

The laboratory replicate results demonstrate acceptable laboratory precision. The relative percent difference (RPD) values for the reported laboratory replicate sample (RS) and the MS results for all other analytes were less than 20 percent for results greater than five times the RL with the following exceptions.

The RPD could not be determined for one of the ammonia MSDs in SDG 0903161 because the analyte concentrations in the native sample were above the analytical range. However, four field duplicate samples were analyzed (samples 0903219-31, -32, -33, and -34) and met the precision requirements. Therefore, no qualification was required.

There were not enough RSs for the TDS samples in SDG 0903161. However, there were enough field duplicate samples analyzed; therefore, no qualification was required.

Field Duplicate Analysis

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory replicates, which measure only laboratory performance. Duplicate samples were collected from locations 0683 (0903219-31), 0406 (0903219-32), 0560 (0903219-33), and 0403 (0903219-34) in the March 2009 sampling event. The duplicate results met the Environmental Protection Agency (EPA) recommended laboratory duplicate criteria of less than 20 RPD for results that are greater than five times the RL.

Laboratory Control Sample

Laboratory control samples (LCSs) provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. LCS results were acceptable for all analyses with the following exceptions.

LCSs were not reported for copper, manganese, or uranium. As a standard practice, Paragon Analytics does not prepare LCSs for samples that were field-filtered and acidified and run directly on the instrument without any additional sample preparation. Per national environmental laboratory accreditation requirements, an MS may be used in place of an LCS provided the acceptance criteria are as stringent. Therefore, no qualification was required because of lack of LCS results because all of the MSs results for copper, manganese, and uranium were acceptable. See MS Analysis section for required qualification.

Metals Serial Dilution

Serial dilution (SD) samples were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. ICP-MS SD data are evaluated when the concentration of the undiluted sample is greater than 100 times the RL. ICP-atomic emission spectroscopy SD data are evaluated when the concentration of the undiluted sample is greater than 50 times the RL. All evaluated SD data were acceptable with the following exception.

The SD sample selected as the quality-control sample for the selenium analytical run in SDG 0903161 had a percent recovery of 20 percent, and the limit was 10 percent. Therefore, all associated selenium results were “J”-flagged for reason “SD2” in this SDG.

Detection Limits/Dilutions

Dilutions were prepared in a consistent and acceptable manner when dilutions were required. The required detection limits were achieved for all analytes.

Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

Electronic Data Deliverable Files

The electronic data deliverable (EDD) files arrived on April 1 (SDG 0903161) and April 10, 2009 (SDG 0903219). The contents of the EDD were manually examined to ensure all and only the requested data were delivered in compliance with requirements and that the sample results accurately reflected the data contained in the sample data package, with the following exceptions.

For the case narrative of SDG 0903219, only one quality-control sample is listed for manganese. However, the rest of the EDD lists two quality-control samples for manganese. For the selenium results of the IS CAB (on page 164 of the report from the laboratory), “uranium only” is hand written. Paragon Analytic Laboratories has been notified about these potential discrepancies.

2.3 Field Analyses/Activities

The following information summarizes the field analyses and activities for the March 2009 sampling event.

Field Activities

All monitor wells were purged and sampled using the low-flow sampling method; this method was not used at extraction wells. Four duplicate samples were collected. There are no established regulatory criteria for the evaluation of field duplicate samples; therefore, EPA guidance for laboratory duplicates (which is conservative for field duplicates) was used to assess the precision of the field duplicates. All results met the criteria of ± 20 RPD and are considered acceptable.

2.4 Certification

Results were reported in correct units for all analytes requested. Appropriate contract-required laboratory qualifiers and target analyte lists were used. The RLs were met when possible, or an explanation of why they were not met was given in the laboratory case narrative. All analytical quality-control criteria were met except as qualified on the Ground Water Quality Data by Parameter, Surface Water Quality by Parameter, or equipment/trip blank database printouts. The meaning of data qualifiers is defined on the database printouts or defined in the EPA *Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media Multi-Concentration* (ILMO2.0) (1991). All data in this package are considered validated and may be treated as final results.

3.0 Data Presentation

This section contains the Minimums and Maximums Report (Section 3.1), the Anomalous Data Review (Section 3.2), tables containing the Water Quality Data and Water Level Data (Sections 3.3 and 3.4, respectively), and the Blanks Report (Section 3.5).

3.1 Minimums and Maximums Report

The Minimums and Maximums Report (see Appendix B) is generated by the Sample Management System used to query the SEEPro database. The DataVal program compares the new data set with historical data and lists all new data that fall outside the historical data range. Values listed in the reports are further screened, and the results are not considered anomalous if: identified low concentrations are the result of low detection limits; the concentration detected is less or more than 50 percent of historical minimum or maximum values; or there were fewer than five historical samples for comparison.

3.2 Anomalous Data Review

Any results that are considered anomalous based on the Minimums and Maximums Report are listed below.

Location No.	Analyte	Type of Anomaly	Disposition
0239	Ammonia	High	Low river stage, high analyte concentration, evidence of ground water discharge
0259	Ammonia	High	Low river stage, high analyte concentration, evidence of ground water discharge
0259	Uranium	High	Low river stage, high analyte concentration, evidence of ground water discharge
0274	Ammonia	High	Low river stage, high analyte concentration, evidence of ground water discharge
0274	Chloride	High	Low river stage, high analyte concentration, evidence of ground water discharge
0274	Manganese	High	Low river stage, high analyte concentration, evidence of ground water discharge
0274	Sulfate	High	Low river stage, high analyte concentration, evidence of ground water discharge
0274	TDS	High	Low river stage, high analyte concentration, evidence of ground water discharge
0274	Uranium	High	Low river stage, high analyte concentration, evidence of ground water discharge
0563	Ammonia	High	Low river stage, high analyte concentration, evidence of ground water discharge
0591	Manganese	High	Low river stage, high analyte concentration, evidence of ground water discharge
0606	Chloride	High	Low river stage, high analyte concentration, evidence of ground water discharge
0606	Sulfate	High	Low river stage, high analyte concentration, evidence of ground water discharge
0607	Chloride	High	Low river stage, high analyte concentration, evidence of ground water discharge
0607	Manganese	High	Low river stage, high analyte concentration, evidence of ground water discharge
0607	Sulfate	High	Low river stage, high analyte concentration, evidence of ground water discharge
0607	TDS	High	Low river stage, high analyte concentration, evidence of ground water discharge

Location No.	Analyte	Type of Anomaly	Disposition
0608	Ammonia	High	Low river stage, high analyte concentration, evidence of ground water discharge
0608	Chloride	High	Low river stage, high analyte concentration, evidence of ground water discharge
0608	Manganese	High	Low river stage, high analyte concentration, evidence of ground water discharge
0608	Sulfate	High	Low river stage, high analyte concentration, evidence of ground water discharge
0608	TDS	High	Low river stage, high analyte concentration, evidence of ground water discharge
0608	Uranium	High	Low river stage, high analyte concentration, evidence of ground water discharge
0611	Chloride	High	Low river stage, high analyte concentration, evidence of ground water discharge
0611	Sulfate	High	Low river stage, high analyte concentration, evidence of ground water discharge
0611	Uranium	High	Low river stage, high analyte concentration, evidence of ground water discharge
0612	Ammonia	High	Low river stage, high analyte concentration, evidence of ground water discharge
0612	Sulfate	High	Low river stage, high analyte concentration, evidence of ground water discharge
0612	Uranium	High	Low river stage, high analyte concentration, evidence of ground water discharge
0615	Manganese	High	Low river stage, high analyte concentration, evidence of ground water discharge
0616	Uranium	High	Low river stage, high analyte concentration, evidence of ground water discharge
0690	Ammonia	High	Low river stage, high analyte concentration, evidence of ground water discharge
0690	Chloride	High	Low river stage, high analyte concentration, evidence of ground water discharge
0690	Manganese	High	Low river stage, high analyte concentration, evidence of ground water discharge
0690	TDS	High	Low river stage, high analyte concentration, evidence of ground water discharge
0790	Uranium	High	Low river stage, high analyte concentration, evidence of ground water discharge

3.3 Water Quality Data

All water quality data are presented in Appendix C.

3.4 Water Level Data

All water level data are presented in Appendix D.

3.5 Blanks Report

All samples were collected on dedicated sampling equipment; therefore, it was not necessary to collect an EB.

Appendix A.
Water Sampling Field Activities Verification

Appendix A. Water Sampling Field Activities Verification

Sampling Event / RIN	March 2009/RIN 0903028	Date(s) of Water Sampling	March 16-26, 2009
Date(s) of Verification	May 18, 2009	Name of Verifier	Rachel Cowan

	Response (Yes, No, NA)	Comments
1. Is the Sampling Analysis Plan the primary document directing field procedures? List other documents, standard operating procedures, instructions.	Yes	
	NA	
2. Were the sampling locations specified in the planning documents sampled?	Yes	
3. Was a pretrip calibration conducted as specified in the afore-mentioned documents?	Yes	
4. Was an operational check of the field equipment conducted twice daily?	Yes	
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, electrical conductivity, pH, turbidity, dissolved oxygen, oxidation reduction potential) of field measurements taken as specified?	Yes	
6. Was the category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well: Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	
Was the flow rate less than 500 milliliters per minute?	Yes	
If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	NA	

Appendix A. Water Sampling Field Activities Verification (continued)

- | | |
|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8. Were the following conditions met when purging a Category II well: | |
| Was the flow rate less than 500 milliliters per minute? | Yes _____ |
| Was one pump/tubing volume removed prior to sampling? | Yes _____ |
| 9. Were duplicates taken at a frequency of one per 20 samples? | Yes There were 69 samples, and four duplicates were collected. _____ |
| 10. Were EBs taken at a frequency of one per 20 samples that were collected with nondedicated equipment? | NA All samples were collected on dedicated equipment; therefore, it was not necessary to collect an EB. _____ |
| 11. Were trip blanks prepared and included with each shipment of volatile organic compound samples? | NA _____ |
| 12. Were quality-control samples assigned a fictitious site identification number? | Yes _____ |
| Was the true identity of the samples recorded on the quality assurance sample log? | Yes _____ |
| 13. Were samples collected in the containers specified? | Yes _____ |
| 14. Were samples filtered and preserved as specified? | Yes _____ |
| 15. Were the number and types of samples collected as specified? | Yes _____ |
| 16. Were COC records completed, and was sample custody maintained? | Yes _____ |
| 17. Are field data sheets signed and dated by both team members? | Yes _____ |
| 18. Was all other pertinent information documented on the field data sheets? | Yes _____ |
| 19. Was the presence or absence of ice in the cooler documented at every sample location? | No The presence or absence of ice was not documented for the well 0791 sample; however, the samples taken before and after this sample were documented with ice in the cooler. _____ |
| 20. Were water levels measured at the locations specified in the planning documents? | Yes _____ |

Appendix B.
Minimums and Maximums Report

Appendix B. Minimums and Maximums Report

Data Validation Minimums and Maximums Report - No Field Parameters

Laboratory: PARAGON (Fort Collins, CO)

RIN: 0903028

Comparison: All Historical Data

Report Date: 4/23/2009

Site Code	Location Code	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Count	
				Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	N	N Below Detect		
MOA01	0239	03/18/2009	Ammonia Total as N	2.4		0.99		0.043	J	U	20	9	
MOA01	0239	03/18/2009	Uranium	0.025		0.024		0.0034		J	20	0	
MOA01	0243	03/19/2009	Uranium	0.022		0.021	J	0.0033		J	27	1	
MOA01	0259	03/18/2009	Ammonia Total as N	4		0.91		0.067	J	U	22	13	
MOA01	0259	03/18/2009	Chloride	160		150		41		J	22	0	
MOA01	0259	03/18/2009	Uranium	0.035		0.0171		0.0033		J	22	1	
MOA01	0274	03/16/2009	Ammonia Total as N	69		3.65		0.074	J	U	16	5	
MOA01	0274	03/16/2009	Chloride	940		198	J	36		UJ	16	1	
MOA01	0274	03/16/2009	Manganese	0.83		0.216		0.0025	B	J	12	3	
MOA01	0274	03/16/2009	Sulfate	1300		320	J	110			16	0	
MOA01	0274	03/16/2009	Total Dissolved Solids	3400		1040		330			16	0	
MOA01	0274	03/16/2009	Uranium	0.34		0.0412		0.0023		J	16	1	
MOA01	0406	03/25/2009	Sulfate	3800		7616.9		4100			13	0	
MOA01	0406	03/25/2009	Sulfate	3900		7616.9		4100			13	0	
MOA01	0563	03/17/2009	Ammonia Total as N	300		142	FQ	0.1	U		31	1	
MOA01	0563	03/17/2009	Total Dissolved Solids	7600		5870	FQ	420		FQ	32	0	
MOA01	0591	03/18/2009	Manganese	4.2		2.6		0.272		FQ	18	0	
MOA01	0598	03/19/2009	Selenium	0.0076		0.089	F	0.0078		J	13	0	
MOA01	0603	03/17/2009	Sulfate	7300		7200	QF	1700		J	23	0	

Appendix B. Minimums and Maximums Report (continued)

Data Validation Minimums and Maximums Report - No Field Parameters

Laboratory: PARAGON (Fort Collins, CO)

RIN: 0903028

Comparison: All Historical Data

Report Date: 4/23/2009

Site Code	Location Code	Sample Date	Analyte	Current		Historical Maximum		Historical Minimum			Count	
				Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	N	N Below Detect	
MOA01	0603	03/17/2009	Uranium	1.9		1.8	FQ	0.0108		FQ	21	0
MOA01	0605	03/18/2009	Ammonia Total as N	690		640	QF	57.1		QF	13	0
MOA01	0605	03/18/2009	Chloride	3700		2700	QF	86.5		JQF	13	0
MOA01	0605	03/18/2009	Manganese	1.8		1.5		0.0454	E	QF	6	0
MOA01	0605	03/18/2009	Uranium	1.6		1.2	QF	0.17		QF	13	0
MOA01	0606	03/17/2009	Ammonia Total as N	600		500		52.5		QF	19	0
MOA01	0606	03/17/2009	Chloride	5400		3000	J	2	U	QF	21	2
MOA01	0606	03/17/2009	Sulfate	8400		5420	QF	290		J	21	0
MOA01	0606	03/17/2009	Total Dissolved Solids	18000		12000		750		J	21	0
MOA01	0606	03/17/2009	Uranium	1.8		1.2		0.0187	B	F	18	0
MOA01	0607	03/17/2009	Ammonia Total as N	340		240		38.1		QF	10	0
MOA01	0607	03/17/2009	Chloride	4100		2600		83.1		UQF	10	1
MOA01	0607	03/17/2009	Manganese	1.7		0.68		0.0043	B	UQF	10	1
MOA01	0607	03/17/2009	Sulfate	5700		2800		175		QF	10	0
MOA01	0607	03/17/2009	Total Dissolved Solids	13000		7700		695		QF	10	0
MOA01	0608	03/17/2009	Ammonia Total as N	560		150	QF	4.8		QF	13	0
MOA01	0608	03/17/2009	Chloride	4800		1300	QF	220		QF	13	0
MOA01	0608	03/17/2009	Manganese	1.9		0.177	QF	0.0813	N	FQ	7	0
MOA01	0608	03/17/2009	Sulfate	6500		1500	F	240		QF	13	0

Appendix B. Minimums and Maximums Report (continued)

Data Validation Minimums and Maximums Report - No Field Parameters

Laboratory: PARAGON (Fort Collins, CO)

RIN: 0903028

Comparison: All Historical Data

Report Date: 4/23/2009

Site Code	Location Code	Sample Date	Analyte	Current		Historical Maximum		Historical Minimum			Count	
				Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	N	N Below Detect	
MOA01	0608	03/17/2009	Total Dissolved Solids	15000		4300	QF	1000	QF	13	0	
MOA01	0608	03/17/2009	Uranium	1.3		0.39	QF	0.00068	F	12	0	
MOA01	0611	03/17/2009	Chloride	290		184	FQ	61.3	JQF	12	0	
MOA01	0611	03/17/2009	Sulfate	750		446	FQ	165	F	12	0	
MOA01	0611	03/17/2009	Total Dissolved Solids	1700		1210	FQ	502	F	12	0	
MOA01	0611	03/17/2009	Uranium	0.048		0.03		0.000019	B J	12	0	
MOA01	0612	03/17/2009	Ammonia Total as N	69		22	F	0.427	QF	13	0	
MOA01	0612	03/17/2009	Chloride	650		540	F	60.2	F	13	0	
MOA01	0612	03/17/2009	Manganese	1.6		1.51	N FQ	0.439	F	7	0	
MOA01	0612	03/17/2009	Sulfate	1900		1200	F	157	F	13	0	
MOA01	0612	03/17/2009	Total Dissolved Solids	3800		3000	F	479	F	13	0	
MOA01	0612	03/17/2009	Uranium	0.36		0.18	F	0.0000059	U J	13	1	
MOA01	0615	03/18/2009	Ammonia Total as N	96		84	QF	1.9		12	0	
MOA01	0615	03/18/2009	Chloride	580		510	QF	61.8	QF	13	0	
MOA01	0615	03/18/2009	Manganese	3.5		1.74	N FQ	0.87		6	0	
MOA01	0615	03/18/2009	Sulfate	2100		1600	QF	156	QF	13	0	
MOA01	0615	03/18/2009	Total Dissolved Solids	4000		3500	QF	484	H QF	13	0	
MOA01	0615	03/18/2009	Uranium	0.42		0.41	QF	0.0000059	U J	11	1	
MOA01	0616	03/18/2009	Manganese	1.2		0.92		0.19		6	0	

Appendix B. Minimums and Maximums Report (continued)

Data Validation Minimums and Maximums Report - No Field Parameters

Laboratory: PARAGON (Fort Collins, CO)

RIN: 0903028

Comparison: All Historical Data

Report Date: 4/23/2009

Site Code	Location Code	Sample Date	Analyte	Current		Historical Maximum		Historical Minimum		Count		
				Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	Result	Qualifiers Lab Data	N	N Below Detect	
MOA01	0616	03/18/2009	Uranium	0.88		0.39		0.00000 59	U	J	13	1
MOA01	0675	03/25/2009	Manganese	4.9		4.6		0.73			8	0
MOA01	0690	03/18/2009	Uranium	2.9		2.8	QF	0.79			9	0
MOA01	0691	03/18/2009	Manganese	4.1		3.91	FQ	0.84			17	0
MOA01	0725	03/19/2009	Selenium	0.00026		0.0977	QF	0.00043		J	14	1
MOA01	0790	03/16/2009	Ammonia Total as N	720		240	FQ	0.1	U	J	13	1
MOA01	0790	03/16/2009	Chloride	6600		1900	FQ	38			13	0
MOA01	0790	03/16/2009	Manganese	6.2		3.5	FQ	0.04		J	11	1
MOA01	0790	03/16/2009	Sulfate	9000		6000	FQ	120		J	13	0
MOA01	0790	03/16/2009	Total Dissolved Solids	24000		12000	FQ	380			13	0
MOA01	0790	03/16/2009	Uranium	2.9		1.6	FQ	0.011		J	13	0
MOA01	0791	03/16/2009	Chloride	8100		5500	FQ	90		J	15	0
MOA01	0791	03/16/2009	Manganese	6.8		6.5		0.035		F	12	0
MOA01	0791	03/16/2009	Total Dissolved Solids	26000		23000	FQ	660		FJ	15	0
MOA01	0792	03/16/2009	Uranium	0.19		1.6	QF	0.32		J	14	0

Analyte concentrations presented in blue text represent the historical minimum or maximum value exceeded by the concentration presented in red, which is associated with this current sampling event.

Appendix B. Minimums and Maximums Report (continued)

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

* Replicate analysis not within control limits.
> Result above upper detection limit.
A Tentatively identified compound is a suspected aldol-condensation product.
B Inorganic: Result is between the IDL and contract-required detection limit. Organic: Analyte also found in MB.
D Analyte determined in diluted sample.
E Inorganic: Estimate value because of interference; see case narrative.
H Holding time expired; value suspect.
I Increased detection limit due to required dilution.
J Estimated
N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound.
P > 25% difference in detected pesticide or Aroclor concentrations between two columns.
U Analytical result below detection limit.
W Postdigestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z Laboratory defined qualifier; see case narrative.

DATA QUALIFIERS:

F Low-flow sampling method used. G Possible grout contamination, pH > 9. J Estimated value.
L Less than three bore volumes purged prior to sampling. Q Qualitative result due to sampling technique. R Unusable result.
U Parameter analyzed for but was not detected. X Location is undefined.

QA QUALIFIER:

Validated according to quality assurance guidelines.

Appendix C.
Water Quality Data

Appendix C. Water Quality Data

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)		Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	Lab	Data QA					
Alkalinity, Total (As CaCO3)	mg/L	0239	SL	03/18/2009	0001	0.17	- 0.17	112		#		
Alkalinity, Total (As CaCO3)	mg/L	0243	SL	03/19/2009	0001	0.25	- 0.25	162		#		
Alkalinity, Total (As CaCO3)	mg/L	0245	SL	03/17/2009	0001	0.33	- 0.33	130		#		
Alkalinity, Total (As CaCO3)	mg/L	0259	SL	03/18/2009	0001	0.17	- 0.17	220		#		
Alkalinity, Total (As CaCO3)	mg/L	0274	SL	03/16/2009	0001	0.42	- 0.42	276		#		
Alkalinity, Total (As CaCO3)	mg/L	0403	WL	03/24/2009	0001	18	- 18	680		#		
Alkalinity, Total (As CaCO3)	mg/L	0406	WL	03/25/2009	0001	13.12	- 18.04	512		#		
Alkalinity, Total (As CaCO3)	mg/L	0407	WL	03/24/2009	0001	17	- 17	522		#		
Alkalinity, Total (As CaCO3)	mg/L	0470	WL	03/24/2009	0001	10.3	- 19.7	958		#		
Alkalinity, Total (As CaCO3)	mg/L	0473	WL	03/24/2009	0001	10.3	- 19.7	840		#		
Alkalinity, Total (As CaCO3)	mg/L	0474	WL	03/24/2009	0001	10.3	- 19.7	872		#		
Alkalinity, Total (As CaCO3)	mg/L	0475	WL	03/24/2009	0001	10.3	- 19.7	802		#		
Alkalinity, Total (As CaCO3)	mg/L	0478	WL	03/24/2009	0001	9.6	- 23.9	818		#		
Alkalinity, Total (As CaCO3)	mg/L	0480	WL	03/24/2009	0001	18	- 18	970		#		
Alkalinity, Total (As CaCO3)	mg/L	0483	WL	03/24/2009	0001	18	- 18	820		#		
Alkalinity, Total (As CaCO3)	mg/L	0493	WL	03/25/2009	0001	45	- 55	1258		#		
Alkalinity, Total (As CaCO3)	mg/L	0495	WL	03/19/2009	0001	4.6	- 5.6	900		#		
Alkalinity, Total (As CaCO3)	mg/L	0547	TS	03/26/2009	0001	0	- 0	758		#		
Alkalinity, Total (As CaCO3)	mg/L	0557	WL	03/24/2009	0001	40	- 40	910		#		
Alkalinity, Total (As CaCO3)	mg/L	0560	WL	03/24/2009	0001	31	- 31	516		#		
Alkalinity, Total (As CaCO3)	mg/L	0562	WL	03/17/2009	0001	1.3	- 2.3	334		#		
Alkalinity, Total (As CaCO3)	mg/L	0563	WL	03/17/2009	0001	4.6	- 5.6	328		#		
Alkalinity, Total (As CaCO3)	mg/L	0565	WL	03/17/2009	0001	4	- 5	90		#		
Alkalinity, Total (As CaCO3)	mg/L	0583	WL	03/25/2009	0001	18	- 18	882		#		
Alkalinity, Total (As CaCO3)	mg/L	0588	WL	03/25/2009	0001	34	- 34	900		#		
Alkalinity, Total (As CaCO3)	mg/L	0589	WL	03/25/2009	0001	52	- 52	726		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data	QA					
Alkalinity, Total (As CaCO3)	mg/L	0590	WL	03/17/2009	0001	1	-	2	520		#		
Alkalinity, Total (As CaCO3)	mg/L	0591	WL	03/18/2009	0001	3.9	-	4.9	540		#		
Alkalinity, Total (As CaCO3)	mg/L	0597	WL	03/19/2009	0001	9.3	-	10.3	630		#		
Alkalinity, Total (As CaCO3)	mg/L	0598	WL	03/19/2009	0001	9.1	-	10.1	606		#		
Alkalinity, Total (As CaCO3)	mg/L	0599	WL	03/19/2009	0001	9.4	-	10.4	666		#		
Alkalinity, Total (As CaCO3)	mg/L	0603	WL	03/17/2009	0001	9.2	-	10.2	720		#		
Alkalinity, Total (As CaCO3)	mg/L	0605	WL	03/18/2009	0001	9.4	-	10.4	582		#		
Alkalinity, Total (As CaCO3)	mg/L	0606	WL	03/17/2009	0001	9.3	-	10.3	686		#		
Alkalinity, Total (As CaCO3)	mg/L	0607	WL	03/17/2009	0001	9.6	-	10.6	448		#		
Alkalinity, Total (As CaCO3)	mg/L	0608	WL	03/17/2009	0001	8.9	-	9.9	500		#		
Alkalinity, Total (As CaCO3)	mg/L	0611	WL	03/17/2009	0001	2.2	-	3.2	250		#		
Alkalinity, Total (As CaCO3)	mg/L	0612	WL	03/17/2009	0001	4.3	-	5.3	350		#		
Alkalinity, Total (As CaCO3)	mg/L	0615	WL	03/18/2009	0001	1.4	-	2.4	408		#		
Alkalinity, Total (As CaCO3)	mg/L	0616	WL	03/18/2009	0001	5.3	-	6.3	504		#		
Alkalinity, Total (As CaCO3)	mg/L	0617	WL	03/19/2009	0001	1.7	-	2.7	668		#		
Alkalinity, Total (As CaCO3)	mg/L	0618	WL	03/19/2009	0001	5.3	-	6.3	650		#		
Alkalinity, Total (As CaCO3)	mg/L	0671	WL	03/25/2009	0001	14.4	-	44.4	920		#		
Alkalinity, Total (As CaCO3)	mg/L	0674	WL	03/25/2009	0001	15.1	-	45.1	1000		#		
Alkalinity, Total (As CaCO3)	mg/L	0675	WL	03/25/2009	0001	16	-	46	896		#		
Alkalinity, Total (As CaCO3)	mg/L	0676	WL	03/25/2009	0001	15.9	-	45.9	836		#		
Alkalinity, Total (As CaCO3)	mg/L	0678	WL	03/25/2009	0001	16.3	-	46.3	772		#		
Alkalinity, Total (As CaCO3)	mg/L	0683	WL	03/25/2009	0001	27	-	27	826		#		
Alkalinity, Total (As CaCO3)	mg/L	0688	WL	03/25/2009	0001	31	-	31	848		#		
Alkalinity, Total (As CaCO3)	mg/L	0689	WL	03/25/2009	0001	46	-	46	542		#		
Alkalinity, Total (As CaCO3)	mg/L	0691	WL	03/18/2009	0001	6.5	-	7.5	660		#		
Alkalinity, Total (As CaCO3)	mg/L	0692	WL	03/18/2009	0001	9.7	-	10.1	784		#		
Alkalinity, Total (As CaCO3)	mg/L	0696	WL	03/18/2009	0001	1.3	-	2.3	574		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	0725	WL	03/19/2009	0001	4.6	-	5.6	280		#		
Alkalinity, Total (As CaCO3)	mg/L	0780	WL	03/24/2009	0001	28	-	28	972		#		
Alkalinity, Total (As CaCO3)	mg/L	0782	WL	03/24/2009	0001	34	-	34	406		#		
Alkalinity, Total (As CaCO3)	mg/L	0786	WL	03/24/2009	0001	28	-	28	466		#		
Alkalinity, Total (As CaCO3)	mg/L	0787	WL	03/24/2009	0001	36	-	36	246		#		
Alkalinity, Total (As CaCO3)	mg/L	0790	WL	03/16/2009	0001	2	-	3	896		#		
Alkalinity, Total (As CaCO3)	mg/L	0791	WL	03/16/2009	0001	4.3	-	5.3	880		#		
Alkalinity, Total (As CaCO3)	mg/L	0792	WL	03/16/2009	0001	9.3	-	10.3	554		#		
Alkalinity, Total (As CaCO3)	mg/L	SMI-PW02	WL	03/26/2009	0001	20.04	-	60.04	960		#		
Ammonia Total as N	mg/L	0239	SL	03/18/2009	0001	0.17	-	0.17	2.4	J	#	0.1	
Ammonia Total as N	mg/L	0243	SL	03/19/2009	0001	0.25	-	0.25	0.69	J	#	0.1	
Ammonia Total as N	mg/L	0245	SL	03/17/2009	0001	0.33	-	0.33	1.1	J	#	0.1	
Ammonia Total as N	mg/L	0259	SL	03/18/2009	0001	0.17	-	0.17	4	J	#	0.1	
Ammonia Total as N	mg/L	0274	SL	03/16/2009	0001	0.42	-	0.42	69	J	#	10	
Ammonia Total as N	mg/L	0403	WL	03/24/2009	0001	18	-	18	280		#	20	
Ammonia Total as N	mg/L	0403	WL	03/24/2009	0002	18	-	18	240		#	20	
Ammonia Total as N	mg/L	0406	WL	03/25/2009	0001	13.12	-	18.04	290	J	#	20	
Ammonia Total as N	mg/L	0406	WL	03/25/2009	0002	13.12	-	18.04	320		#	20	
Ammonia Total as N	mg/L	0407	WL	03/24/2009	0001	17	-	17	360	J	#	20	
Ammonia Total as N	mg/L	0470	WL	03/24/2009	0001	10.3	-	19.7	680	J	#	20	
Ammonia Total as N	mg/L	0473	WL	03/24/2009	0001	10.3	-	19.7	510	J	#	20	
Ammonia Total as N	mg/L	0474	WL	03/24/2009	0001	10.3	-	19.7	530	J	#	20	
Ammonia Total as N	mg/L	0475	WL	03/24/2009	0001	10.3	-	19.7	450	J	#	20	
Ammonia Total as N	mg/L	0478	WL	03/24/2009	0001	9.6	-	23.9	410	J	#	20	
Ammonia Total as N	mg/L	0480	WL	03/24/2009	0001	18	-	18	600	J	#	20	
Ammonia Total as N	mg/L	0483	WL	03/24/2009	0001	18	-	18	700		#	20	
Ammonia Total as N	mg/L	0493	WL	03/25/2009	0001	45	-	55	1100		#	50	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Ammonia Total as N	mg/L	0495	WL	03/19/2009	0001	4.6	-	5.6	0.43	J	#	0.1	
Ammonia Total as N	mg/L	0547	TS	03/26/2009	0001	0	-	0	600		#	20	
Ammonia Total as N	mg/L	0557	WL	03/24/2009	0001	40	-	40	710		#	20	
Ammonia Total as N	mg/L	0559	WL	03/24/2009	0001	19	-	19	250		#	20	
Ammonia Total as N	mg/L	0560	WL	03/24/2009	0001	31	-	31	1500		#	50	
Ammonia Total as N	mg/L	0560	WL	03/24/2009	0002	31	-	31	1600		#	50	
Ammonia Total as N	mg/L	0562	WL	03/17/2009	0001	1.3	-	2.3	74	J	#	10	
Ammonia Total as N	mg/L	0563	WL	03/17/2009	0001	4.6	-	5.6	300	J	#	20	
Ammonia Total as N	mg/L	0565	WL	03/17/2009	0001	4	-	5	1.8	J	#	0.1	
Ammonia Total as N	mg/L	0583	WL	03/25/2009	0001	18	-	18	440		#	20	
Ammonia Total as N	mg/L	0588	WL	03/25/2009	0001	34	-	34	820		#	20	
Ammonia Total as N	mg/L	0589	WL	03/25/2009	0001	52	-	52	890		#	20	
Ammonia Total as N	mg/L	0590	WL	03/17/2009	0001	1	-	2	110		#	10	
Ammonia Total as N	mg/L	0591	WL	03/18/2009	0001	3.9	-	4.9	390	J	#	20	
Ammonia Total as N	mg/L	0597	WL	03/19/2009	0001	9.3	-	10.3	200		#	20	
Ammonia Total as N	mg/L	0598	WL	03/19/2009	0001	9.1	-	10.1	260		#	20	
Ammonia Total as N	mg/L	0599	WL	03/19/2009	0001	9.4	-	10.4	250		#	20	
Ammonia Total as N	mg/L	0603	WL	03/17/2009	0001	9.2	-	10.2	490		#	20	
Ammonia Total as N	mg/L	0605	WL	03/18/2009	0001	9.4	-	10.4	690	J	#	20	
Ammonia Total as N	mg/L	0606	WL	03/17/2009	0001	9.3	-	10.3	600	J	#	20	
Ammonia Total as N	mg/L	0607	WL	03/17/2009	0001	9.6	-	10.6	340	J	#	20	
Ammonia Total as N	mg/L	0608	WL	03/17/2009	0001	8.9	-	9.9	560	J	#	20	
Ammonia Total as N	mg/L	0611	WL	03/17/2009	0001	2.2	-	3.2	1.5	J	#	0.1	
Ammonia Total as N	mg/L	0612	WL	03/17/2009	0001	4.3	-	5.3	69	J	#	10	
Ammonia Total as N	mg/L	0615	WL	03/18/2009	0001	1.4	-	2.4	96	J	#	20	
Ammonia Total as N	mg/L	0616	WL	03/18/2009	0001	5.3	-	6.3	320	J	#	20	
Ammonia Total as N	mg/L	0617	WL	03/19/2009	0001	1.7	-	2.7	160		#	20	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)		Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	Lab	Data QA					
Ammonia Total as N	mg/L	0618	WL	03/19/2009	0001	5.3	- 6.3	190		0	10	
Ammonia Total as N	mg/L	0671	WL	03/25/2009	0001	14.4	- 44.4	450	J	#	20	
Ammonia Total as N	mg/L	0674	WL	03/25/2009	0001	15.1	- 45.1	530	J	#	20	
Ammonia Total as N	mg/L	0675	WL	03/25/2009	0001	16	- 46	410		#	20	
Ammonia Total as N	mg/L	0676	WL	03/25/2009	0001	15.9	- 45.9	380		#	20	
Ammonia Total as N	mg/L	0678	WL	03/25/2009	0001	16.3	- 46.3	340		#	20	
Ammonia Total as N	mg/L	0683	WL	03/25/2009	0001	27	- 27	370		#	20	
Ammonia Total as N	mg/L	0683	WL	03/25/2009	0002	27	- 27	380		#	20	
Ammonia Total as N	mg/L	0688	WL	03/25/2009	0001	31	- 31	440		#	20	
Ammonia Total as N	mg/L	0689	WL	03/25/2009	0001	46	- 46	460		#	20	
Ammonia Total as N	mg/L	0690	WL	03/18/2009	0001	3.3	- 4.3	0.2	J	#	0.1	
Ammonia Total as N	mg/L	0691	WL	03/18/2009	0001	6.5	- 7.5	180	J	#	20	
Ammonia Total as N	mg/L	0692	WL	03/18/2009	0001	9.7	- 10.1	290	J	#	20	
Ammonia Total as N	mg/L	0696	WL	03/18/2009	0001	1.3	- 2.3	230		#	20	
Ammonia Total as N	mg/L	0725	WL	03/19/2009	0001	4.6	- 5.6	0.81		#	0.1	
Ammonia Total as N	mg/L	0726	WL	03/19/2009	0001	9.7	- 10.3	110	J	#	20	
Ammonia Total as N	mg/L	0780	WL	03/24/2009	0001	28	- 28	670		#	20	
Ammonia Total as N	mg/L	0782	WL	03/24/2009	0001	34	- 34	960		#	50	
Ammonia Total as N	mg/L	0786	WL	03/24/2009	0001	28	- 28	820		#	20	
Ammonia Total as N	mg/L	0787	WL	03/24/2009	0001	36	- 36	120		#	20	
Ammonia Total as N	mg/L	0790	WL	03/16/2009	0001	2	- 3	720	J	#	20	
Ammonia Total as N	mg/L	0791	WL	03/16/2009	0001	4.3	- 5.3	770	J	#	20	
Ammonia Total as N	mg/L	0792	WL	03/16/2009	0001	9.3	- 10.3	310	J	#	20	
Ammonia Total as N	mg/L	SMI-PW02	WL	03/26/2009	0001	20.04	- 60.04	780		#	20	
Chloride	mg/L	0239	SL	03/18/2009	0001	0.17	- 0.17	150	J	#	4	
Chloride	mg/L	0243	SL	03/19/2009	0001	0.25	- 0.25	140		#	4	
Chloride	mg/L	0245	SL	03/17/2009	0001	0.33	- 0.33	160		#	4	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	Lab	Data	QA					
Chloride	mg/L	0259	SL	03/18/2009	0001	0.17	-	0.17	160		#	4	
Chloride	mg/L	0274	SL	03/16/2009	0001	0.42	-	0.42	940		#	10	
Chloride	mg/L	0403	WL	03/24/2009	0001	18	-	18	1600		#	40	
Chloride	mg/L	0403	WL	03/24/2009	0002	18	-	18	1900		#	40	
Chloride	mg/L	0406	WL	03/25/2009	0001	13.12	-	18.04	680		#	20	
Chloride	mg/L	0406	WL	03/25/2009	0002	13.12	-	18.04	720		#	20	
Chloride	mg/L	0407	WL	03/24/2009	0001	17	-	17	2300		#	40	
Chloride	mg/L	0470	WL	03/24/2009	0001	10.3	-	19.7	3300		#	40	
Chloride	mg/L	0473	WL	03/24/2009	0001	10.3	-	19.7	3100		#	40	
Chloride	mg/L	0474	WL	03/24/2009	0001	10.3	-	19.7	3000		#	40	
Chloride	mg/L	0475	WL	03/24/2009	0001	10.3	-	19.7	1600		#	40	
Chloride	mg/L	0478	WL	03/24/2009	0001	9.6	-	23.9	2800		#	40	
Chloride	mg/L	0480	WL	03/24/2009	0001	18	-	18	4600		#	100	
Chloride	mg/L	0483	WL	03/24/2009	0001	18	-	18	4700		#	100	
Chloride	mg/L	0493	WL	03/25/2009	0001	45	-	55	8400		#	100	
Chloride	mg/L	0495	WL	03/19/2009	0001	4.6	-	5.6	530		#	20	
Chloride	mg/L	0547	TS	03/26/2009	0001	0	-	0	4400		#	100	
Chloride	mg/L	0557	WL	03/24/2009	0001	40	-	40	6200		#	100	
Chloride	mg/L	0559	WL	03/24/2009	0001	19	-	19	1400		#	40	
Chloride	mg/L	0560	WL	03/24/2009	0001	31	-	31	34000		#	400	
Chloride	mg/L	0560	WL	03/24/2009	0002	31	-	31	36000		#	400	
Chloride	mg/L	0562	WL	03/17/2009	0001	1.3	-	2.3	700		#	20	
Chloride	mg/L	0563	WL	03/17/2009	0001	4.6	-	5.6	1700		#	40	
Chloride	mg/L	0565	WL	03/17/2009	0001	4	-	5	150		#	4	
Chloride	mg/L	0583	WL	03/25/2009	0001	18	-	18	1100		#	40	
Chloride	mg/L	0588	WL	03/25/2009	0001	34	-	34	9700		#	100	
Chloride	mg/L	0589	WL	03/25/2009	0001	52	-	52	28000		#	400	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
 REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range		Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	(Ft BLS)	Lab		Data	QA		
Chloride	mg/L	0590	WL	03/17/2009	0001	1	-	2	1100		#	20
Chloride	mg/L	0591	WL	03/18/2009	0001	3.9	-	4.9	2600	J	#	40
Chloride	mg/L	0597	WL	03/19/2009	0001	9.3	-	10.3	970		#	40
Chloride	mg/L	0598	WL	03/19/2009	0001	9.1	-	10.1	870		#	20
Chloride	mg/L	0599	WL	03/19/2009	0001	9.4	-	10.4	910		#	40
Chloride	mg/L	0603	WL	03/17/2009	0001	9.2	-	10.2	3800		#	40
Chloride	mg/L	0605	WL	03/18/2009	0001	9.4	-	10.4	3700	J	#	40
Chloride	mg/L	0606	WL	03/17/2009	0001	9.3	-	10.3	5400	J	#	100
Chloride	mg/L	0607	WL	03/17/2009	0001	9.6	-	10.6	4100	J	#	100
Chloride	mg/L	0608	WL	03/17/2009	0001	8.9	-	9.9	4800	J	#	100
Chloride	mg/L	0611	WL	03/17/2009	0001	2.2	-	3.2	290	J	#	10
Chloride	mg/L	0612	WL	03/17/2009	0001	4.3	-	5.3	650	J	#	20
Chloride	mg/L	0615	WL	03/18/2009	0001	1.4	-	2.4	580	J	#	20
Chloride	mg/L	0616	WL	03/18/2009	0001	5.3	-	6.3	930	J	#	20
Chloride	mg/L	0617	WL	03/19/2009	0001	1.7	-	2.7	860		#	20
Chloride	mg/L	0618	WL	03/19/2009	0001	5.3	-	6.3	910		#	20
Chloride	mg/L	0671	WL	03/25/2009	0001	14.4	-	44.4	1700		#	40
Chloride	mg/L	0674	WL	03/25/2009	0001	15.1	-	45.1	1900		#	40
Chloride	mg/L	0675	WL	03/25/2009	0001	16	-	46	2300		#	40
Chloride	mg/L	0676	WL	03/25/2009	0001	15.9	-	45.9	1900		#	40
Chloride	mg/L	0678	WL	03/25/2009	0001	16.3	-	46.3	1500		#	40
Chloride	mg/L	0683	WL	03/25/2009	0001	27	-	27	1900		#	40
Chloride	mg/L	0683	WL	03/25/2009	0002	27	-	27	1800		#	40
Chloride	mg/L	0688	WL	03/25/2009	0001	31	-	31	2200		#	40
Chloride	mg/L	0689	WL	03/25/2009	0001	46	-	46	36000		#	400
Chloride	mg/L	0690	WL	03/18/2009	0001	3.3	-	4.3	1700		#	40
Chloride	mg/L	0691	WL	03/18/2009	0001	6.5	-	7.5	1200		#	40

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
 REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	(Ft BLS)	Lab	Data		QA			
Chloride	mg/L	0692	WL	03/18/2009	0001	9.7	-	10.1	1600		#	40	
Chloride	mg/L	0696	WL	03/18/2009	0001	1.3	-	2.3	860		#	20	
Chloride	mg/L	0725	WL	03/19/2009	0001	4.6	-	5.6	270		#	10	
Chloride	mg/L	0726	WL	03/19/2009	0001	9.7	-	10.3	750		#	20	
Chloride	mg/L	0780	WL	03/24/2009	0001	28	-	28	5400		#	100	
Chloride	mg/L	0782	WL	03/24/2009	0001	34	-	34	46000		#	1000	
Chloride	mg/L	0786	WL	03/24/2009	0001	28	-	28	14000		#	200	
Chloride	mg/L	0787	WL	03/24/2009	0001	36	-	36	48000		#	1000	
Chloride	mg/L	0790	WL	03/16/2009	0001	2	-	3	6600		#	100	
Chloride	mg/L	0791	WL	03/16/2009	0001	4.3	-	5.3	8100		#	100	
Chloride	mg/L	0792	WL	03/16/2009	0001	9.3	-	10.3	3400	N	#	40	
Chloride	mg/L	SMI-PW02	WL	03/26/2009	0001	20.04	-	60.04	18000		#	200	
Copper	mg/L	0787	WL	03/24/2009	0001	36	-	36	0.23	B	#	0.023	
Dissolved Oxygen	mg/L	0239	SL	03/18/2009	0001	0.17	-	0.17	13.86		#		
Dissolved Oxygen	mg/L	0243	SL	03/19/2009	0001	0.25	-	0.25	9.68		#		
Dissolved Oxygen	mg/L	0245	SL	03/17/2009	0001	0.33	-	0.33	16.8		#		
Dissolved Oxygen	mg/L	0259	SL	03/18/2009	0001	0.17	-	0.17	12.62		#		
Dissolved Oxygen	mg/L	0274	SL	03/16/2009	0001	0.42	-	0.42	10.62		#		
Dissolved Oxygen	mg/L	0403	WL	03/24/2009	0001	18	-	18	0.94		#		
Dissolved Oxygen	mg/L	0406	WL	03/25/2009	0001	13.12	-	18.04	4.6		#		
Dissolved Oxygen	mg/L	0407	WL	03/24/2009	0001	17	-	17	-0.04		#		
Dissolved Oxygen	mg/L	0470	WL	03/24/2009	0001	10.3	-	19.7	2.82		#		
Dissolved Oxygen	mg/L	0473	WL	03/24/2009	0001	10.3	-	19.7	4.22		#		
Dissolved Oxygen	mg/L	0474	WL	03/24/2009	0001	10.3	-	19.7	2.42		#		
Dissolved Oxygen	mg/L	0475	WL	03/24/2009	0001	10.3	-	19.7	4.24		#		
Dissolved Oxygen	mg/L	0478	WL	03/24/2009	0001	9.6	-	23.9	3.6		#		
Dissolved Oxygen	mg/L	0480	WL	03/24/2009	0001	18	-	18	0.47		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Dissolved Oxygen	mg/L	0483	WL	03/24/2009	0001	18	-	18	0.22		#		
Dissolved Oxygen	mg/L	0493	WL	03/25/2009	0001	45	-	55	0.28		#		
Dissolved Oxygen	mg/L	0495	WL	03/19/2009	0001	4.6	-	5.6	4.23		#		
Dissolved Oxygen	mg/L	0547	TS	03/26/2009	0001	0	-	0	6.43		#		
Dissolved Oxygen	mg/L	0557	WL	03/24/2009	0001	40	-	40	0.23		#		
Dissolved Oxygen	mg/L	0559	WL	03/24/2009	0001	19	-	19	0.17		#		
Dissolved Oxygen	mg/L	0560	WL	03/24/2009	0001	31	-	31	0.03		#		
Dissolved Oxygen	mg/L	0562	WL	03/17/2009	0001	1.3	-	2.3	10.22		#		
Dissolved Oxygen	mg/L	0563	WL	03/17/2009	0001	4.6	-	5.6	10.24		#		
Dissolved Oxygen	mg/L	0565	WL	03/17/2009	0001	4	-	5	2.66		#		
Dissolved Oxygen	mg/L	0583	WL	03/25/2009	0001	18	-	18	0.34		#		
Dissolved Oxygen	mg/L	0588	WL	03/25/2009	0001	34	-	34	0.34		#		
Dissolved Oxygen	mg/L	0589	WL	03/25/2009	0001	52	-	52	0.23		#		
Dissolved Oxygen	mg/L	0590	WL	03/17/2009	0001	1	-	2	8.63		#		
Dissolved Oxygen	mg/L	0591	WL	03/18/2009	0001	3.9	-	4.9	5.84		#		
Dissolved Oxygen	mg/L	0597	WL	03/19/2009	0001	9.3	-	10.3	0.68		#		
Dissolved Oxygen	mg/L	0598	WL	03/19/2009	0001	9.1	-	10.1	0.81		#		
Dissolved Oxygen	mg/L	0599	WL	03/19/2009	0001	9.4	-	10.4	2.23		#		
Dissolved Oxygen	mg/L	0603	WL	03/17/2009	0001	9.2	-	10.2	2.79		#		
Dissolved Oxygen	mg/L	0605	WL	03/18/2009	0001	9.4	-	10.4	1.08		#		
Dissolved Oxygen	mg/L	0606	WL	03/17/2009	0001	9.3	-	10.3	2.92		#		
Dissolved Oxygen	mg/L	0607	WL	03/17/2009	0001	9.6	-	10.6	4.16		#		
Dissolved Oxygen	mg/L	0608	WL	03/17/2009	0001	8.9	-	9.9	2.41		#		
Dissolved Oxygen	mg/L	0611	WL	03/17/2009	0001	2.2	-	3.2	12.62		#		
Dissolved Oxygen	mg/L	0612	WL	03/17/2009	0001	4.3	-	5.3	7.6		#		
Dissolved Oxygen	mg/L	0615	WL	03/18/2009	0001	1.4	-	2.4	5.85		#		
Dissolved Oxygen	mg/L	0616	WL	03/18/2009	0001	5.3	-	6.3	2.04		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Dissolved Oxygen	mg/L	0617	WL	03/19/2009	0001	1.7	-	2.7	2.74		#		
Dissolved Oxygen	mg/L	0618	WL	03/19/2009	0001	5.3	-	6.3	0.49		#		
Dissolved Oxygen	mg/L	0671	WL	03/25/2009	0001	14.4	-	44.4	2.34		#		
Dissolved Oxygen	mg/L	0674	WL	03/25/2009	0001	15.1	-	45.1	4.31		#		
Dissolved Oxygen	mg/L	0675	WL	03/25/2009	0001	16	-	46	2.26		#		
Dissolved Oxygen	mg/L	0676	WL	03/25/2009	0001	15.9	-	45.9	2.06		#		
Dissolved Oxygen	mg/L	0678	WL	03/25/2009	0001	16.3	-	46.3	3.67		#		
Dissolved Oxygen	mg/L	0683	WL	03/25/2009	0001	27	-	27	0.35		#		
Dissolved Oxygen	mg/L	0688	WL	03/25/2009	0001	39	-	39	0.3		#		
Dissolved Oxygen	mg/L	0688	WL	03/25/2009	0001	31	-	31	0.42		#		
Dissolved Oxygen	mg/L	0689	WL	03/25/2009	0001	54	-	54	0.21		#		
Dissolved Oxygen	mg/L	0689	WL	03/25/2009	0001	46	-	46	0.28		#		
Dissolved Oxygen	mg/L	0690	WL	03/18/2009	0001	3.3	-	4.3	8.02		#		
Dissolved Oxygen	mg/L	0691	WL	03/18/2009	0001	6.5	-	7.5	5.79		#		
Dissolved Oxygen	mg/L	0692	WL	03/18/2009	0001	9.7	-	10.1	2.84		#		
Dissolved Oxygen	mg/L	0696	WL	03/18/2009	0001	1.3	-	2.3	7.35		#		
Dissolved Oxygen	mg/L	0725	WL	03/19/2009	0001	4.6	-	5.6	4.86		#		
Dissolved Oxygen	mg/L	0726	WL	03/19/2009	0001	9.7	-	10.3	2.75		#		
Dissolved Oxygen	mg/L	0780	WL	03/24/2009	0001	28	-	28	0.65		#		
Dissolved Oxygen	mg/L	0782	WL	03/24/2009	0001	34	-	34	0.18		#		
Dissolved Oxygen	mg/L	0786	WL	03/24/2009	0001	28	-	28	0.47		#		
Dissolved Oxygen	mg/L	0787	WL	03/24/2009	0001	36	-	36	0.29		#		
Dissolved Oxygen	mg/L	0790	WL	03/16/2009	0001	2	-	3	0.2		#		
Dissolved Oxygen	mg/L	0791	WL	03/16/2009	0001	4.3	-	5.3	1.96		#		
Dissolved Oxygen	mg/L	0792	WL	03/16/2009	0001	9.3	-	10.3	3.44		#		
Dissolved Oxygen	mg/L	SMI-PW02	WL	03/26/2009	0001	20.04	-	60.04	6.3		#		
Manganese	mg/L	0239	SL	03/18/2009	0001	0.17	-	0.17	0.032	J	#	9.7E-005	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
 REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range		Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	(Ft BLS)	Lab		Data	QA		
Manganese	mg/L	0243	SL	03/19/2009	0001	0.25	- 0.25	0.028		#	9.7E-005	
Manganese	mg/L	0245	SL	03/17/2009	0001	0.33	- 0.33	0.015		#	9.7E-005	
Manganese	mg/L	0259	SL	03/18/2009	0001	0.17	- 0.17	0.031		#	9.7E-005	
Manganese	mg/L	0274	SL	03/16/2009	0001	0.42	- 0.42	0.83		#	0.00048	
Manganese	mg/L	0403	WL	03/24/2009	0001	18	- 18	3.9		#	0.00097	
Manganese	mg/L	0403	WL	03/24/2009	0002	18	- 18	4.1		#	0.00097	
Manganese	mg/L	0406	WL	03/25/2009	0001	13.12	- 18.04	0.64		#	0.00048	
Manganese	mg/L	0406	WL	03/25/2009	0002	13.12	- 18.04	0.66		#	0.00048	
Manganese	mg/L	0407	WL	03/24/2009	0001	17	- 17	2.5		#	0.00097	
Manganese	mg/L	0470	WL	03/24/2009	0001	10.3	- 19.7	4.6		#	0.00097	
Manganese	mg/L	0473	WL	03/24/2009	0001	10.3	- 19.7	4.2		#	0.00097	
Manganese	mg/L	0474	WL	03/24/2009	0001	10.3	- 19.7	4.2		#	0.00097	
Manganese	mg/L	0475	WL	03/24/2009	0001	10.3	- 19.7	4		#	0.00097	
Manganese	mg/L	0478	WL	03/24/2009	0001	9.6	- 23.9	4.3		#	0.00097	
Manganese	mg/L	0480	WL	03/24/2009	0001	18	- 18	5.2		#	0.00097	
Manganese	mg/L	0483	WL	03/24/2009	0001	18	- 18	3.8		#	0.00097	
Manganese	mg/L	0493	WL	03/25/2009	0001	45	- 55	9.7		#	0.0024	
Manganese	mg/L	0495	WL	03/19/2009	0001	4.6	- 5.6	0.82		#	0.00048	
Manganese	mg/L	0547	TS	03/26/2009	0001	0	- 0	4.9		#	0.00097	
Manganese	mg/L	0557	WL	03/24/2009	0001	40	- 40	5.4		#	0.00097	
Manganese	mg/L	0559	WL	03/24/2009	0001	19	- 19	3.3		#	0.00048	
Manganese	mg/L	0560	WL	03/24/2009	0001	31	- 31	7.2		#	0.00048	
Manganese	mg/L	0560	WL	03/24/2009	0002	31	- 31	8.7		#	0.0048	
Manganese	mg/L	0562	WL	03/17/2009	0001	1.3	- 2.3	2		#	0.00048	
Manganese	mg/L	0563	WL	03/17/2009	0001	4.6	- 5.6	0.8		#	0.00048	
Manganese	mg/L	0565	WL	03/17/2009	0001	4	- 5	0.84		#	9.7E-005	
Manganese	mg/L	0583	WL	03/25/2009	0001	18	- 18	5.2		#	0.00097	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Manganese	mg/L	0588	WL	03/25/2009	0001	34	-	34	6.5		#	0.0024	
Manganese	mg/L	0589	WL	03/25/2009	0001	52	-	52	7.1		#	0.0048	
Manganese	mg/L	0590	WL	03/17/2009	0001	1	-	2	3.3		#	0.00048	
Manganese	mg/L	0591	WL	03/18/2009	0001	3.9	-	4.9	4.2	J	#	0.00097	
Manganese	mg/L	0597	WL	03/19/2009	0001	9.3	-	10.3	5.3		#	0.00048	
Manganese	mg/L	0598	WL	03/19/2009	0001	9.1	-	10.1	2.6		#	0.00048	
Manganese	mg/L	0599	WL	03/19/2009	0001	9.4	-	10.4	3.9		#	0.00048	
Manganese	mg/L	0603	WL	03/17/2009	0001	9.2	-	10.2	3.4		#	0.00097	
Manganese	mg/L	0605	WL	03/18/2009	0001	9.4	-	10.4	1.8	J	#	0.00097	
Manganese	mg/L	0606	WL	03/17/2009	0001	9.3	-	10.3	2.9	J	#	0.00097	
Manganese	mg/L	0607	WL	03/17/2009	0001	9.6	-	10.6	1.7	J	#	0.00097	
Manganese	mg/L	0608	WL	03/17/2009	0001	8.9	-	9.9	1.9	J	#	0.00097	
Manganese	mg/L	0611	WL	03/17/2009	0001	2.2	-	3.2	2.6	J	#	0.00019	
Manganese	mg/L	0612	WL	03/17/2009	0001	4.3	-	5.3	1.6	J	#	0.00048	
Manganese	mg/L	0615	WL	03/18/2009	0001	1.4	-	2.4	3.5	J	#	0.00048	
Manganese	mg/L	0616	WL	03/18/2009	0001	5.3	-	6.3	1.2	J	#	0.00048	
Manganese	mg/L	0617	WL	03/19/2009	0001	1.7	-	2.7	4.5		#	0.00048	
Manganese	mg/L	0618	WL	03/19/2009	0001	5.3	-	6.3	4.3		#	0.00048	
Manganese	mg/L	0671	WL	03/25/2009	0001	14.4	-	44.4	5.1		#	0.00097	
Manganese	mg/L	0674	WL	03/25/2009	0001	15.1	-	45.1	5		#	0.00097	
Manganese	mg/L	0675	WL	03/25/2009	0001	16	-	46	4.9		#	0.00097	
Manganese	mg/L	0676	WL	03/25/2009	0001	15.9	-	45.9	4.9		#	0.00097	
Manganese	mg/L	0678	WL	03/25/2009	0001	16.3	-	46.3	4.2		#	0.00097	
Manganese	mg/L	0683	WL	03/25/2009	0001	27	-	27	5		#	0.00097	
Manganese	mg/L	0683	WL	03/25/2009	0002	27	-	27	5.2		#	0.00097	
Manganese	mg/L	0688	WL	03/25/2009	0001	31	-	31	5.1		#	0.00097	
Manganese	mg/L	0689	WL	03/25/2009	0001	46	-	46	6.5		#	0.0048	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)		Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	Lab	Data		QA			
Manganese	mg/L	0690	WL	03/18/2009	0001	3.3	- 4.3	2.3		#	0.00048	
Manganese	mg/L	0691	WL	03/18/2009	0001	6.5	- 7.5	4.1		#	0.00048	
Manganese	mg/L	0692	WL	03/18/2009	0001	9.7	- 10.1	4.4		#	0.00097	
Manganese	mg/L	0696	WL	03/18/2009	0001	1.3	- 2.3	1.9		#	0.00019	
Manganese	mg/L	0725	WL	03/19/2009	0001	4.6	- 5.6	2.6		#	0.00019	
Manganese	mg/L	0726	WL	03/19/2009	0001	9.7	- 10.3	1.3		#	0.00048	
Manganese	mg/L	0780	WL	03/24/2009	0001	28	- 28	5.7		#	0.00097	
Manganese	mg/L	0782	WL	03/24/2009	0001	34	- 34	8.1		#	0.0048	
Manganese	mg/L	0786	WL	03/24/2009	0001	28	- 28	7		#	0.0024	
Manganese	mg/L	0787	WL	03/24/2009	0001	36	- 36	6.6		#	0.0048	
Manganese	mg/L	0790	WL	03/16/2009	0001	2	- 3	6.2		#	0.0024	
Manganese	mg/L	0791	WL	03/16/2009	0001	4.3	- 5.3	6.8		#	0.0024	
Manganese	mg/L	0792	WL	03/16/2009	0001	9.3	- 10.3	1.2		#	0.00097	
Manganese	mg/L	SMI-PW02	WL	03/26/2009	0001	20.04	- 60.04	6.3		#	0.0024	
Oxidation Reduction Potential	mV	0239	SL	03/18/2009	0001	0.17	- 0.17	-88		#		
Oxidation Reduction Potential	mV	0243	SL	03/19/2009	0001	0.25	- 0.25	-63		#		
Oxidation Reduction Potential	mV	0245	SL	03/17/2009	0001	0.33	- 0.33	-111		#		
Oxidation Reduction Potential	mV	0259	SL	03/18/2009	0001	0.17	- 0.17	-31		#		
Oxidation Reduction Potential	mV	0274	SL	03/16/2009	0001	0.42	- 0.42	27		#		
Oxidation Reduction Potential	mV	0403	WL	03/24/2009	0001	18	- 18	98		#		
Oxidation Reduction Potential	mV	0406	WL	03/25/2009	0001	13.12	- 18.04	103		#		
Oxidation Reduction Potential	mV	0407	WL	03/24/2009	0001	17	- 17	112		#		
Oxidation Reduction Potential	mV	0470	WL	03/24/2009	0001	10.3	- 19.7	148		#		
Oxidation Reduction Potential	mV	0473	WL	03/24/2009	0001	10.3	- 19.7	43		#		
Oxidation Reduction Potential	mV	0474	WL	03/24/2009	0001	10.3	- 19.7	85		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Oxidation Reduction Potential	mV	0475	WL	03/24/2009	0001	10.3	-	19.7	83		#		
Oxidation Reduction Potential	mV	0478	WL	03/24/2009	0001	9.6	-	23.9	81		#		
Oxidation Reduction Potential	mV	0480	WL	03/24/2009	0001	18	-	18	89		#		
Oxidation Reduction Potential	mV	0483	WL	03/24/2009	0001	18	-	18	85		#		
Oxidation Reduction Potential	mV	0493	WL	03/25/2009	0001	45	-	55	114		#		
Oxidation Reduction Potential	mV	0495	WL	03/19/2009	0001	4.6	-	5.6	-55		#		
Oxidation Reduction Potential	mV	0547	TS	03/26/2009	0001	0	-	0	172		#		
Oxidation Reduction Potential	mV	0557	WL	03/24/2009	0001	40	-	40	86		#		
Oxidation Reduction Potential	mV	0559	WL	03/24/2009	0001	19	-	19	99		#		
Oxidation Reduction Potential	mV	0560	WL	03/24/2009	0001	31	-	31	92		#		
Oxidation Reduction Potential	mV	0562	WL	03/17/2009	0001	1.3	-	2.3	49		#		
Oxidation Reduction Potential	mV	0563	WL	03/17/2009	0001	4.6	-	5.6	-188		#		
Oxidation Reduction Potential	mV	0565	WL	03/17/2009	0001	4	-	5	-67		#		
Oxidation Reduction Potential	mV	0583	WL	03/25/2009	0001	18	-	18	143		#		
Oxidation Reduction Potential	mV	0588	WL	03/25/2009	0001	34	-	34	105		#		
Oxidation Reduction Potential	mV	0589	WL	03/25/2009	0001	52	-	52	124		#		
Oxidation Reduction Potential	mV	0590	WL	03/17/2009	0001	1	-	2	28		#		
Oxidation Reduction Potential	mV	0591	WL	03/18/2009	0001	3.9	-	4.9	155		#		
Oxidation Reduction Potential	mV	0597	WL	03/19/2009	0001	9.3	-	10.3	-200		#		
Oxidation Reduction Potential	mV	0598	WL	03/19/2009	0001	9.1	-	10.1	-182		#		
Oxidation Reduction Potential	mV	0599	WL	03/19/2009	0001	9.4	-	10.4	-93		#		
Oxidation Reduction Potential	mV	0603	WL	03/17/2009	0001	9.2	-	10.2	-201		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers			Detection Limit	Uncertainty
				Date	ID					Lab	Data	QA		
Oxidation Reduction Potential	mV	0605	WL	03/18/2009	0001	9.4	-	10.4	-219			#		
Oxidation Reduction Potential	mV	0606	WL	03/17/2009	0001	9.3	-	10.3	-17			#		
Oxidation Reduction Potential	mV	0607	WL	03/17/2009	0001	9.6	-	10.6	-244			#		
Oxidation Reduction Potential	mV	0608	WL	03/17/2009	0001	8.9	-	9.9	-155			#		
Oxidation Reduction Potential	mV	0611	WL	03/17/2009	0001	2.2	-	3.2	-32			#		
Oxidation Reduction Potential	mV	0612	WL	03/17/2009	0001	4.3	-	5.3	-216			#		
Oxidation Reduction Potential	mV	0615	WL	03/18/2009	0001	1.4	-	2.4	-168			#		
Oxidation Reduction Potential	mV	0616	WL	03/18/2009	0001	5.3	-	6.3	-196			#		
Oxidation Reduction Potential	mV	0617	WL	03/19/2009	0001	1.7	-	2.7	-76			#		
Oxidation Reduction Potential	mV	0618	WL	03/19/2009	0001	5.3	-	6.3	-149			#		
Oxidation Reduction Potential	mV	0671	WL	03/25/2009	0001	14.4	-	44.4	172			#		
Oxidation Reduction Potential	mV	0674	WL	03/25/2009	0001	15.1	-	45.1	132			#		
Oxidation Reduction Potential	mV	0675	WL	03/25/2009	0001	16	-	46	141.8			#		
Oxidation Reduction Potential	mV	0676	WL	03/25/2009	0001	15.9	-	45.9	127.2			#		
Oxidation Reduction Potential	mV	0678	WL	03/25/2009	0001	16.3	-	46.3	125			#		
Oxidation Reduction Potential	mV	0683	WL	03/25/2009	0001	27	-	27	125.8			#		
Oxidation Reduction Potential	mV	0688	WL	03/25/2009	0001	31	-	31	109			#		
Oxidation Reduction Potential	mV	0688	WL	03/25/2009	0001	39	-	39	114			#		
Oxidation Reduction Potential	mV	0689	WL	03/25/2009	0001	46	-	46	118			#		
Oxidation Reduction Potential	mV	0689	WL	03/25/2009	0001	54	-	54	120			#		
Oxidation Reduction Potential	mV	0690	WL	03/18/2009	0001	3.3	-	4.3	-199			#		
Oxidation Reduction Potential	mV	0691	WL	03/18/2009	0001	6.5	-	7.5	-177			#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Oxidation Reduction Potential	mV	0692	WL	03/18/2009	0001	9.7	-	10.1	-140		#		
Oxidation Reduction Potential	mV	0696	WL	03/18/2009	0001	1.3	-	2.3	-44		#		
Oxidation Reduction Potential	mV	0725	WL	03/19/2009	0001	4.6	-	5.6	-197		#		
Oxidation Reduction Potential	mV	0726	WL	03/19/2009	0001	9.7	-	10.3	13		#		
Oxidation Reduction Potential	mV	0780	WL	03/24/2009	0001	28	-	28	65		#		
Oxidation Reduction Potential	mV	0782	WL	03/24/2009	0001	34	-	34	79		#		
Oxidation Reduction Potential	mV	0786	WL	03/24/2009	0001	28	-	28	67		#		
Oxidation Reduction Potential	mV	0787	WL	03/24/2009	0001	36	-	36	8		#		
Oxidation Reduction Potential	mV	0790	WL	03/16/2009	0001	2	-	3	4		#		
Oxidation Reduction Potential	mV	0791	WL	03/16/2009	0001	4.3	-	5.3	-87		#		
Oxidation Reduction Potential	mV	0792	WL	03/16/2009	0001	9.3	-	10.3	-212		#		
Oxidation Reduction Potential	mV	SMI-PW02	WL	03/26/2009	0001	20.04	-	60.04	175		#		
pH	s.u.	0239	SL	03/18/2009	0001	0.17	-	0.17	8.18		#		
pH	s.u.	0243	SL	03/19/2009	0001	0.25	-	0.25	8.28		#		
pH	s.u.	0245	SL	03/17/2009	0001	0.33	-	0.33	8.67		#		
pH	s.u.	0259	SL	03/18/2009	0001	0.17	-	0.17	8.09		#		
pH	s.u.	0274	SL	03/16/2009	0001	0.42	-	0.42	7.81		#		
pH	s.u.	0403	WL	03/24/2009	0001	18	-	18	6.86		#		
pH	s.u.	0406	WL	03/25/2009	0001	13.12	-	18.04	7.1		#		
pH	s.u.	0407	WL	03/24/2009	0001	17	-	17	7.07		#		
pH	s.u.	0470	WL	03/24/2009	0001	10.3	-	19.7	6.89		#		
pH	s.u.	0473	WL	03/24/2009	0001	10.3	-	19.7	7.06		#		
pH	s.u.	0474	WL	03/24/2009	0001	10.3	-	19.7	6.97		#		
pH	s.u.	0475	WL	03/24/2009	0001	10.3	-	19.7	6.98		#		
pH	s.u.	0478	WL	03/24/2009	0001	9.6	-	23.9	6.97		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
 REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range		Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	(Ft BLS)	Lab		Data	QA		
pH	s.u.	0480	WL	03/24/2009	0001	18	- 18	6.94			#	
pH	s.u.	0483	WL	03/24/2009	0001	18	- 18	6.91			#	
pH	s.u.	0493	WL	03/25/2009	0001	45	- 55	7.05			#	
pH	s.u.	0495	WL	03/19/2009	0001	4.6	- 5.6	7.29			#	
pH	s.u.	0547	TS	03/26/2009	0001	0	- 0	6.88			#	
pH	s.u.	0557	WL	03/24/2009	0001	40	- 40	6.94			#	
pH	s.u.	0559	WL	03/24/2009	0001	19	- 19	6.92			#	
pH	s.u.	0560	WL	03/24/2009	0001	31	- 31	6.75			#	
pH	s.u.	0562	WL	03/17/2009	0001	1.3	- 2.3	7.81			#	
pH	s.u.	0563	WL	03/17/2009	0001	4.6	- 5.6	6.67			#	
pH	s.u.	0565	WL	03/17/2009	0001	4	- 5	7.99			#	
pH	s.u.	0583	WL	03/25/2009	0001	18	- 18	7.43			#	
pH	s.u.	0588	WL	03/25/2009	0001	34	- 34	7.43			#	
pH	s.u.	0589	WL	03/25/2009	0001	52	- 52	7.34			#	
pH	s.u.	0590	WL	03/17/2009	0001	1	- 2	7.61			#	
pH	s.u.	0591	WL	03/18/2009	0001	3.9	- 4.9	7.34			#	
pH	s.u.	0597	WL	03/19/2009	0001	9.3	- 10.3	6.89			#	
pH	s.u.	0598	WL	03/19/2009	0001	9.1	- 10.1	7.27			#	
pH	s.u.	0599	WL	03/19/2009	0001	9.4	- 10.4	7.2			#	
pH	s.u.	0603	WL	03/17/2009	0001	9.2	- 10.2	7.33			#	
pH	s.u.	0605	WL	03/18/2009	0001	9.4	- 10.4	7.47			#	
pH	s.u.	0606	WL	03/17/2009	0001	9.3	- 10.3	7.61			#	
pH	s.u.	0607	WL	03/17/2009	0001	9.6	- 10.6	9.02			#	
pH	s.u.	0608	WL	03/17/2009	0001	8.9	- 9.9	7.76			#	
pH	s.u.	0611	WL	03/17/2009	0001	2.2	- 3.2	7.36			#	
pH	s.u.	0612	WL	03/17/2009	0001	4.3	- 5.3	7.57			#	
pH	s.u.	0615	WL	03/18/2009	0001	1.4	- 2.4	7.46			#	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
 REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)		Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	Lab	Data QA					
pH	s.u.	0616	WL	03/18/2009	0001	5.3	- 6.3	7.61		#		
pH	s.u.	0617	WL	03/19/2009	0001	1.7	- 2.7	7.24		#		
pH	s.u.	0618	WL	03/19/2009	0001	5.3	- 6.3	6.99		#		
pH	s.u.	0671	WL	03/25/2009	0001	14.4	- 44.4	7.05		#		
pH	s.u.	0674	WL	03/25/2009	0001	15.1	- 45.1	7.08		#		
pH	s.u.	0675	WL	03/25/2009	0001	16	- 46	7.03		#		
pH	s.u.	0676	WL	03/25/2009	0001	15.9	- 45.9	7.1		#		
pH	s.u.	0678	WL	03/25/2009	0001	16.3	- 46.3	7.1		#		
pH	s.u.	0683	WL	03/25/2009	0001	27	- 27	7.06		#		
pH	s.u.	0688	WL	03/25/2009	0001	39	- 39	7.26		#		
pH	s.u.	0688	WL	03/25/2009	0001	31	- 31	7.48		#		
pH	s.u.	0689	WL	03/25/2009	0001	46	- 46	7.44		#		
pH	s.u.	0689	WL	03/25/2009	0001	54	- 54	7.47		#		
pH	s.u.	0690	WL	03/18/2009	0001	3.3	- 4.3	7.81		#		
pH	s.u.	0691	WL	03/18/2009	0001	6.5	- 7.5	7.49		#		
pH	s.u.	0692	WL	03/18/2009	0001	9.7	- 10.1	7.33		#		
pH	s.u.	0696	WL	03/18/2009	0001	1.3	- 2.3	7.76		#		
pH	s.u.	0725	WL	03/19/2009	0001	4.6	- 5.6	8.72		#		
pH	s.u.	0726	WL	03/19/2009	0001	9.7	- 10.3	9.1		#		
pH	s.u.	0780	WL	03/24/2009	0001	28	- 28	6.99		#		
pH	s.u.	0782	WL	03/24/2009	0001	34	- 34	6.88		#		
pH	s.u.	0786	WL	03/24/2009	0001	28	- 28	6.92		#		
pH	s.u.	0787	WL	03/24/2009	0001	36	- 36	7.03		#		
pH	s.u.	0790	WL	03/16/2009	0001	2	- 3	6.89		#		
pH	s.u.	0791	WL	03/16/2009	0001	4.3	- 5.3	6.86		#		
pH	s.u.	0792	WL	03/16/2009	0001	9.3	- 10.3	10.03		#		
pH	s.u.	SMI-PW02	WL	03/26/2009	0001	20.04	- 60.04	6.93		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers			Detection Limit	Uncertainty
				Date	ID					Lab	Data	QA		
Selenium	mg/L	0495	WL	03/19/2009	0001	4.6	-	5.6	0.017	E	J	#	8.4E-005	
Selenium	mg/L	0597	WL	03/19/2009	0001	9.3	-	10.3	0.011		J	#	8.4E-005	
Selenium	mg/L	0598	WL	03/19/2009	0001	9.1	-	10.1	0.0076		J	#	8.4E-005	
Selenium	mg/L	0599	WL	03/19/2009	0001	9.4	-	10.4	0.012		J	#	8.4E-005	
Selenium	mg/L	0606	WL	03/17/2009	0001	9.3	-	10.3	0.0016		J	#	8.4E-005	
Selenium	mg/L	0617	WL	03/19/2009	0001	1.7	-	2.7	0.011		J	#	8.4E-005	
Selenium	mg/L	0618	WL	03/19/2009	0001	5.3	-	6.3	0.014		J	#	8.4E-005	
Selenium	mg/L	0676	WL	03/25/2009	0001	15.9	-	45.9	0.019			#	8.4E-005	
Selenium	mg/L	0683	WL	03/25/2009	0001	27	-	27	0.02			#	8.4E-005	
Selenium	mg/L	0691	WL	03/18/2009	0001	6.5	-	7.5	0.0046		J	#	8.4E-005	
Selenium	mg/L	0696	WL	03/18/2009	0001	1.3	-	2.3	0.0043		J	#	8.4E-005	
Selenium	mg/L	0725	WL	03/19/2009	0001	4.6	-	5.6	0.00026		J	#	1.7E-005	
Selenium	mg/L	0726	WL	03/19/2009	0001	9.7	-	10.3	0.0099		J	#	8.4E-005	
Selenium	mg/L	0792	WL	03/16/2009	0001	9.3	-	10.3	0.00017		J	#	1.7E-005	
Specific Conductance	µmhos/cm	0239	SL	03/18/2009	0001	0.17	-	0.17	1436			#		
Specific Conductance	µmhos/cm	0243	SL	03/19/2009	0001	0.25	-	0.25	1865			#		
Specific Conductance	µmhos/cm	0245	SL	03/17/2009	0001	0.33	-	0.33	1381			#		
Specific Conductance	µmhos/cm	0259	SL	03/18/2009	0001	0.17	-	0.17	1593			#		
Specific Conductance	µmhos/cm	0274	SL	03/16/2009	0001	0.42	-	0.42	6315			#		
Specific Conductance	µmhos/cm	0403	WL	03/24/2009	0001	18	-	18	15523			#		
Specific Conductance	µmhos/cm	0406	WL	03/25/2009	0001	13.12	-	18.04	10736			#		
Specific Conductance	µmhos/cm	0407	WL	03/24/2009	0001	17	-	17	15061			#		
Specific Conductance	µmhos/cm	0470	WL	03/24/2009	0001	10.3	-	19.7	21254			#		
Specific Conductance	µmhos/cm	0473	WL	03/24/2009	0001	10.3	-	19.7	21148			#		
Specific Conductance	µmhos/cm	0474	WL	03/24/2009	0001	10.3	-	19.7	20377			#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Specific Conductance	µmhos/cm	0475	WL	03/24/2009	0001	10.3	-	19.7	17807		#		
Specific Conductance	µmhos/cm	0478	WL	03/24/2009	0001	9.6	-	23.9	19606		#		
Specific Conductance	µmhos/cm	0480	WL	03/24/2009	0001	18	-	18	26624		#		
Specific Conductance	µmhos/cm	0483	WL	03/24/2009	0001	18	-	18	25301		#		
Specific Conductance	µmhos/cm	0493	WL	03/25/2009	0001	45	-	55	43016		#		
Specific Conductance	µmhos/cm	0495	WL	03/19/2009	0001	4.6	-	5.6	6678		#		
Specific Conductance	µmhos/cm	0547	TS	03/26/2009	0001	0	-	0	21744		#		
Specific Conductance	µmhos/cm	0557	WL	03/24/2009	0001	40	-	40	30407		v		
Specific Conductance	µmhos/cm	0559	WL	03/24/2009	0001	19	-	19	12863		#		
Specific Conductance	µmhos/cm	0560	WL	03/24/2009	0001	31	-	31	91641		#		
Specific Conductance	µmhos/cm	0562	WL	03/17/2009	0001	1.3	-	2.3	6488		#		
Specific Conductance	µmhos/cm	0563	WL	03/17/2009	0001	4.6	-	5.6	5927		#		
Specific Conductance	µmhos/cm	0565	WL	03/17/2009	0001	4	-	5	1291		#		
Specific Conductance	µmhos/cm	0583	WL	03/25/2009	0001	18	-	18	16609		#		
Specific Conductance	µmhos/cm	0588	WL	03/25/2009	0001	34	-	34	41703		#		
Specific Conductance	µmhos/cm	0589	WL	03/25/2009	0001	52	-	52	78769		#		
Specific Conductance	µmhos/cm	0590	WL	03/17/2009	0001	1	-	2	8763		#		
Specific Conductance	µmhos/cm	0591	WL	03/18/2009	0001	3.9	-	4.9	16173		#		
Specific Conductance	µmhos/cm	0597	WL	03/19/2009	0001	9.3	-	10.3	12453		#		
Specific Conductance	µmhos/cm	0598	WL	03/19/2009	0001	9.1	-	10.1	11128		#		
Specific Conductance	µmhos/cm	0599	WL	03/19/2009	0001	9.4	-	10.4	11783		#		
Specific Conductance	µmhos/cm	0603	WL	03/17/2009	0001	9.2	-	10.2	19937		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers			Detection Limit	Uncertainty
				Date	ID					Lab	Data	QA		
Specific Conductance	µmhos/cm	0605	WL	03/18/2009	0001	9.4	-	10.4	22130			#		
Specific Conductance	µmhos/cm	0606	WL	03/17/2009	0001	9.3	-	10.3	25375			#		
Specific Conductance	µmhos/cm	0607	WL	03/17/2009	0001	9.6	-	10.6	10176			#		
Specific Conductance	µmhos/cm	0608	WL	03/17/2009	0001	8.9	-	9.9	22112			#		
Specific Conductance	µmhos/cm	0611	WL	03/17/2009	0001	2.2	-	3.2	3519			#		
Specific Conductance	µmhos/cm	0612	WL	03/17/2009	0001	4.3	-	5.3	5599			#		
Specific Conductance	µmhos/cm	0615	WL	03/18/2009	0001	1.4	-	2.4	5801			#		
Specific Conductance	µmhos/cm	0616	WL	03/18/2009	0001	5.3	-	6.3	10882			#		
Specific Conductance	µmhos/cm	0617	WL	03/19/2009	0001	1.7	-	2.7	10985			#		
Specific Conductance	µmhos/cm	0618	WL	03/19/2009	0001	5.3	-	6.3	11760			#		
Specific Conductance	µmhos/cm	0671	WL	03/25/2009	0001	14.4	-	44.4	18174			#		
Specific Conductance	µmhos/cm	0674	WL	03/25/2009	0001	15.1	-	45.1	20241			#		
Specific Conductance	µmhos/cm	0675	WL	03/25/2009	0001	16	-	46	20575			#		
Specific Conductance	µmhos/cm	0676	WL	03/25/2009	0001	15.9	-	45.9	18857			#		
Specific Conductance	µmhos/cm	0678	WL	03/25/2009	0001	16.3	-	46.3	16330			#		
Specific Conductance	µmhos/cm	0683	WL	03/25/2009	0001	27	-	27	18981			#		
Specific Conductance	µmhos/cm	0688	WL	03/25/2009	0001	31	-	31	20543			#		
Specific Conductance	µmhos/cm	0688	WL	03/25/2009	0001	39	-	39	23062			#		
Specific Conductance	µmhos/cm	0689	WL	03/25/2009	0001	46	-	46	92603			#		
Specific Conductance	µmhos/cm	0689	WL	03/25/2009	0001	54	-	54	94884			#		
Specific Conductance	µmhos/cm	0690	WL	03/18/2009	0001	3.3	-	4.3	7773			#		
Specific Conductance	µmhos/cm	0691	WL	03/18/2009	0001	6.5	-	7.5	9486			#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Specific Conductance	µmhos/cm	0692	WL	03/18/2009	0001	9.7	-	10.1	11713		#		
Specific Conductance	µmhos/cm	0696	WL	03/18/2009	0001	1.3	-	2.3	9782		#		
Specific Conductance	µmhos/cm	0725	WL	03/19/2009	0001	4.6	-	5.6	3373		#		
Specific Conductance	µmhos/cm	0726	WL	03/19/2009	0001	9.7	-	10.3	8865		#		
Specific Conductance	µmhos/cm	0780	WL	03/24/2009	0001	28	-	28	29756		#		
Specific Conductance	µmhos/cm	0782	WL	03/24/2009	0001	34	-	34	116948		#		
Specific Conductance	µmhos/cm	0786	WL	03/24/2009	0001	28	-	28	48891		#		
Specific Conductance	µmhos/cm	0787	WL	03/24/2009	0001	36	-	36	122926		#		
Specific Conductance	µmhos/cm	0790	WL	03/16/2009	0001	2	-	3	33481		#		
Specific Conductance	µmhos/cm	0791	WL	03/16/2009	0001	4.3	-	5.3	35186		#		
Specific Conductance	µmhos/cm	0792	WL	03/16/2009	0001	9.3	-	10.3	12086		#		
Specific Conductance	µmhos/cm	SMI-PW02	WL	03/26/2009	0001	20.04	-	60.04	49587		#		
Sulfate	mg/L	0239	SL	03/18/2009	0001	0.17	-	0.17	280	J	#	10	
Sulfate	mg/L	0243	SL	03/19/2009	0001	0.25	-	0.25	270		#	10	
Sulfate	mg/L	0245	SL	03/17/2009	0001	0.33	-	0.33	250		#	10	
Sulfate	mg/L	0259	SL	03/18/2009	0001	0.17	-	0.17	310		#	10	
Sulfate	mg/L	0274	SL	03/16/2009	0001	0.42	-	0.42	1300		#	25	
Sulfate	mg/L	0403	WL	03/24/2009	0001	18	-	18	6500		#	100	
Sulfate	mg/L	0403	WL	03/24/2009	0002	18	-	18	6500		#	100	
Sulfate	mg/L	0406	WL	03/25/2009	0001	13.12	-	18.04	3800		#	50	
Sulfate	mg/L	0406	WL	03/25/2009	0002	13.12	-	18.04	3900		#	50	
Sulfate	mg/L	0407	WL	03/24/2009	0001	17	-	17	4200		#	100	
Sulfate	mg/L	0470	WL	03/24/2009	0001	10.3	-	19.7	6400		#	100	
Sulfate	mg/L	0473	WL	03/24/2009	0001	10.3	-	19.7	7400		#	100	
Sulfate	mg/L	0474	WL	03/24/2009	0001	10.3	-	19.7	7500		#	100	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Sulfate	mg/L	0475	WL	03/24/2009	0001	10.3	-	19.7	5300		#	100	
Sulfate	mg/L	0478	WL	03/24/2009	0001	9.6	-	23.9	6200		#	100	
Sulfate	mg/L	0480	WL	03/24/2009	0001	18	-	18	9600		#	100	
Sulfate	mg/L	0483	WL	03/24/2009	0001	18	-	18	8500		#	100	
Sulfate	mg/L	0493	WL	03/25/2009	0001	45	-	55	16000		#	250	
Sulfate	mg/L	0495	WL	03/19/2009	0001	4.6	-	5.6	2900		#	50	
Sulfate	mg/L	0547	TS	03/26/2009	0001	0	-	0	8600		#	100	
Sulfate	mg/L	0557	WL	03/24/2009	0001	40	-	40	9600		#	100	
Sulfate	mg/L	0559	WL	03/24/2009	0001	19	-	19	5000		#	100	
Sulfate	mg/L	0560	WL	03/24/2009	0001	31	-	31	8200		#	100	
Sulfate	mg/L	0560	WL	03/24/2009	0002	31	-	31	8100		#	250	
Sulfate	mg/L	0562	WL	03/17/2009	0001	1.3	-	2.3	2300		#	50	
Sulfate	mg/L	0563	WL	03/17/2009	0001	4.6	-	5.6	4200		#	100	
Sulfate	mg/L	0565	WL	03/17/2009	0001	4	-	5	260		#	10	
Sulfate	mg/L	0583	WL	03/25/2009	0001	18	-	18	5100		#	100	
Sulfate	mg/L	0588	WL	03/25/2009	0001	34	-	34	9800		#	250	
Sulfate	mg/L	0589	WL	03/25/2009	0001	52	-	52	9200		#	250	
Sulfate	mg/L	0590	WL	03/17/2009	0001	1	-	2	4500		#	50	
Sulfate	mg/L	0591	WL	03/18/2009	0001	3.9	-	4.9	6200	J	#	100	
Sulfate	mg/L	0597	WL	03/19/2009	0001	9.3	-	10.3	5900		#	100	
Sulfate	mg/L	0598	WL	03/19/2009	0001	9.1	-	10.1	5000		#	50	
Sulfate	mg/L	0599	WL	03/19/2009	0001	9.4	-	10.4	5700		#	100	
Sulfate	mg/L	0603	WL	03/17/2009	0001	9.2	-	10.2	7300		#	100	
Sulfate	mg/L	0605	WL	03/18/2009	0001	9.4	-	10.4	7200	J	#	100	
Sulfate	mg/L	0606	WL	03/17/2009	0001	9.3	-	10.3	8400	J	#	100	
Sulfate	mg/L	0607	WL	03/17/2009	0001	9.6	-	10.6	5700	J	#	100	
Sulfate	mg/L	0608	WL	03/17/2009	0001	8.9	-	9.9	6500	J	#	100	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	Lab	Data	QA					
Sulfate	mg/L	0611	WL	03/17/2009	0001	2.2	-	3.2	750	J	#	25	
Sulfate	mg/L	0612	WL	03/17/2009	0001	4.3	-	5.3	1900	J	#	50	
Sulfate	mg/L	0615	WL	03/18/2009	0001	1.4	-	2.4	2100	J	#	50	
Sulfate	mg/L	0616	WL	03/18/2009	0001	5.3	-	6.3	4100	J	#	50	
Sulfate	mg/L	0617	WL	03/19/2009	0001	1.7	-	2.7	5200		#	50	
Sulfate	mg/L	0618	WL	03/19/2009	0001	5.3	-	6.3	5400		#	50	
Sulfate	mg/L	0671	WL	03/25/2009	0001	14.4	-	44.4	7800		#	100	
Sulfate	mg/L	0674	WL	03/25/2009	0001	15.1	-	45.1	8900		#	100	
Sulfate	mg/L	0675	WL	03/25/2009	0001	16	-	46	8800		#	100	
Sulfate	mg/L	0676	WL	03/25/2009	0001	15.9	-	45.9	8200		#	100	
Sulfate	mg/L	0678	WL	03/25/2009	0001	16.3	-	46.3	7000		#	100	
Sulfate	mg/L	0683	WL	03/25/2009	0001	27	-	27	8600		#	100	
Sulfate	mg/L	0683	WL	03/25/2009	0002	27	-	27	8200		#	100	
Sulfate	mg/L	0688	WL	03/25/2009	0001	31	-	31	8900		#	100	
Sulfate	mg/L	0689	WL	03/25/2009	0001	46	-	46	8300		#	250	
Sulfate	mg/L	0690	WL	03/18/2009	0001	3.3	-	4.3	4200		#	100	
Sulfate	mg/L	0691	WL	03/18/2009	0001	6.5	-	7.5	5300		#	100	
Sulfate	mg/L	0692	WL	03/18/2009	0001	9.7	-	10.1	7400		#	100	
Sulfate	mg/L	0696	WL	03/18/2009	0001	1.3	-	2.3	3800		#	50	
Sulfate	mg/L	0725	WL	03/19/2009	0001	4.6	-	5.6	1100		#	25	
Sulfate	mg/L	0726	WL	03/19/2009	0001	9.7	-	10.3	4700		#	50	
Sulfate	mg/L	0780	WL	03/24/2009	0001	28	-	28	11000		#	100	
Sulfate	mg/L	0782	WL	03/24/2009	0001	34	-	34	7000		#	1000	
Sulfate	mg/L	0786	WL	03/24/2009	0001	28	-	28	9000		#	250	
Sulfate	mg/L	0787	WL	03/24/2009	0001	36	-	36	5000		#	100	
Sulfate	mg/L	0790	WL	03/16/2009	0001	2	-	3	9000		#	250	
Sulfate	mg/L	0791	WL	03/16/2009	0001	4.3	-	5.3	9400		#	250	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	Lab	Data	QA					
Sulfate	mg/L	0792	WL	03/16/2009	0001	9.3	-	10.3	2800		#	100	
Sulfate	mg/L	SMI-PW02	WL	03/26/2009	0001	20.04	-	60.04	9200		#	250	
Temperature	C	0239	SL	03/18/2009	0001	0.17	-	0.17	10.45		#		
Temperature	C	0243	SL	03/19/2009	0001	0.25	-	0.25	13.24		#		
Temperature	C	0245	SL	03/17/2009	0001	0.33	-	0.33	20.42		#		
Temperature	C	0259	SL	03/18/2009	0001	0.17	-	0.17	16.6		#		
Temperature	C	0274	SL	03/16/2009	0001	0.42	-	0.42	20.59		#		
Temperature	C	0403	WL	03/24/2009	0001	18	-	18	13.82		#		
Temperature	C	0406	WL	03/25/2009	0001	13.12	-	18.04	14.96		#		
Temperature	C	0407	WL	03/24/2009	0001	17	-	17	14		#		
Temperature	C	0470	WL	03/24/2009	0001	10.3	-	19.7	15.18		#		
Temperature	C	0473	WL	03/24/2009	0001	10.3	-	19.7	15.05		#		
Temperature	C	0474	WL	03/24/2009	0001	10.3	-	19.7	14.66		#		
Temperature	C	0475	WL	03/24/2009	0001	10.3	-	19.7	14.68		#		
Temperature	C	0478	WL	03/24/2009	0001	9.6	-	23.9	14.84		#		
Temperature	C	0480	WL	03/24/2009	0001	18	-	18	14.6		#		
Temperature	C	0483	WL	03/24/2009	0001	18	-	18	14.36		#		
Temperature	C	0493	WL	03/25/2009	0001	45	-	55	14.73		#		
Temperature	C	0495	WL	03/19/2009	0001	4.6	-	5.6	13.21		#		
Temperature	C	0547	TS	03/26/2009	0001	0	-	0	16.1		#		
Temperature	C	0557	WL	03/24/2009	0001	40	-	40	15.22		#		
Temperature	C	0559	WL	03/24/2009	0001	19	-	19	12.85		#		
Temperature	C	0560	WL	03/24/2009	0001	31	-	31	15.24		#		
Temperature	C	0562	WL	03/17/2009	0001	1.3	-	2.3	8.91		#		
Temperature	C	0563	WL	03/17/2009	0001	4.6	-	5.6	9.7		#		
Temperature	C	0565	WL	03/17/2009	0001	4	-	5	8.48		#		
Temperature	C	0583	WL	03/25/2009	0001	18	-	18	13.88		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Temperature	C	0588	WL	03/25/2009	0001	34	-	34	14.01		#		
Temperature	C	0589	WL	03/25/2009	0001	52	-	52	14.14		#		
Temperature	C	0590	WL	03/17/2009	0001	1	-	2	16.53		#		
Temperature	C	0591	WL	03/18/2009	0001	3.9	-	4.9	8.34		#		
Temperature	C	0597	WL	03/19/2009	0001	9.3	-	10.3	13.54		#		
Temperature	C	0598	WL	03/19/2009	0001	9.1	-	10.1	11.8		#		
Temperature	C	0599	WL	03/19/2009	0001	9.4	-	10.4	12.36		#		
Temperature	C	0603	WL	03/17/2009	0001	9.2	-	10.2	12.04		#		
Temperature	C	0605	WL	03/18/2009	0001	9.4	-	10.4	10.62		#		
Temperature	C	0606	WL	03/17/2009	0001	9.3	-	10.3	9.74		#		
Temperature	C	0607	WL	03/17/2009	0001	9.6	-	10.6	10.59		#		
Temperature	C	0608	WL	03/17/2009	0001	8.9	-	9.9	9.54		#		
Temperature	C	0611	WL	03/17/2009	0001	2.2	-	3.2	9.27		#		
Temperature	C	0612	WL	03/17/2009	0001	4.3	-	5.3	8.72		#		
Temperature	C	0615	WL	03/18/2009	0001	1.4	-	2.4	10.2		#		
Temperature	C	0616	WL	03/18/2009	0001	5.3	-	6.3	9.82		#		
Temperature	C	0617	WL	03/19/2009	0001	1.7	-	2.7	12.64		#		
Temperature	C	0618	WL	03/19/2009	0001	5.3	-	6.3	10.81		#		
Temperature	C	0671	WL	03/25/2009	0001	14.4	-	44.4	15.17		#		
Temperature	C	0674	WL	03/25/2009	0001	15.1	-	45.1	15.18		#		
Temperature	C	0675	WL	03/25/2009	0001	16	-	46	15.16		#		
Temperature	C	0676	WL	03/25/2009	0001	15.9	-	45.9	14.52		#		
Temperature	C	0678	WL	03/25/2009	0001	16.3	-	46.3	14.93		#		
Temperature	C	0683	WL	03/25/2009	0001	27	-	27	13.54		#		
Temperature	C	0688	WL	03/25/2009	0001	31	-	31	14.57		#		
Temperature	C	0688	WL	03/25/2009	0001	39	-	39	14.61		#		
Temperature	C	0689	WL	03/25/2009	0001	54	-	54	14.76		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
 REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)		Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	Lab	Data		QA			
Temperature	C	0689	WL	03/25/2009	0001	46	- 46	15.09		#		
Temperature	C	0690	WL	03/18/2009	0001	3.3	- 4.3	23.76		#		
Temperature	C	0691	WL	03/18/2009	0001	6.5	- 7.5	16.72		#		
Temperature	C	0692	WL	03/18/2009	0001	9.7	- 10.1	14.52		#		
Temperature	C	0696	WL	03/18/2009	0001	1.3	- 2.3	18		#		
Temperature	C	0725	WL	03/19/2009	0001	4.6	- 5.6	11.75		#		
Temperature	C	0726	WL	03/19/2009	0001	9.7	- 10.3	11.9		#		
Temperature	C	0780	WL	03/24/2009	0001	28	- 28	14.66		#		
Temperature	C	0782	WL	03/24/2009	0001	34	- 34	14.67		#		
Temperature	C	0786	WL	03/24/2009	0001	28	- 28	14.79		#		
Temperature	C	0787	WL	03/24/2009	0001	36	- 36	15.38		#		
Temperature	C	0790	WL	03/16/2009	0001	2	- 3	13.37		#		
Temperature	C	0791	WL	03/16/2009	0001	4.3	- 5.3	14.82		#		
Temperature	C	0792	WL	03/16/2009	0001	9.3	- 10.3	15.9		#		
Temperature	C	SMI-PW02	WL	03/26/2009	0001	20.04	- 60.04	16.59		#		
Total Dissolved Solids	mg/L	0239	SL	03/18/2009	0001	0.17	- 0.17	780	J	#	40	
Total Dissolved Solids	mg/L	0243	SL	03/19/2009	0001	0.25	- 0.25	740		#	40	
Total Dissolved Solids	mg/L	0245	SL	03/17/2009	0001	0.33	- 0.33	710	J	#	40	
Total Dissolved Solids	mg/L	0259	SL	03/18/2009	0001	0.17	- 0.17	810	J	#	40	
Total Dissolved Solids	mg/L	0274	SL	03/16/2009	0001	0.42	- 0.42	3400	J	#	80	
Total Dissolved Solids	mg/L	0403	WL	03/24/2009	0001	18	- 18	12000		#	200	
Total Dissolved Solids	mg/L	0403	WL	03/24/2009	0002	18	- 18	12000		#	200	
Total Dissolved Solids	mg/L	0406	WL	03/25/2009	0001	13.12	- 18.04	7400		#	200	
Total Dissolved Solids	mg/L	0406	WL	03/25/2009	0002	13.12	- 18.04	7600		#	200	
Total Dissolved Solids	mg/L	0407	WL	03/24/2009	0001	17	- 17	9800		#	200	
Total Dissolved Solids	mg/L	0470	WL	03/24/2009	0001	10.3	- 19.7	17000		#	400	
Total Dissolved Solids	mg/L	0473	WL	03/24/2009	0001	10.3	- 19.7	15000		#	400	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Total Dissolved Solids	mg/L	0474	WL	03/24/2009	0001	10.3	-	19.7	15000		#	400	
Total Dissolved Solids	mg/L	0475	WL	03/24/2009	0001	10.3	-	19.7	13000		#	400	
Total Dissolved Solids	mg/L	0478	WL	03/24/2009	0001	9.6	-	23.9	15000		#	400	
Total Dissolved Solids	mg/L	0480	WL	03/24/2009	0001	18	-	18	20000		#	400	
Total Dissolved Solids	mg/L	0483	WL	03/24/2009	0001	18	-	18	18000		#	400	
Total Dissolved Solids	mg/L	0493	WL	03/25/2009	0001	45	-	55	34000		#	400	
Total Dissolved Solids	mg/L	0495	WL	03/19/2009	0001	4.6	-	5.6	5900		#	200	
Total Dissolved Solids	mg/L	0547	TS	03/26/2009	0001	0	-	0	18000		#	400	
Total Dissolved Solids	mg/L	0557	WL	03/24/2009	0001	40	-	40	22000		#	400	
Total Dissolved Solids	mg/L	0559	WL	03/24/2009	0001	19	-	19	9500		#	200	
Total Dissolved Solids	mg/L	0560	WL	03/24/2009	0001	31	-	31	62000		#	1000	
Total Dissolved Solids	mg/L	0560	WL	03/24/2009	0002	31	-	31	63000		#	2000	
Total Dissolved Solids	mg/L	0562	WL	03/17/2009	0001	1.3	-	2.3	4300	J	#	200	
Total Dissolved Solids	mg/L	0563	WL	03/17/2009	0001	4.6	-	5.6	7600		#	200	
Total Dissolved Solids	mg/L	0565	WL	03/17/2009	0001	4	-	5	760		#	20	
Total Dissolved Solids	mg/L	0583	WL	03/25/2009	0001	18	-	18	13000		#	200	
Total Dissolved Solids	mg/L	0588	WL	03/25/2009	0001	34	-	34	30000		#	1000	
Total Dissolved Solids	mg/L	0589	WL	03/25/2009	0001	52	-	52	56000		#	1000	
Total Dissolved Solids	mg/L	0590	WL	03/17/2009	0001	1	-	2	8700		#	200	
Total Dissolved Solids	mg/L	0591	WL	03/18/2009	0001	3.9	-	4.9	12000	J	#	400	
Total Dissolved Solids	mg/L	0597	WL	03/19/2009	0001	9.3	-	10.3	11000		#	200	
Total Dissolved Solids	mg/L	0598	WL	03/19/2009	0001	9.1	-	10.1	8900		#	200	
Total Dissolved Solids	mg/L	0599	WL	03/19/2009	0001	9.4	-	10.4	10000		#	200	
Total Dissolved Solids	mg/L	0603	WL	03/17/2009	0001	9.2	-	10.2	16000		#	400	
Total Dissolved Solids	mg/L	0605	WL	03/18/2009	0001	9.4	-	10.4	16000	J	#	400	
Total Dissolved Solids	mg/L	0606	WL	03/17/2009	0001	9.3	-	10.3	18000	J	#	400	
Total Dissolved Solids	mg/L	0607	WL	03/17/2009	0001	9.6	-	10.6	13000	J	#	400	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers			Detection Limit	Uncertainty
				Date	ID					Lab	Data	QA		
Total Dissolved Solids	mg/L	0608	WL	03/17/2009	0001	8.9	-	9.9	15000		J	#	400	
Total Dissolved Solids	mg/L	0611	WL	03/17/2009	0001	2.2	-	3.2	1700		J	#	40	
Total Dissolved Solids	mg/L	0612	WL	03/17/2009	0001	4.3	-	5.3	3800		J	#	200	
Total Dissolved Solids	mg/L	0615	WL	03/18/2009	0001	1.4	-	2.4	4000		J	#	200	
Total Dissolved Solids	mg/L	0616	WL	03/18/2009	0001	5.3	-	6.3	6900		J	#	200	
Total Dissolved Solids	mg/L	0617	WL	03/19/2009	0001	1.7	-	2.7	9300			#	200	
Total Dissolved Solids	mg/L	0618	WL	03/19/2009	0001	5.3	-	6.3	9500			#	200	
Total Dissolved Solids	mg/L	0671	WL	03/25/2009	0001	14.4	-	44.4	14000			#	400	
Total Dissolved Solids	mg/L	0674	WL	03/25/2009	0001	15.1	-	45.1	16000			#	400	
Total Dissolved Solids	mg/L	0675	WL	03/25/2009	0001	16	-	46	16000			#	400	
Total Dissolved Solids	mg/L	0676	WL	03/25/2009	0001	15.9	-	45.9	15000			#	400	
Total Dissolved Solids	mg/L	0678	WL	03/25/2009	0001	16.3	-	46.3	12000			#	200	
Total Dissolved Solids	mg/L	0683	WL	03/25/2009	0001	27	-	27	15000			#	400	
Total Dissolved Solids	mg/L	0683	WL	03/25/2009	0002	27	-	27	15000			#	400	
Total Dissolved Solids	mg/L	0688	WL	03/25/2009	0001	31	-	31	16000			#	400	
Total Dissolved Solids	mg/L	0689	WL	03/25/2009	0001	46	-	46	66000			#	2000	
Total Dissolved Solids	mg/L	0690	WL	03/18/2009	0001	3.3	-	4.3	9800		J	#	200	
Total Dissolved Solids	mg/L	0691	WL	03/18/2009	0001	6.5	-	7.5	10000		J	#	200	
Total Dissolved Solids	mg/L	0692	WL	03/18/2009	0001	9.7	-	10.1	13000		J	#	400	
Total Dissolved Solids	mg/L	0696	WL	03/18/2009	0001	1.3	-	2.3	6200			#	200	
Total Dissolved Solids	mg/L	0725	WL	03/19/2009	0001	4.6	-	5.6	2300			#	80	
Total Dissolved Solids	mg/L	0726	WL	03/19/2009	0001	9.7	-	10.3	8200			#	200	
Total Dissolved Solids	mg/L	0780	WL	03/24/2009	0001	28	-	28	22000			#	400	
Total Dissolved Solids	mg/L	0782	WL	03/24/2009	0001	34	-	34	83000			#	2000	
Total Dissolved Solids	mg/L	0786	WL	03/24/2009	0001	28	-	28	35000			#	1000	
Total Dissolved Solids	mg/L	0787	WL	03/24/2009	0001	36	-	36	89000			#	2000	
Total Dissolved Solids	mg/L	0790	WL	03/16/2009	0001	2	-	3	24000		J	#	400	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Total Dissolved Solids	mg/L	0791	WL	03/16/2009	0001	4.3	-	5.3	26000	J	#	400	
Total Dissolved Solids	mg/L	0792	WL	03/16/2009	0001	9.3	-	10.3	9100	J	#	400	
Total Dissolved Solids	mg/L	SMI-PW02	WL	03/26/2009	0001	20.04	-	60.04	38000		#	1000	
Turbidity	NTU	0239	SL	03/18/2009	0001	0.17	-	0.17	32.9		#		
Turbidity	NTU	0243	SL	03/19/2009	0001	0.25	-	0.25	65.5		#		
Turbidity	NTU	0245	SL	03/17/2009	0001	0.33	-	0.33	88.2		#		
Turbidity	NTU	0259	SL	03/18/2009	0001	0.17	-	0.17	749		#		
Turbidity	NTU	0274	SL	03/16/2009	0001	0.42	-	0.42	251		#		
Turbidity	NTU	0403	WL	03/24/2009	0001	18	-	18	0.9		#		
Turbidity	NTU	0406	WL	03/25/2009	0001	13.12	-	18.04	37.9		#		
Turbidity	NTU	0407	WL	03/24/2009	0001	17	-	17	0.8		#		
Turbidity	NTU	0470	WL	03/24/2009	0001	10.3	-	19.7	17.5		#		
Turbidity	NTU	0473	WL	03/24/2009	0001	10.3	-	19.7	3.58		#		
Turbidity	NTU	0474	WL	03/24/2009	0001	10.3	-	19.7	1.74		#		
Turbidity	NTU	0475	WL	03/24/2009	0001	10.3	-	19.7	4.18		#		
Turbidity	NTU	0478	WL	03/24/2009	0001	9.6	-	23.9	11.56		#		
Turbidity	NTU	0480	WL	03/24/2009	0001	18	-	18	2.01		#		
Turbidity	NTU	0483	WL	03/24/2009	0001	18	-	18	2.03		#		
Turbidity	NTU	0493	WL	03/25/2009	0001	45	-	55	2.83		#		
Turbidity	NTU	0495	WL	03/19/2009	0001	4.6	-	5.6	254		#		
Turbidity	NTU	0547	TS	03/26/2009	0001	0	-	0	7.82		#		
Turbidity	NTU	0557	WL	03/24/2009	0001	40	-	40	2.97		#		
Turbidity	NTU	0559	WL	03/24/2009	0001	19	-	19	1.64		#		
Turbidity	NTU	0560	WL	03/24/2009	0001	31	-	31	1.44		#		
Turbidity	NTU	0562	WL	03/17/2009	0001	1.3	-	2.3	52.2		#		
Turbidity	NTU	0565	WL	03/17/2009	0001	4	-	5	28.5		#		
Turbidity	NTU	0583	WL	03/25/2009	0001	18	-	18	2.59		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
 REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Turbidity	NTU	0588	WL	03/25/2009	0001	34	-	34	2.7		#		
Turbidity	NTU	0589	WL	03/25/2009	0001	52	-	52	1.37		#		
Turbidity	NTU	0590	WL	03/17/2009	0001	1	-	2	204		#		
Turbidity	NTU	0591	WL	03/18/2009	0001	3.9	-	4.9	69.1		#		
Turbidity	NTU	0597	WL	03/19/2009	0001	9.3	-	10.3	4.15		#		
Turbidity	NTU	0598	WL	03/19/2009	0001	9.1	-	10.1	7.58		#		
Turbidity	NTU	0599	WL	03/19/2009	0001	9.4	-	10.4	47.7		#		
Turbidity	NTU	0603	WL	03/17/2009	0001	9.2	-	10.2	136		#		
Turbidity	NTU	0605	WL	03/18/2009	0001	9.4	-	10.4	8.02		#		
Turbidity	NTU	0606	WL	03/17/2009	0001	9.3	-	10.3	14.9		#		
Turbidity	NTU	0607	WL	03/17/2009	0001	9.6	-	10.6	228		#		
Turbidity	NTU	0608	WL	03/17/2009	0001	8.9	-	9.9	64		#		
Turbidity	NTU	0611	WL	03/17/2009	0001	2.2	-	3.2	193		#		
Turbidity	NTU	0612	WL	03/17/2009	0001	4.3	-	5.3	24.2		#		
Turbidity	NTU	0616	WL	03/18/2009	0001	5.3	-	6.3	4.86		#		
Turbidity	NTU	0618	WL	03/19/2009	0001	5.3	-	6.3	3.28		#		
Turbidity	NTU	0671	WL	03/25/2009	0001	14.4	-	44.4	8.46		#		
Turbidity	NTU	0674	WL	03/25/2009	0001	15.1	-	45.1	2.96		#		
Turbidity	NTU	0675	WL	03/25/2009	0001	16	-	46	1.04		#		
Turbidity	NTU	0676	WL	03/25/2009	0001	15.9	-	45.9	1.62		#		
Turbidity	NTU	0683	WL	03/25/2009	0001	27	-	27	1.97		#		
Turbidity	NTU	0688	WL	03/25/2009	0001	31	-	31	1.02		#		
Turbidity	NTU	0688	WL	03/25/2009	0001	39	-	39	2.58		#		
Turbidity	NTU	0689	WL	03/25/2009	0001	54	-	54	2.27		#		
Turbidity	NTU	0689	WL	03/25/2009	0001	46	-	46	2.57		#		
Turbidity	NTU	0690	WL	03/18/2009	0001	3.3	-	4.3	130		#		
Turbidity	NTU	0691	WL	03/18/2009	0001	6.5	-	7.5	146		#		

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
 REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID					Lab	Data QA		
Turbidity	NTU	0692	WL	03/18/2009	0001	9.7	-	10.1	133		#		
Turbidity	NTU	0726	WL	03/19/2009	0001	9.7	-	10.3	66.8		#		
Turbidity	NTU	0780	WL	03/24/2009	0001	28	-	28	1.61		#		
Turbidity	NTU	0782	WL	03/24/2009	0001	34	-	34	0.91		#		
Turbidity	NTU	0786	WL	03/24/2009	0001	28	-	28	2.16		#		
Turbidity	NTU	0787	WL	03/24/2009	0001	36	-	36	1.76		#		
Turbidity	NTU	0790	WL	03/16/2009	0001	2	-	3	1.02		#		
Turbidity	NTU	0791	WL	03/16/2009	0001	4.3	-	5.3	2		#		
Turbidity	NTU	0792	WL	03/16/2009	0001	9.3	-	10.3	108		#		
Turbidity	NTU	SMI-PW02	WL	03/26/2009	0001	20.04	-	60.04	19.5		#		
Uranium	mg/L	0239	SL	03/18/2009	0001	0.17	-	0.17	0.025	J	#	3.1E-006	
Uranium	mg/L	0243	SL	03/19/2009	0001	0.25	-	0.25	0.022		#	3.1E-006	
Uranium	mg/L	0245	SL	03/17/2009	0001	0.33	-	0.33	0.018		#	3.1E-006	
Uranium	mg/L	0259	SL	03/18/2009	0001	0.17	-	0.17	0.035		#	3.1E-006	
Uranium	mg/L	0274	SL	03/16/2009	0001	0.42	-	0.42	0.34		#	3.1E-005	
Uranium	mg/L	0403	WL	03/24/2009	0001	18	-	18	2.2		#	0.00015	
Uranium	mg/L	0403	WL	03/24/2009	0002	18	-	18	2.2		#	0.00015	
Uranium	mg/L	0406	WL	03/25/2009	0001	13.12	-	18.04	1.4		#	0.00015	
Uranium	mg/L	0406	WL	03/25/2009	0002	13.12	-	18.04	1.3		#	0.00015	
Uranium	mg/L	0407	WL	03/24/2009	0001	17	-	17	1.1		#	0.00015	
Uranium	mg/L	0470	WL	03/24/2009	0001	10.3	-	19.7	2.5		#	0.00015	
Uranium	mg/L	0473	WL	03/24/2009	0001	10.3	-	19.7	2.3		#	0.00015	
Uranium	mg/L	0474	WL	03/24/2009	0001	10.3	-	19.7	2.3		#	0.00015	
Uranium	mg/L	0475	WL	03/24/2009	0001	10.3	-	19.7	2.3		#	0.00015	
Uranium	mg/L	0478	WL	03/24/2009	0001	9.6	-	23.9	2.2		#	0.00015	
Uranium	mg/L	0480	WL	03/24/2009	0001	18	-	18	2.8		#	0.00015	
Uranium	mg/L	0483	WL	03/24/2009	0001	18	-	18	2.3		#	0.00015	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
 REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	Lab	Data	QA					
Uranium	mg/L	0493	WL	03/25/2009	0001	45	-	55	3.1		#	0.00015	
Uranium	mg/L	0495	WL	03/19/2009	0001	4.6	-	5.6	2.4		#	0.00015	
Uranium	mg/L	0547	TS	03/26/2009	0001	0	-	0	2.5		#	0.00015	
Uranium	mg/L	0557	WL	03/24/2009	0001	40	-	40	3		#	0.00015	
Uranium	mg/L	0559	WL	03/24/2009	0001	19	-	19	1.7		#	0.00015	
Uranium	mg/L	0560	WL	03/24/2009	0001	31	-	31	1.7		#	0.00015	
Uranium	mg/L	0560	WL	03/24/2009	0002	31	-	31	1.5		#	0.00015	
Uranium	mg/L	0562	WL	03/17/2009	0001	1.3	-	2.3	0.58		#	0.00015	
Uranium	mg/L	0563	WL	03/17/2009	0001	4.6	-	5.6	0.58		#	3.1E-005	
Uranium	mg/L	0565	WL	03/17/2009	0001	4	-	5	0.0098		#	3.1E-006	
Uranium	mg/L	0583	WL	03/25/2009	0001	18	-	18	2.6		#	0.00015	
Uranium	mg/L	0588	WL	03/25/2009	0001	34	-	34	2.7		#	0.00015	
Uranium	mg/L	0589	WL	03/25/2009	0001	52	-	52	2.1		#	0.00015	
Uranium	mg/L	0590	WL	03/17/2009	0001	1	-	2	2		#	0.00015	
Uranium	mg/L	0591	WL	03/18/2009	0001	3.9	-	4.9	1.6	J	#	0.00015	
Uranium	mg/L	0597	WL	03/19/2009	0001	9.3	-	10.3	1.7		#	0.00015	
Uranium	mg/L	0598	WL	03/19/2009	0001	9.1	-	10.1	2.2		#	0.00015	
Uranium	mg/L	0599	WL	03/19/2009	0001	9.4	-	10.4	1.9		#	0.00015	
Uranium	mg/L	0603	WL	03/17/2009	0001	9.2	-	10.2	1.9		#	0.00015	
Uranium	mg/L	0605	WL	03/18/2009	0001	9.4	-	10.4	1.6	J	#	0.00015	
Uranium	mg/L	0606	WL	03/17/2009	0001	9.3	-	10.3	1.8	J	#	0.00015	
Uranium	mg/L	0607	WL	03/17/2009	0001	9.6	-	10.6	1.4	J	#	0.00015	
Uranium	mg/L	0608	WL	03/17/2009	0001	8.9	-	9.9	1.3	J	#	0.00015	
Uranium	mg/L	0611	WL	03/17/2009	0001	2.2	-	3.2	0.048	J	#	3.1E-006	
Uranium	mg/L	0612	WL	03/17/2009	0001	4.3	-	5.3	0.36	J	#	3.1E-005	
Uranium	mg/L	0615	WL	03/18/2009	0001	1.4	-	2.4	0.42	J	#	3.1E-005	
Uranium	mg/L	0616	WL	03/18/2009	0001	5.3	-	6.3	0.88	J	#	0.00015	

Appendix C. Water Quality Data (continued)

General Water Quality Data by Parameter (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/11/2009

Parameter	Units	Location ID	Location Type	Sample		Depth Range (Ft BLS)			Result	Qualifiers		Detection Limit	Uncertainty
				Date	ID	Lab	Data	QA					
Uranium	mg/L	0617	WL	03/19/2009	0001	1.7	-	2.7	2		#	0.00015	
Uranium	mg/L	0618	WL	03/19/2009	0001	5.3	-	6.3	1.9		#	0.00015	
Uranium	mg/L	0671	WL	03/25/2009	0001	14.4	-	44.4	2.3		#	0.00015	
Uranium	mg/L	0674	WL	03/25/2009	0001	15.1	-	45.1	2.5		#	0.00015	
Uranium	mg/L	0675	WL	03/25/2009	0001	16	-	46	2.4		#	0.00015	
Uranium	mg/L	0676	WL	03/25/2009	0001	15.9	-	45.9	2.1		#	0.00015	
Uranium	mg/L	0678	WL	03/25/2009	0001	16.3	-	46.3	2		#	0.00015	
Uranium	mg/L	0683	WL	03/25/2009	0001	27	-	27	2.3	J	#	0.00015	
Uranium	mg/L	0683	WL	03/25/2009	0002	27	-	27	2.2		#	0.00015	
Uranium	mg/L	0688	WL	03/25/2009	0001	31	-	31	2.3		#	0.00015	
Uranium	mg/L	0689	WL	03/25/2009	0001	46	-	46	1.4		#	0.00015	
Uranium	mg/L	0690	WL	03/18/2009	0001	3.3	-	4.3	2.9		#	0.00015	
Uranium	mg/L	0691	WL	03/18/2009	0001	6.5	-	7.5	2		#	0.00015	
Uranium	mg/L	0692	WL	03/18/2009	0001	9.7	-	10.1	2.3		#	0.00015	
Uranium	mg/L	0696	WL	03/18/2009	0001	1.3	-	2.3	1.1		#	0.00015	
Uranium	mg/L	0725	WL	03/19/2009	0001	4.6	-	5.6	0.36		#	1.5E-005	
Uranium	mg/L	0726	WL	03/19/2009	0001	9.7	-	10.3	1.7		#	0.00015	
Uranium	mg/L	0780	WL	03/24/2009	0001	28	-	28	3		#	0.00015	
Uranium	mg/L	0782	WL	03/24/2009	0001	34	-	34	0.61		#	0.00015	
Uranium	mg/L	0786	WL	03/24/2009	0001	28	-	28	2.4		#	0.00015	
Uranium	mg/L	0787	WL	03/24/2009	0001	36	-	36	0.12	J	#	1.5E-005	
Uranium	mg/L	0790	WL	03/16/2009	0001	2	-	3	2.9		#	0.00015	
Uranium	mg/L	0791	WL	03/16/2009	0001	4.3	-	5.3	2.6		#	0.00015	
Uranium	mg/L	0792	WL	03/16/2009	0001	9.3	-	10.3	0.19		#	3.1E-005	
Uranium	mg/L	SMI-PW02	WL	03/26/2009	0001	20.04	-	60.04	2.8		#	0.00015	

BLS = below land surface; C = centigrade; μ mhos/cm = micromhos per centimeter; mg/L = milligrams per liter; mV = millivolt; NTU = nephelometric turbidity unit; SL = surface location; S.U. = standard unit; TS = treatment system; WL = well

Appendix C. Water Quality Data (continued)

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

* Replicate analysis not within control limits.
> Result above upper detection limit.
A Tentatively identified compound is a suspected aldol-condensation product.
B Inorganic: Result is between the instrument detection limit and contract-required detection limit. Organic: Analyte also found in MB.
D Analyte determined in diluted sample.
E Inorganic: Estimate value because of interference; see case narrative.
H Holding time expired; value suspect.
I Increased detection limit due to required dilution.
J Estimated.
N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound.
P > 25% difference in detected pesticide or Aroclor concentrations between two columns.
U Analytical result below detection limit.
W Postdigestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z Laboratory defined qualifier; see case narrative.

DATA QUALIFIERS:

F	Low-flow sampling method used.	G	Possible grout contamination; pH > 9.	J	Estimated value.
L	Less than three bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

QA QUALIFIER:

Validated according to quality assurance guidelines.

Appendix D.
Water Level Data

Appendix D. Water Level Data

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site
REPORT DATE: 4/23/2009

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0403	O	3968.95	03/24/2009		16.51	3952.44	
0406	O	3969.91	03/25/2009		15.42	3954.49	
0407	O	3969.09	03/24/2009		16.93	3952.16	
0470		3964.12	03/24/2009		14.55	3949.57	
0473		3964.66	03/24/2009		14.37	3950.29	
0474		3964.99	03/24/2009		14.08	3950.91	
0475		3964.97	03/24/2009		16.17	3948.8	
0478		3964.91	03/24/2009		15.3	3949.61	
0480		3968.65	03/24/2009		16.69	3951.96	
0483		3968.9	03/24/2009		17.08	3951.82	
0493		3967.89	03/25/2009		13.6	3954.29	
0495		3959.89	03/19/2009		5.77	3954.12	
0557		3968.85	03/24/2009		15.52	3953.33	
0559		3969.92	03/24/2009		17.62	3952.3	
0560		3968.77	03/24/2009		15.45	3953.32	
0562		3955.37	03/17/2009		3.33	3952.04	
0563		3958.04	03/17/2009		5.93	3952.11	
0565		3955.47	03/17/2009		3.21	3952.26	
0583		3969.64	03/25/2009		16.3	3953.34	
0588		3968.82	03/25/2009		15.39	3953.43	
0589		3968.87	03/25/2009		15.03	3953.84	
0590		3956.19	03/17/2009		3	3953.19	
0591		3955.2	03/18/2009		1.86	3953.34	
0597		3959.11	03/19/2009		5.03	3954.08	
0598		3957.01	03/19/2009		3.09	3953.92	
0599		3956.52	03/19/2009		3.92	3952.6	
0603		3955.1	03/17/2009		1.75	3953.35	

Appendix D. Water Level Data (continued)

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site
REPORT DATE: 4/23/2009

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0605		3956.92	03/18/2009		3.96	3952.96	
0606		3955.69	03/17/2009		3.36	3952.33	
0607		3955.62	03/17/2009		3.31	3952.31	
0608		3955.71	03/17/2009		3.49	3952.22	
0611		3957.48	03/17/2009		5.48	3952	
0612		3955.27	03/17/2009		5.5	3949.77	
0615		3956.78	03/18/2009		3.79	3952.99	
0616		3955.97	03/18/2009		3	3952.97	
0617		3955.85	03/19/2009		2.4	3953.45	
0618		3955.16	03/19/2009		1.6	3953.56	
0671		3969.5	03/25/2009		17.65	3951.85	
0674		3969.49	03/25/2009		18.13	3951.36	
0675		3969.64	03/25/2009		17.36	3952.28	
0676		3969.69	03/25/2009		17.13	3952.56	
0678		3969.65	03/25/2009		16.91	3952.74	
0683		3970.73	03/25/2009		17.63	3953.1	
0688		3968.66	03/25/2009		15.91	3952.75	
0689		3968.66	03/25/2009		15.65	3953.01	
0690		3963.83	03/18/2009		5.71	3958.12	
0691		3962.7	03/18/2009		5.25	3957.45	
0692		3962.29	03/18/2009		4.4	3957.89	
0696		3956.42	03/18/2009		3.36	3953.06	
0725		3959.95	03/19/2009		5.97	3953.98	
0726		3958.81	03/19/2009		6.26	3952.55	
0780		3968.45	03/24/2009		16.05	3952.4	
0782		3968.46	03/24/2009		16.12	3952.34	
0786		3968.14	03/24/2009		15.87	3952.27	
0787		3968.43	03/24/2009		15.73	3952.7	

Appendix D. Water Level Data (continued)

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site
REPORT DATE: 4/23/2009

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0790		3955.2	03/16/2009		6.58	3948.62	
0791		3954.76	03/16/2009		8.45	3946.31	
0792		3954.84	03/16/2009		5.9	3948.94	
SMI-PW02	O	3967.48	03/26/2009		1	3966.48	

Flow Codes: B = background; C = cross gradient; D = downgradient; O = on site; U = upgradient
Water Level Flags: D = dry

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report



DATE: April 13, 2009
TO: K. Pill
FROM: E. Glowiak
SUBJECT: March Monthly Sampling Trip Report

Site: Moab March 2009 Interim Action Well Field Monthly Sampling

Date of Sampling Event: March 16-26, 2009

Team Members: James Ritchey, Elizabeth Glowiak

RIN Number Assigned: All samples were assigned to RIN 0903028.

Sample Shipment: All samples were shipped in a cooler overnight via UPS to Paragon Analytics, Inc., from Moab, Utah, on March 19 and 26, 2009 (Tracking Nos. 92446148 and 98537119).

March 2009 CF1 Sampling

Number of Locations Sampled: Six extraction wells (0470, 0473, 0474, 0475, 0478, and SMI-PW02), seven observation wells (0403, 0407, 0480, 0483, 0557, 0559, and 0560), nine well points (0562, 0563, 0606, 0608, 0611, 0612, 0564, 0565, and 0607), one surface water location (0245), and one evaporation pond location (0547) was sampled. Including two duplicates, a total of 26 samples were collected during the March 2009 monthly sampling event.

Locations Not Sampled: Surface water location 0216 and well point 0564 were dry and were not sampled.

Field Variance: None

Quality-Control Sample Cross Reference: Following are the false identifications assigned to the quality-control samples:

False ID	True ID	Sample Type	Associated Matrix	Ticket Number
2000	0560	Duplicate from 31 ft bgs	Ground Water	MAR 047
2001	0403	Duplicate from 18 ft bgs	Ground Water	MAR 052

ID = identification

Attachment 1. Interim Action Well Field Monthly Sampling Trip Report (continued)

Location-Specific Information – CF1 Extraction Wells: Extraction wells were sampled using dedicated submersible pumps.

Well No.	Date	Time	Water Level (ft btoc)	Pump Intake (ft bgs)
0470	03/24/2009	09:05	14.55	18
0473	03/24/2009	09:18	14.37	18
0474	03/24/2009	09:26	14.08	18
0475	03/24/2009	09:34	16.17	18
0478	03/24/2009	09:46	15.30	23
SMI-PW02	03/26/2009	12:00	N/A*	55

btoc = below top of casing

*Water level access port was blocked by equipment.

Location-Specific Information – Observation Wells: All observation wells were sampled using micropurge techniques with a peristaltic pump and dedicated downhole and pump-head tubing. Sample depths and water levels for each observation well are listed below.

Well No.	Date	Time	Depth to Water (ft btoc)	Sample Depth (ft bgs)
0403	03/24/2009	15:58	16.51	18
0407	03/24/2009	13:50	16.93	17
0480	03/24/2009	15:19	16.69	18
0483	03/24/2009	14:54	17.08	18
0557	03/24/2009	15:36	15.52	40
0559	03/24/2009	14:10	17.62	19
0560	03/24/2009	14:30	15.45	31

btoc = below top of casing

Location-Specific Information – Well Point Sampling: The table below presents the water level, stick up height, and depth to the river surface prior to the initial purge.

WP No.	Date	Time	Depth to Water (ft btoc)	Stick Up Height (ft)	Depth to River Surface (ft btoc)
0562	03/17/2009	09:58	3.33	2.34	Dry
0563	03/17/2009	09:32	5.93	2.90	Dry
0606	03/17/2009	09:46	3.36	1.58	Dry
0608	03/17/2009	10:42	3.49	0.61	Dry
0611	03/17/2009	10:55	5.48	2.15	Dry
0612	03/17/2009	10:29	5.50	2.33	Dry
0565	03/17/2009	13:57	3.21	1.72	Dry
0607	03/17/2009	14:08	3.31	1.83	Dry

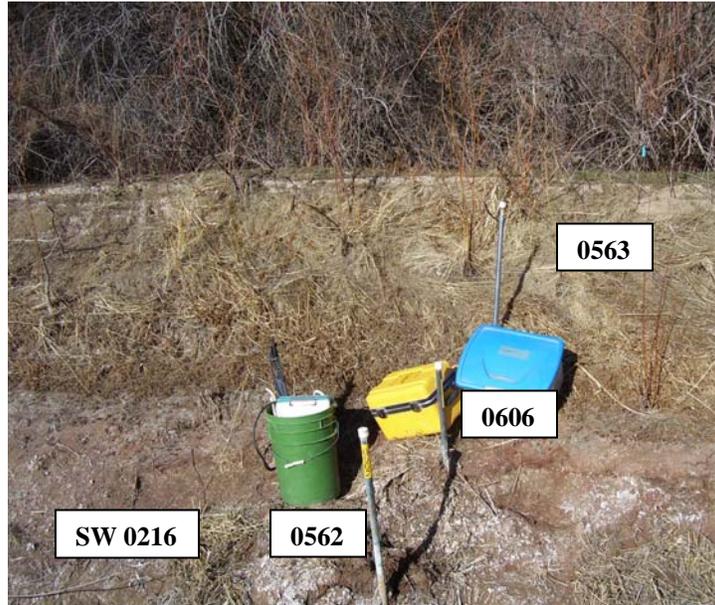
btoc = below top of casing; WP = well point

Location-Specific Information – Surface Water Sampling: The table below represents the surface water locations sampled.

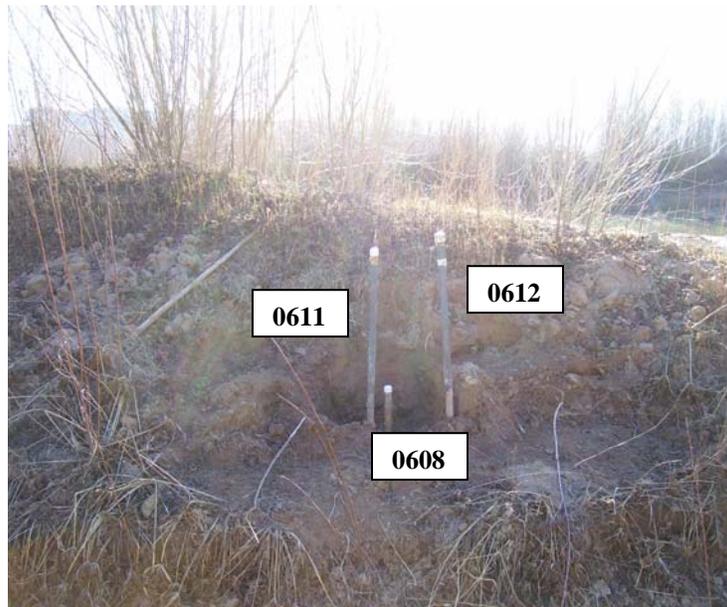
SW No.	Date	Time	Depth (inches below surface)	Characteristics
0245	03/17/2009	14:21	4	Open up river, closed down river, stagnant

SW = surface water

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)

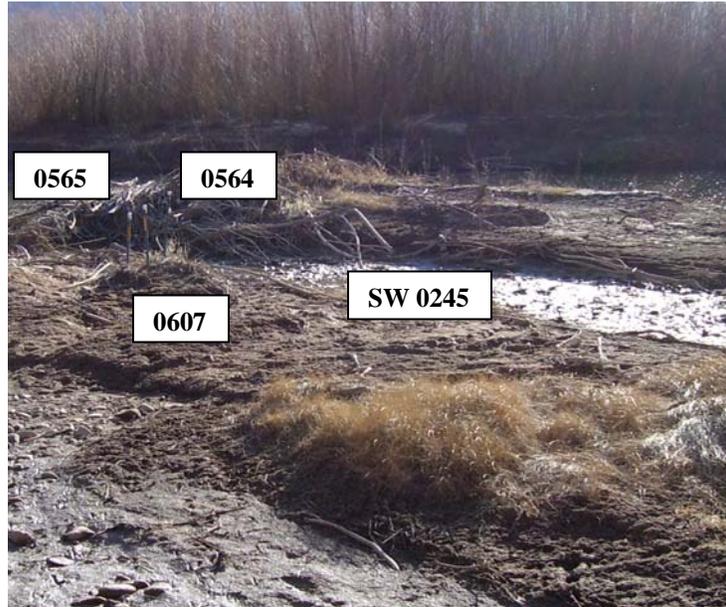


CF1 River Bank Well Points and Dry Surface Water Location 0216



CF1 Intermediate Well Points

**Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)**



CF1 River Edge Well Points and Surface Water Location 0245

March 2009 CF2 Sampling

Number of Locations Sampled: Three observation wells (0583, 0588, and 0589), six well points (0590, 0591, 0603, 0605, 0615, and 0616), and one surface water location (0239) were sampled. A total of 10 locations were sampled during the March 2009 monthly sampling event.

Locations Not Sampled: Surface water locations 0236 and 0240 were dry and not sampled.

Field Variance: None

Location-Specific Information – Observation Wells: All observation wells were sampled using micropurge techniques with a peristaltic pump and dedicated pump-head and downhole tubing. Sample depths and water levels for each observation well are listed below.

Well No.	Date	Time	Depth to Water (ft btoc)	Sample Depth (ft bgs)
0583	03/25/2009	09:00	16.30	18
0588	03/25/2009	09:06	15.39	34
0589	03/25/2009	09:24	15.03	52

btoc = below top of casing

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)

Location-Specific Information – Well Point Sampling: The table below presents the water level, stick up height, and depth to the river surface prior to the initial purge.

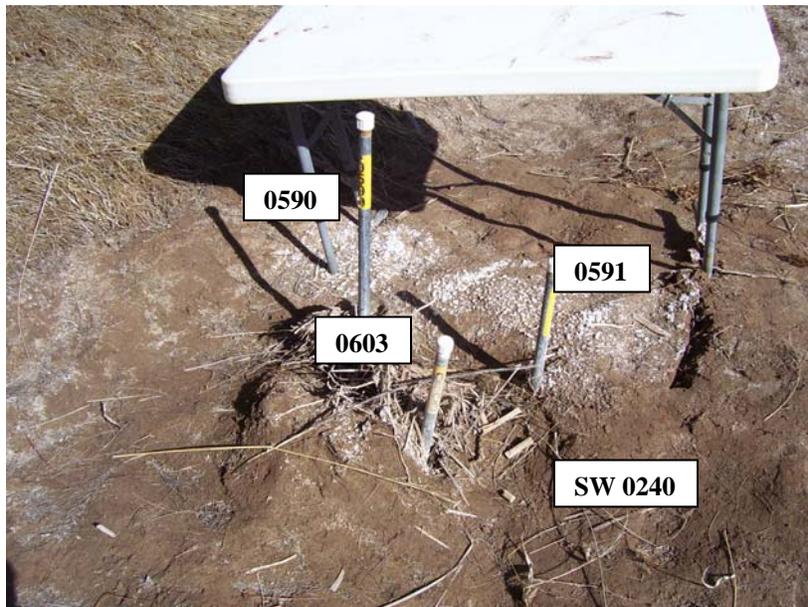
WP No.	Date	Time	Depth to Water (ft btoc)	Stick Up Height (ft)	Depth to River Surface (ft btoc)
0590	03/17/2009	15:02	3.00	2.10	Dry
0591	03/18/2009	08:20	1.86	2.00	Dry
0603	03/17/2009	15:09	1.75	1.09	Dry
0605	03/18/2009	09:11	3.96	1.60	Dry
0615	03/18/2009	09:00	3.79	1.60	Dry
0616	03/18/2009	09:21	3.00	0.80	Dry

btoc = below top of casing; WP = well point

Location-Specific Information – Surface Water Sampling: The table below represents the surface water locations sampled.

SW No.	Date	Time	Depth (inches below surface)	Characteristics
0239	03/18/2009	09:40	2	Taken 2 ft off bank, slow flow, muddy substrate, main river channel

btoc = below top of casing; SW = surface water

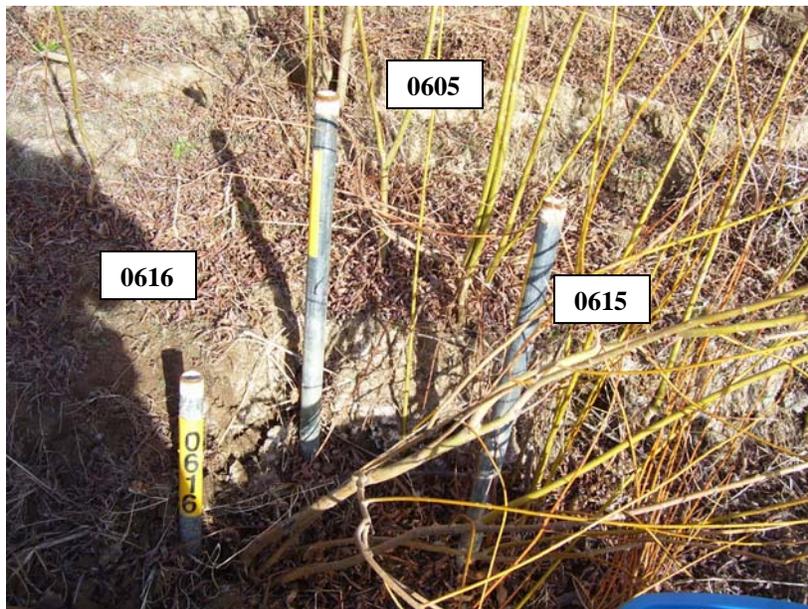


CF2 River Bank Well Points and Dry Surface Water Location 0240

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)



CF2 Dry Surface Water Location 0236



CF2 River Edge Well Points

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)



CF2 Surface Water Location 0239 (Located Near River Edge Well Points)

March 2009 CF3 Sampling

Number of Locations Sampled: Five remediation wells (0671, 0674, 0675, 0676, and 0678), three observation wells (0683, 0688-31, and 0689-46), four well points (0690, 0691, 0692, and 0696), and one surface water location (0259) were sampled. Including one duplicate, a total of 14 locations were sampled during the March 2009 monthly sampling event.

Locations Not Sampled: Two of the river edge well points (0698 and 0697) were broken off at the coupler and full of mud. These locations were not sampled during this sampling event. Surface water location 0258 was also dry and was not sampled.

Field Variance: Well point 0690 did not supply ample recharge, and a limited volume of sample was submitted to the lab.

Locations in Which Only Field Parameters Were Measured: Parameters were measured at locations 0688 at 39 ft and 0689 at 54 ft.

Well No.	Date	Time	Depth (ft bgs)	Depth to Water (ft btoc)	Field Parameters					
					Temp (°C)	Spec. Cond. (µS/cm)	D.O. (mg/L)	pH	ORP	Turb. (NTUs)
0688	03/25/2009	09:48	39	15.86	14.61	23,062	0.30	7.26	114	2.58
0689	03/25/2009	10:18	54	15.61	14.76	94,884	0.21	7.47	120	2.27

btoc = below top of casing; °C = degrees Centigrade; D.O. = dissolved oxygen; µS/cm = microsiemens per centimeter; mg/L = milligrams per liter; NTU = nephelometric turbidity unit; ORP = oxidation reduction potential; Spec. Cond. = special conditions; Temp = temperature; Turb. = turbidity

Attachment 1. Interim Action Well Field Monthly Sampling Trip Report (continued)

Quality-Control Sample Cross Reference: Following are the false identifications assigned to the quality-control samples.

False ID	True ID	Sample Type	Associated Matrix	Ticket Number
2002	0683	Duplicate from 27 ft bgs	Ground Water	MAR 063

ID = identification

Location-Specific Information – CF 3 Remediation Wells: Extraction wells were sampled using dedicated submersible pumps.

Well No.	Date	Time	Water Level (ft btoc)	Pump Intake (ft bgs)
0671	03/25/2009	14:01	17.65	35
0674	03/25/2009	14:10	18.13	35
0675	03/25/2009	14:19	17.36	35
0676	03/25/2009	14:28	17.13	35
0678	03/25/2009	14:35	16.91	35

btoc = below top of casing

Location-Specific Information – Observation Wells: All observation wells were sampled using micropurge techniques with a peristaltic pump and dedicated pump-head and downhole tubing. Sample depths and water levels for each observation well are listed below.

Well No.	Date	Time	Depth to Water (ft btoc)	Sample Depth (ft bgs)
0683	03/25/2009	15:02	17.63	27
0688-31	03/25/2009	10:01	15.91	31
0689-46	03/25/2009	10:30	15.61	46

btoc = below top of casing

Location-Specific Information – Well Point Sampling: The table below presents the water level, stick up height, and depth to the river surface prior to the initial purge.

WP No.	Date	Time	Depth to Water (ft btoc)	Stick Up Height (ft)	Depth to River Surface (ft btoc)
0690	03/18/2009	14:09	5.71	1.88	Dry
0691	03/18/2009	14:18	5.25	0.81	Dry
0692	03/18/2009	14:36	4.40	0.52	Dry
0696	03/18/2009	15:05	3.36	2.18	Dry

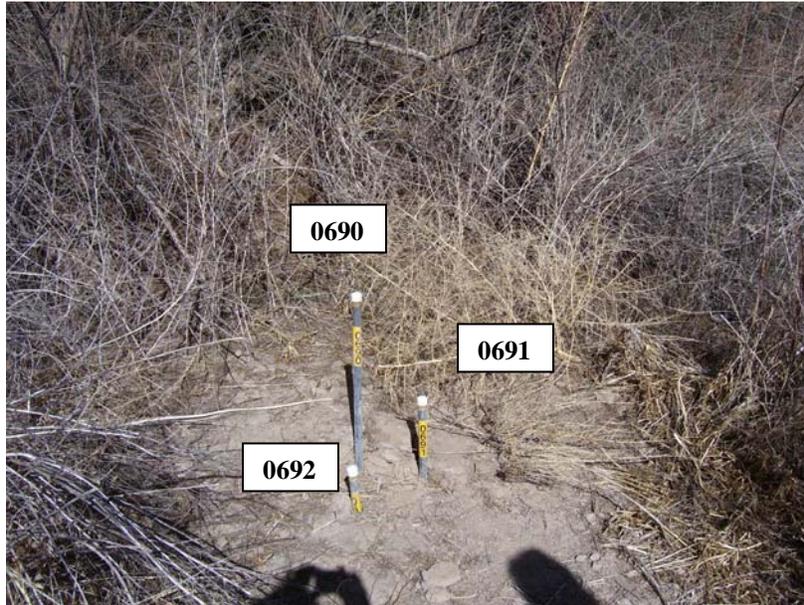
btoc = below top of casing; WP = well point

Location-Specific Information – Surface Water Sampling: The table below represents the surface water locations sampled.

SW No.	Date	Time	Depth (inches below surface)	Characteristics
0259	03/18/2009	15:27	2	Taken 2 ft off bank, slow flow, muddy substrate, main river channel

SW = surface water

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)

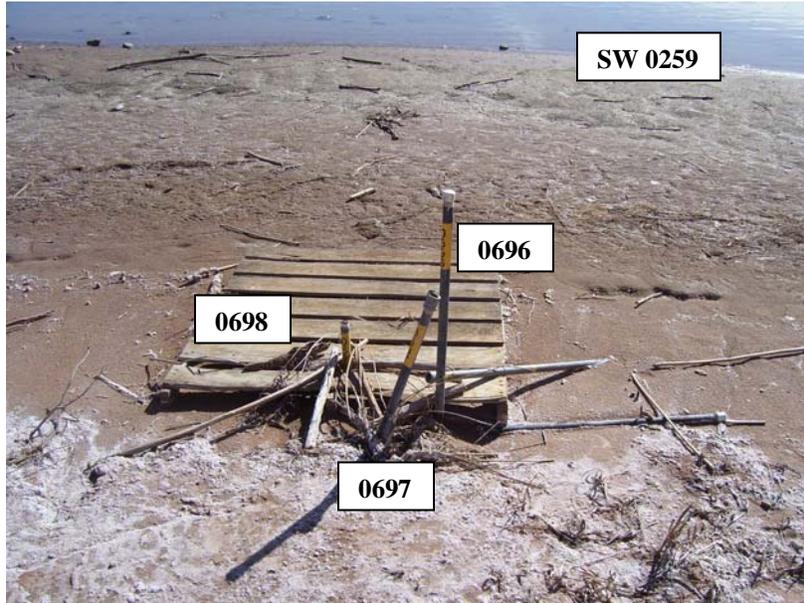


CF2 River Bank Well Points



Dry Surface Water Location 0258

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)



CF3 River Edge Well Points and Surface Water Location 0259

March 2009 CF4 Sampling

Number of Locations Sampled: Four observation wells (0780, 0782, 0786, and 0787), three well points (0790, 0791, and 0792), and one surface water location (0274) were sampled. A total of eight samples were collected during the March 2009 monthly sampling event.

Locations Not Sampled: Well points 0793 and 0794 were dry, and well point 0795 did not produce enough recharge to collect samples.

Field Variance: None.

Location-Specific Information – Observation Wells: All observation wells were sampled using micropurge techniques with a peristaltic pump and dedicated pump-head and downhole tubing. Sample depths and water levels for each observation well are listed below.

Well No.	Date	Time	Depth to Water (ft btoc)	Sample Depth (ft bgs)
0780	03/24/2009	10:59	16.05	28
0782	03/24/2009	10:35	16.12	34
0786	03/24/2009	11:19	15.87	28
0787	03/24/2009	11:37	15.73	36

btoc = below top of casing

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)

Location-Specific Information – Well Point Sampling: The table below presents the water level, stick up height, and depth to the river surface prior to the initial purge.

WP No.	Date	Time	Depth to Water (ft btoc)	Stick Up Height (ft)	Depth to River Surface (ft btoc)
0790	03/16/2009	14:00	6.58	2.35	Dry
0791	03/16/2009	13:40	8.45	2.28	Dry
0792	03/16/2009	14:05	5.90	2.23	Dry

btoc = below top of casing; WP = well point

Location-Specific Information- Surface Water Sampling: The table below represents the surface water locations sampled.

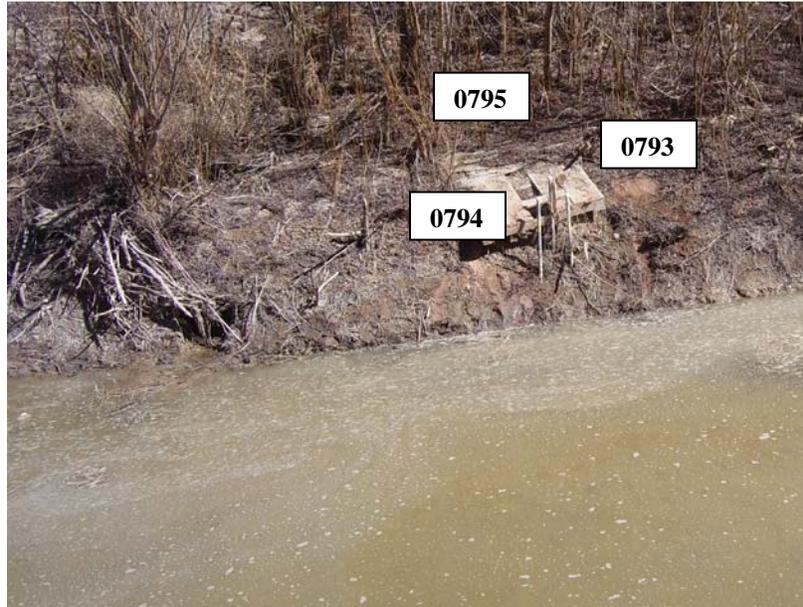
SW No.	Date	Time	Depth (inches below surface)	Characteristics
0274	03/16/2009	14:30	5	Closed off upriver, open downriver, abundant salt crusts, foam and wood debris in water.

SW = surface water



CF4 River Bank Well Points and Surface Water Location 0274

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)



CF4 Intermediate Well Points

March 2009 Baseline Area Sampling

Number of Locations Sampled: Six well points (0495, 0597, 0598, 0599, 0617, and 0618), two observation wells (0406 and 0493), and one surface water location (0243) were sampled. Including one duplicate, a total of 10 samples were collected during the March 2009 monthly sampling event.

Locations Not Sampled: Surface water locations 0241 and 0242 were dry, well point 0494 was dry, and well points 0496 and 0497 did not recharge; therefore, none of these were sampled.

Field Variance: None.

Quality-Control Sample Cross Reference: Following are the false identifications assigned to the quality-control samples.

False ID	True ID	Sample Type	Associated Matrix	Ticket Number
2004	0406	Duplicate from 18 ft bgs	Surface Water	MAR 066

ID = identification

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)

Location-Specific Information – Observation Wells: All observation wells were sampled using micropurge techniques with a peristaltic pump and dedicated pump-head and downhole tubing. Sample depths and water levels for each observation well are listed below.

Well Number	Date	Time	Depth to Water (ft btoc)	Sample Depth (ft bgs)
0406	03/25/2009	16:10	15.42	18
0493	03/25/2009	15:40	13.06	54

btoc = below top of casing

Location-Specific Information – Well Point Sampling: The table below presents the water level, stick up height, and depth to the river surface prior to the initial purge.

WP No.	Date	Time	Depth to Water (ft btoc)	Stick Up Height (ft)	Depth to River Surface (ft btoc)
0495	03/19/2009	09:50	5.77	1.76	Dry
0597	03/19/2009	10:02	5.03	1.12	Dry
0598	03/19/2009	10:37	3.09	0.50	Dry
0599	03/19/2009	11:20	3.92	2.70	Dry
0617	03/19/2009	11:06	2.40	2.10	Dry
0618	03/19/2009	10:55	1.60	1.54	Dry

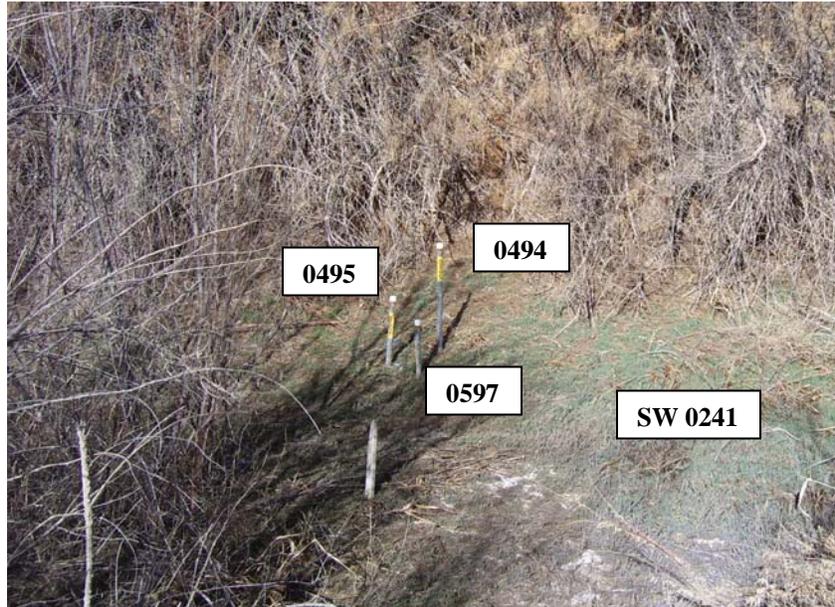
btoc = below top of casing; WP = well point

Location-Specific Information- Surface Water Sampling: The table below represents the surface water locations sampled.

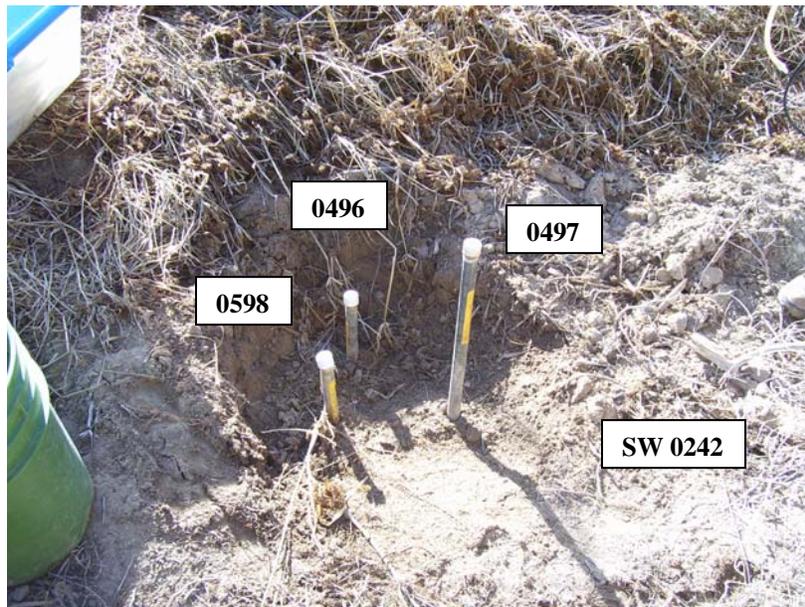
SW No.	Date	Time	Depth (inches below surface)	Characteristics
0243	03/19/2009	11:35	3	Taken 2 ft off bank, moderate flow, taken from main river channel

SW = surface water

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)

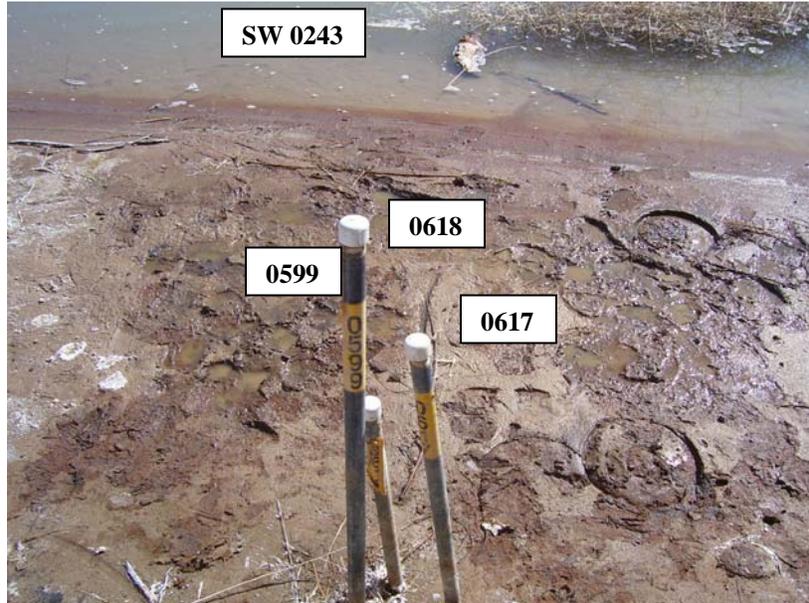


Baseline River Bank Well Points and Dry Surface Water Location 0241



Baseline Intermediate Well Points and Dry Surface Water Location 0242

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)



CF3 River Edge Well Points and Surface Water Location 0243

March 2009 Infiltration Trench Sampling

Number of Locations Sampled: Two well points (0725 and 0726) were sampled during the March 2009 monthly sampling event.

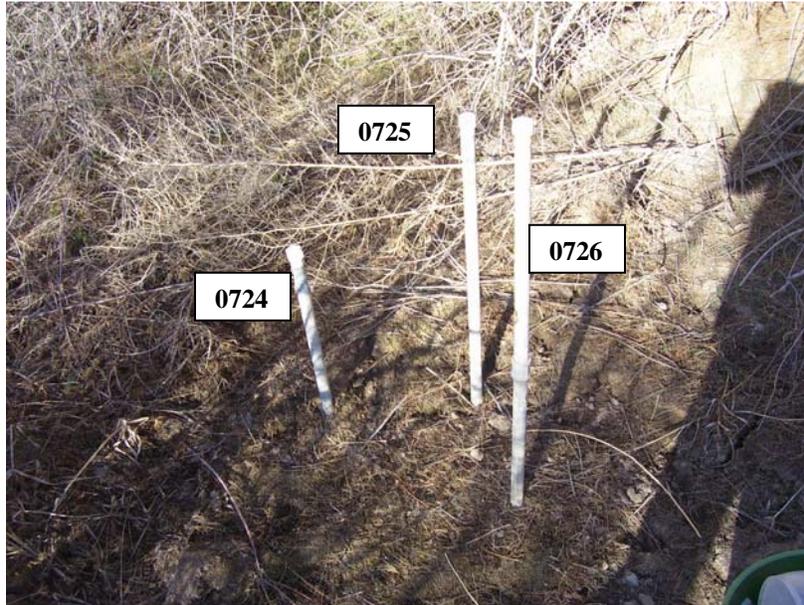
Field Variance: Well point 0724 was dry, and well point 0726 did not recharge a sufficient volume, so a limited volume was sent to the laboratory for analysis.

Location-Specific Information – Well Point Sampling: The table below presents the water level, stick up height, and depth to the river surface prior to the initial purge.

WP No.	Date	Time	Depth to Water (ft btoc)	Stick Up Height (ft)	Depth to River Surface (ft btoc)
0725	03/19/2009	09:21	5.97	2.30	Dry
0726	03/19/2009	09:02	6.26	2.65	Dry

btoc = below top of casing; WP = well point

Attachment 1.
Interim Action Well Field Monthly Sampling Trip Report (continued)



Infiltration Trench Well Points

Well Inspection Summary: A well inspection was not conducted.

Site Issues: Mean daily Colorado River flows during this sampling event, measured from the USGS Cisco gaging station (Station No. 09180500), are provided below.

Date	Daily Mean Flow (cfs)
03/16/2009	3,320
03/17/2009	3,250
03/18/2009	3,270
03/19/2009	3,370
03/24/2009	4,850
03/25/2009	4,870
03/26/2009	4,450

Equipment Issues: None.

Corrective Action Required/Taken: Clean out mud and develop CF3 river edge well points.