October 2004 Water Sampling

Validation Data Package for Configuration 1 Interim Action Well Field Monthly Sampling Moab, Utah

January 2005

Moab, Utah

October 13 and 14, 2004

Data Package Contents

This data package includes the following information:

Item No.	Description of Contents
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2.	**Sample Location Map**
3.	**Data Assessment Summary**
	Field Activities Verification Checklist Laboratory Performance Assessment Field Analysis/Activities Certification

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Water Quality Data
Water Level Data

Attachment 2—Trip Report

Sampling Event Summary

Site: Moab, Utah

Sampling Period: October 13 and 14, 2004

The purpose of this sampling was to collect data that can be used to evaluate the performance of Configuration 1 of the interim action well field. This is the sixth monthly performance sampling round conducted in 2004 for Configuration 1.

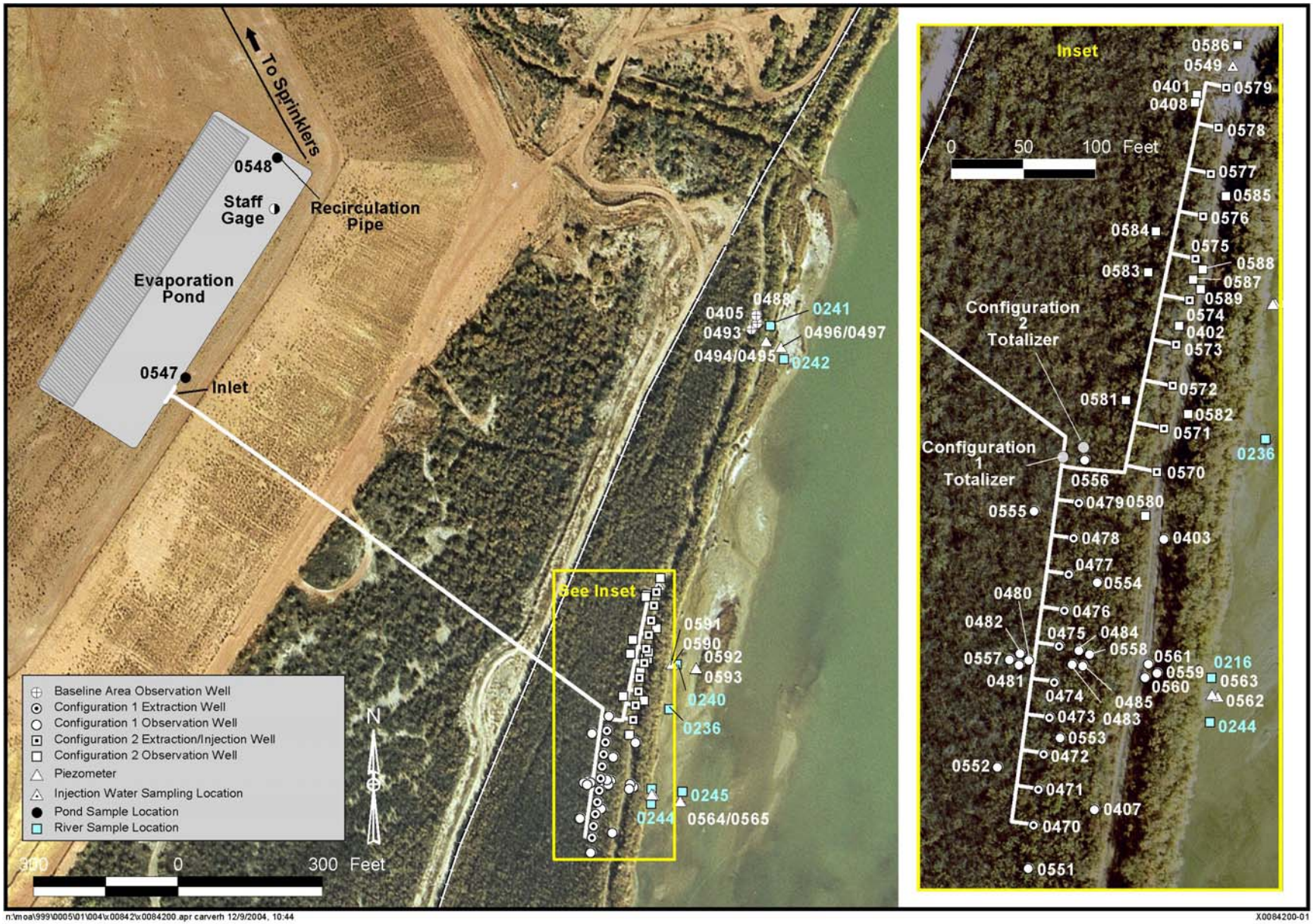
Sampling and analysis was conducted in accordance with the *Operations, Maintenance, and Performance Monitoring Plan for the Interim Action Ground Water Treatment System, February 2004.* Ground water samples were collected from 10 extraction wells (0470-0479), 13 observation wells (0480-0485, 0557-0561, 0403 and 0407), and 3 surface water locations (0216, 0547, and 0548), which are the Colorado River sample location, evaporation pond inlet, and the evaporation pond re-circulation pump discharge, respectively. Including two duplicates and one equipment blank, a total of 29 samples were collected.

Analysis and interpretation of the validated data presented in this package will be reported as part of a performance evaluation report scheduled in 2005.

Kenneth E. Karp
Site Lead

1-20-05
Date

Sample Location Map



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

Data Assessment Summary

Water Sampling Field Activities Verification Checklist

Project	Moab, Utah	**Date(s) of Water Sampling**	October 13 and 14, 2004
Date(s) of Verification	November 24, 2004	**Name of Verifier**	Jeff Price

	Response (Yes, No, NA)	**Comments**
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOP's, instructions.	NA	
2. Were the sampling locations specified in the planning documents sampled?	Yes	
3. Was a pre-trip calibration conducted as specified in the above named 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, Ec, pH, turbidity, DO, ORP) 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 mL/min?	Yes	
If a portable pump was used, was there a 4 hour delay between pump installation and sampling?	NA	

Water Sampling Field Activities Verification Checklist

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 mL/min?	NA	
Was one pump/tubing volume removed prior to sampling?	NA	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC 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 chain of custody 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?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment

General Information

Requisition No.:	04100119
Sample Event:	October 13 and 14, 2004
Site(s):	Moab, Utah
Laboratory:	Paragon Analytics
Work Order No.:	0410123
Analysis:	Metals and inorganics
Validator:	Jeff Price/Steve Donivan
Review Date:	November 24, 2004

This validation was performed according to *Standard Practice for Validation of Laboratory Data*, GT-9(P) (2004). 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 1.

Table 1. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Uranium, U	GJO-01	SW-846 3005A	SW-846 6020
Chloride, Cl	MIS-A-039	SW-846 9056	SW-846 9056
Sulfate, SO4	MIS-A-044	SW-846 9056	SW-846 9056
Ammonia as N, NH3-N	WCH-A-005	MCAWW 350.1	MCAWW 350.1
Total Dissolved Solids, TDS	WCH-A-033	MCAWW 160.1	MCAWW 160.1

Data Qualifier Summary

The uranium results were qualified as “J” or ”U” as listed in Table 2.

Table 2. Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
0410123-21	2574	U	U	Less than 5 times the blank
All except 0410123-21	All except 2574	U	J	Serial dilution failure

Sample Shipping/Receiving

Paragon Analytics in Fort Collins, Colorado, received 29 samples on October 15, 2004, accompanied by a chain of custody (COC) form. The COC form was checked to confirm that all of the samples were listed on the form and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents including the COC form, the sample submittal form, and the sample tickets had no errors or omissions.

Preservation and Holding Times

The sample shipment was received cool and intact with cooler temperatures of 2.8 and 1.2 degrees centrigrade (°C). All samples had been preserved correctly for the requested analyses and all samples were analyzed within the applicable holding times.

Laboratory Instrument Calibration

Calibrations for uranium were performed on October 20, 2004, and on October 25, 2004. The initial calibrations were performed using 4 calibration standards resulting in correlation coefficient (r^2) values greater than 0.995. The absolute values of the intercepts were less than 3 times the method detection limit (MDL). Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification (CCV) checks were made at the required frequency resulting in 14 CCVs. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit. The reporting limit verification results were within the acceptance criteria. The mass calibration and resolution was checked at the beginning of each analytical run in accordance with the procedure. Internal standard recoveries were stable and within acceptance ranges.

Calibrations were performed for chloride and sulfate using 5 calibration standards on October 18-19, 2004. The r^2 values were greater than 0.995 and intercepts less than 3 times the MDL. Initial calibration and calibration check standards were prepared from independent sources. Initial and continuing calibration checks were made at the required frequency resulting in 13 CCVs that met the acceptance criteria.

The initial calibration for ammonia as N was performed using 6 calibration standards on October 22, 2004, resulting in an r^2 value greater than 0.995. Initial and continuing calibration checks were made at the required frequency resulting in 7 CCVs. All initial and continuing calibration verifications were within the acceptance criteria.

There is no initial or continuing calibration requirement associated with the determination of total dissolved solids (TDS).

Method and Calibration Blanks

The uranium initial and continuing calibration blanks were below the practical quantitation limits. The chloride, sulfate, ammonia as N, and TDS method blanks, and initial and continuing calibration blanks were below the method detection limits.

Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Analysis

ICP interference check samples ICSA and ICSAB were analyzed at the required frequency. All results met the acceptance criteria.

Matrix Spike Analysis

Two pairs of matrix spike and matrix spike duplicate (MS/MSD) samples were analyzed for uranium with acceptable recovery and precision. MS/MSD pairs were analyzed for ammonia as N and sulfate with acceptable results.

Laboratory Replicate Analysis

The relative percent difference (RPD) values for the matrix spike duplicate and laboratory duplicate sample results for chloride, sulfate, ammonia as N, TDS, and uranium were less than 20 percent.

Laboratory Control Sample

Laboratory control samples were analyzed at the correct frequency with acceptable results for all analysis categories.

Metals Serial Dilution

Serial dilutions were performed during the uranium analysis. The serial dilution performed on sample 0410123-29 failed to meet the acceptance criteria. All uranium results greater than the method detection limit were qualified as "J."

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of uranium to reduce interferences. The required detection limits were achieved whenever possible.

Completeness

Results were reported in correct units for all requested analysis. Appropriate contract-required laboratory qualifiers were used, appropriate target analyte lists were used, and the required detection limits were met when possible or an explanation of why they were not met was given in the laboratory case narrative.

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all ion chromatography data. The manual integrations performed were acceptable and all peak integrations were satisfactory.

Electronic Data Deliverable (EDD) File

An EDD file arrived on November 5, 2004; the EDD validation application identified no problems with the EDD file.

Field Analyses/Activities

The following information summarizes the field analyses and activities for this sampling event period.

Field Activities

All monitor well results were qualified with an “F” flag in the database indicating the wells were purged and sampled using the low-flow sampling method. Extraction wells are not sampled using the low-flow sampling method.

An equipment blank was collected and analyzed for the same constituents as the Moab environmental samples. Concentrations measured in the equipment blank were below their respective contract required detection limit; therefore, equipment blank results are considered acceptable. Duplicate samples were collected from wells 0472 and 0407. 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. Duplicate results met the laboratory duplicate criteria of +/- 20 relative percent difference and are considered acceptable.

Certification

Results were reported in correct units for all analytes requested. Appropriate contract-required laboratory qualifiers and target analyte lists (TALs) were used. The required detection limits 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 USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media Multi-Concentration, Document Number ILMO2.0, 1991. All data in this package are considered validated and may be treated as final results.

Laboratory Validation Lead: Steve Donivan — Steve Donivan — 1-19-05 — Date

Field Activities Validation Lead: J. E. Price — Jeff Price — Jan 19, 05 — Date

Attachment 1

Data Presentation

Water Quality Data

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0216	SL, RIV	10/14/2004	0001	0.00 - 0.00	143			#	-	-
	mg/L	0403	WL	10/14/2004	0001	17.00 - 17.00	502		F	#	-	-
	mg/L	0407	WL	10/14/2004	0001	18.00 - 18.00	219		F	#	-	-
	mg/L	0470	WL, EXT	10/13/2004	0001	10.30 - 19.70	658			#	-	-
	mg/L	0471	WL, EXT	10/13/2004	0001	10.30 - 19.70	628			#	-	-
	mg/L	0472	WL, EXT	10/13/2004	0001	10.30 - 19.70	636			#	-	-
	mg/L	0473	WL, EXT	10/13/2004	0001	10.30 - 19.70	604			#	-	-
	mg/L	0474	WL, EXT	10/13/2004	0001	10.30 - 19.70	642			#	-	-
	mg/L	0475	WL, EXT	10/13/2004	0001	10.30 - 19.70	710			#	-	-
	mg/L	0476	WL, EXT	10/13/2004	0001	10.30 - 19.70	686			#	-	-
	mg/L	0477	WL, EXT	10/13/2004	0001	10.30 - 19.70	760			#	-	-
	mg/L	0478	WL, EXT	10/13/2004	0001	9.60 - 23.90	798			#	-	-
	mg/L	0479	WL, EXT	10/13/2004	0001	9.30 - 23.60	800			#	-	-
	mg/L	0480	WL	10/13/2004	0001	18.00 - 18.00	810		F	#	-	-
	mg/L	0481	WL	10/13/2004	0001	28.00 - 28.00	810		F	#	-	-
	mg/L	0482	WL	10/13/2004	0001	58.00 - 58.00	252		F	#	-	-
	mg/L	0483	WL	10/13/2004	0001	18.00 - 18.00	660		F	#	-	-
	mg/L	0484	WL	10/13/2004	0001	28.00 - 28.00	740		F	#	-	-
	mg/L	0485	WL	10/13/2004	0001	58.00 - 58.00	254		F	#	-	-
	mg/L	0547	TS, INFL	10/14/2004	0001	0.00 - 0.00	732			#	-	-
	mg/L	0548	TS, EPND	10/14/2004	0001	0.00 - 0.00	432			#	-	-
	mg/L	0557	WL	10/13/2004	0001	40.00 - 40.00	780		F	#	-	-
	mg/L	0558	WL	10/14/2004	0001	30.00 - 30.00	474		F	#	-	-
	mg/L	0559	WL	10/14/2004	0001	19.00 - 19.00	400		F	#	-	-
	mg/L	0560	WL	10/14/2004	0001	35.00 - 35.00	350		F	#	-	-
	mg/L	0561	WL	10/14/2004	0001	50.00 - 50.00	312		F	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0582	WL	10/14/2004	0001	18.00 - 18.00	704		F	#	-	-
	mg/L	0583	WL	10/14/2004	0001	18.00 - 18.00	834		F	#	-	-
	mg/L	0585	WL	10/14/2004	0001	18.00 - 18.00	376		F	#	-	-
	mg/L	0587	WL	10/14/2004	0001	18.00 - 18.00	654		F	#	-	-
Ammonia Total as N	mg/L	0216	SL, RIV	10/14/2004	0001	0.00 - 0.00	0.14			#	0.1	-
	mg/L	0403	WL	10/14/2004	0001	17.00 - 17.00	380		F	#	50	-
	mg/L	0407	WL	10/14/2004	0001	18.00 - 18.00	62		F	#	2	-
	mg/L	0407	WL	10/14/2004	0002	18.00 - 18.00	64		F	#	2	-
	mg/L	0470	WL, EXT	10/13/2004	0001	10.30 - 19.70	650			#	50	-
	mg/L	0471	WL, EXT	10/13/2004	0001	10.30 - 19.70	740			#	50	-
	mg/L	0472	WL, EXT	10/13/2004	0001	10.30 - 19.70	700			#	50	-
	mg/L	0472	WL, EXT	10/13/2004	0002	10.30 - 19.70	740			#	50	-
	mg/L	0473	WL, EXT	10/13/2004	0001	10.30 - 19.70	660			#	50	-
	mg/L	0474	WL, EXT	10/13/2004	0001	10.30 - 19.70	770			#	50	-
	mg/L	0475	WL, EXT	10/13/2004	0001	10.30 - 19.70	700			#	50	-
	mg/L	0476	WL, EXT	10/13/2004	0001	10.30 - 19.70	760			#	50	-
	mg/L	0477	WL, EXT	10/13/2004	0001	10.30 - 19.70	680			#	50	-
	mg/L	0478	WL, EXT	10/13/2004	0001	9.60 - 23.90	710			#	50	-
	mg/L	0479	WL, EXT	10/13/2004	0001	9.30 - 23.60	720			#	50	-
	mg/L	0480	WL	10/13/2004	0001	18.00 - 18.00	940		F	#	50	-
	mg/L	0481	WL	10/13/2004	0001	28.00 - 28.00	920		F	#	50	-
	mg/L	0482	WL	10/13/2004	0001	58.00 - 58.00	540		F	#	50	-
	mg/L	0483	WL	10/13/2004	0001	18.00 - 18.00	870		F	#	50	-
	mg/L	0484	WL	10/13/2004	0001	28.00 - 28.00	1500		F	#	50	-
	mg/L	0485	WL	10/13/2004	0001	58.00 - 58.00	420		F	#	50	-
	mg/L	0547	TS, INFL	10/14/2004	0001	0.00 - 0.00	720			#	50	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	0548	TS, EPND	10/14/2004	0001	0.00 - 0.00	1000			#	50	-
	mg/L	0557	WL	10/13/2004	0001	40.00 - 40.00	1200		F	#	50	-
	mg/L	0558	WL	10/14/2004	0001	30.00 - 30.00	2000		F	#	50	-
	mg/L	0559	WL	10/14/2004	0001	19.00 - 19.00	460		F	#	50	-
	mg/L	0560	WL	10/14/2004	0001	35.00 - 35.00	1200		F	#	50	-
	mg/L	0561	WL	10/14/2004	0001	50.00 - 50.00	1000		F	#	50	-
	mg/L	0582	WL	10/14/2004	0001	18.00 - 18.00	560		F	#	50	-
	mg/L	0583	WL	10/14/2004	0001	18.00 - 18.00	600		F	#	50	-
	mg/L	0585	WL	10/14/2004	0001	18.00 - 18.00	170		F	#	10	-
	mg/L	0587	WL	10/14/2004	0001	18.00 - 18.00	290		F	#	10	-
Chloride	mg/L	0216	SL, RIV	10/14/2004	0001	0.00 - 0.00	100			#	2	-
	mg/L	0403	WL	10/14/2004	0001	17.00 - 17.00	1900		F	#	100	-
	mg/L	0407	WL	10/14/2004	0001	18.00 - 18.00	440		F	#	10	-
	mg/L	0407	WL	10/14/2004	0002	18.00 - 18.00	430		F	#	10	-
	mg/L	0470	WL, EXT	10/13/2004	0001	10.30 - 19.70	5400			#	200	-
	mg/L	0471	WL, EXT	10/13/2004	0001	10.30 - 19.70	7200			#	200	-
	mg/L	0472	WL, EXT	10/13/2004	0001	10.30 - 19.70	5400			#	200	-
	mg/L	0472	WL, EXT	10/13/2004	0002	10.30 - 19.70	6100			#	100	-
	mg/L	0473	WL, EXT	10/13/2004	0001	10.30 - 19.70	5300			#	100	-
	mg/L	0474	WL, EXT	10/13/2004	0001	10.30 - 19.70	5800			#	100	-
	mg/L	0475	WL, EXT	10/13/2004	0001	10.30 - 19.70	4900			#	100	-
	mg/L	0476	WL, EXT	10/13/2004	0001	10.30 - 19.70	4700			#	100	-
	mg/L	0477	WL, EXT	10/13/2004	0001	10.30 - 19.70	3800			#	100	-
	mg/L	0478	WL, EXT	10/13/2004	0001	9.60 - 23.90	5100			#	100	-
	mg/L	0479	WL, EXT	10/13/2004	0001	9.30 - 23.60	4500			#	100	-
	mg/L	0480	WL	10/13/2004	0001	18.00 - 18.00	9400		F	#	100	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Chloride	mg/L	0481	WL	10/13/2004	0001	28.00 - 28.00	9900		F	#	100	-
	mg/L	0482	WL	10/13/2004	0001	58.00 - 58.00	48000		F	#	1000	-
	mg/L	0483	WL	10/13/2004	0001	18.00 - 18.00	8800		F	#	100	-
	mg/L	0484	WL	10/13/2004	0001	28.00 - 28.00	14000		F	#	400	-
	mg/L	0485	WL	10/13/2004	0001	58.00 - 58.00	49000		F	#	1000	-
	mg/L	0547	TS, INFL	10/14/2004	0001	0.00 - 0.00	5900			#	100	-
	mg/L	0548	TS, EPND	10/14/2004	0001	0.00 - 0.00	12000			#	200	-
	mg/L	0557	WL	10/13/2004	0001	40.00 - 40.00	11000		F	#	200	-
	mg/L	0558	WL	10/14/2004	0001	30.00 - 30.00	35000		F	#	400	-
	mg/L	0559	WL	10/14/2004	0001	19.00 - 19.00	4400		F	#	100	-
	mg/L	0560	WL	10/14/2004	0001	35.00 - 35.00	41000		F	#	1000	-
	mg/L	0561	WL	10/14/2004	0001	50.00 - 50.00	44000		F	#	1000	-
	mg/L	0582	WL	10/14/2004	0001	18.00 - 18.00	3300		F	#	100	-
	mg/L	0583	WL	10/14/2004	0001	18.00 - 18.00	2000		F	#	40	-
	mg/L	0585	WL	10/14/2004	0001	18.00 - 18.00	560		F	#	20	-
	mg/L	0587	WL	10/14/2004	0001	18.00 - 18.00	1600		F	#	40	-
Oxidation Reduction Potent	mV	0216	SL, RIV	10/14/2004	N001	0.00 - 0.00	51			#	-	-
	mV	0403	WL	10/14/2004	N001	17.00 - 17.00	128		F	#	-	-
	mV	0407	WL	10/14/2004	N001	18.00 - 18.00	31		F	#	-	-
	mV	0470	WL, EXT	10/13/2004	N001	10.30 - 19.70	243.6			#	-	-
	mV	0471	WL, EXT	10/13/2004	N001	10.30 - 19.70	209.2			#	-	-
	mV	0472	WL, EXT	10/13/2004	N001	10.30 - 19.70	202.8			#	-	-
	mV	0473	WL, EXT	10/13/2004	N001	10.30 - 19.70	134			#	-	-
	mV	0474	WL, EXT	10/13/2004	N001	10.30 - 19.70	111			#	-	-
	mV	0475	WL, EXT	10/13/2004	N001	10.30 - 19.70	143			#	-	-
	mV	0476	WL, EXT	10/13/2004	N001	10.30 - 19.70	155			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0477	WL, EXT	10/13/2004	N001	10.30 - 19.70	151			#	-	-
	mV	0478	WL, EXT	10/13/2004	N001	9.60 - 23.90	162			#	-	-
	mV	0479	WL, EXT	10/13/2004	N001	9.30 - 23.60	166			#	-	-
	mV	0480	WL	10/13/2004	N001	18.00 - 18.00	113		F	#	-	-
	mV	0481	WL	10/13/2004	N001	28.00 - 28.00	154		F	#	-	-
	mV	0482	WL	10/13/2004	N001	58.00 - 58.00	174		F	#	-	-
	mV	0483	WL	10/13/2004	N001	18.00 - 18.00	119		F	#	-	-
	mV	0484	WL	10/13/2004	N001	28.00 - 28.00	142		F	#	-	-
	mV	0485	WL	10/13/2004	N001	58.00 - 58.00	63		F	#	-	-
	mV	0547	TS, INFL	10/14/2004	N001	0.00 - 0.00	251			#	-	-
	mV	0548	TS, EPND	10/14/2004	N001	0.00 - 0.00	21.7			#	-	-
	mV	0557	WL	10/13/2004	N001	40.00 - 40.00	97		F	#	-	-
	mV	0558	WL	10/14/2004	N001	30.00 - 30.00	220		F	#	-	-
	mV	0559	WL	10/14/2004	N001	19.00 - 19.00	163		F	#	-	-
	mV	0560	WL	10/14/2004	N001	35.00 - 35.00	82		F	#	-	-
	mV	0561	WL	10/14/2004	N001	50.00 - 50.00	-31		F	#	-	-
	mV	0582	WL	10/14/2004	N001	18.00 - 18.00	195		F	#	-	-
	mV	0583	WL	10/14/2004	N001	18.00 - 18.00	197		F	#	-	-
	mV	0585	WL	10/14/2004	N001	18.00 - 18.00	179		F	#	-	-
	mV	0587	WL	10/14/2004	N001	18.00 - 18.00	191		F	#	-	-
pH	s.u.	0216	SL, RIV	10/14/2004	N001	0.00 - 0.00	8.53			#	-	-
	s.u.	0403	WL	10/14/2004	N001	17.00 - 17.00	7.01		F	#	-	-
	s.u.	0407	WL	10/14/2004	N001	18.00 - 18.00	7.63		F	#	-	-
	s.u.	0470	WL, EXT	10/13/2004	N001	10.30 - 19.70	6.86			#	-	-
	s.u.	0471	WL, EXT	10/13/2004	N001	10.30 - 19.70	6.89			#	-	-
	s.u.	0472	WL, EXT	10/13/2004	N001	10.30 - 19.70	6.89			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	0473	WL, EXT	10/13/2004	N001	10.30 - 19.70	6.84			#	-	-
	s.u.	0474	WL, EXT	10/13/2004	N001	10.30 - 19.70	6.85			#	-	-
	s.u.	0475	WL, EXT	10/13/2004	N001	10.30 - 19.70	6.84			#	-	-
	s.u.	0476	WL, EXT	10/13/2004	N001	10.30 - 19.70	6.81			#	-	-
	s.u.	0477	WL, EXT	10/13/2004	N001	10.30 - 19.70	6.82			#	-	-
	s.u.	0478	WL, EXT	10/13/2004	N001	9.60 - 23.90	6.81			#	-	-
	s.u.	0479	WL, EXT	10/13/2004	N001	9.30 - 23.60	6.78			#	-	-
	s.u.	0480	WL	10/13/2004	N001	18.00 - 18.00	6.85		F	#	-	-
	s.u.	0481	WL	10/13/2004	N001	28.00 - 28.00	6.86		F	#	-	-
	s.u.	0482	WL	10/13/2004	N001	58.00 - 58.00	6.80		F	#	-	-
	s.u.	0483	WL	10/13/2004	N001	18.00 - 18.00	6.89		F	#	-	-
	s.u.	0484	WL	10/13/2004	N001	28.00 - 28.00	6.80		F	#	-	-
	s.u.	0485	WL	10/13/2004	N001	58.00 - 58.00	6.83		F	#	-	-
	s.u.	0547	TS, INFL	10/14/2004	N001	0.00 - 0.00	6.65			#	-	-
	s.u.	0548	TS, EPND	10/14/2004	N001	0.00 - 0.00	7.63			#	-	-
	s.u.	0557	WL	10/13/2004	N001	40.00 - 40.00	6.86		F	#	-	-
	s.u.	0558	WL	10/14/2004	N001	30.00 - 30.00	6.81		F	#	-	-
	s.u.	0559	WL	10/14/2004	N001	19.00 - 19.00	7.22		F	#	-	-
	s.u.	0560	WL	10/14/2004	N001	35.00 - 35.00	6.70		F	#	-	-
	s.u.	0561	WL	10/14/2004	N001	50.00 - 50.00	6.89		F	#	-	-
	s.u.	0582	WL	10/14/2004	N001	18.00 - 18.00	6.83		F	#	-	-
	s.u.	0583	WL	10/14/2004	N001	18.00 - 18.00	6.76		F	#	-	-
	s.u.	0585	WL	10/14/2004	N001	18.00 - 18.00	7.12		F	#	-	-
	s.u.	0587	WL	10/14/2004	N001	18.00 - 18.00	6.78		F	#	-	-
Specific Conductance	umhos/cm	0216	SL, RIV	10/14/2004	N001	0.00 - 0.00	1438			#	-	-
	umhos/cm	0403	WL	10/14/2004	N001	17.00 - 17.00	14260		F	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	0407	WL	10/14/2004	N001	18.00 - 18.00	3097		F	#	-	-
	umhos/cm	0470	WL, EXT	10/13/2004	N001	10.30 - 19.70	25325			#	-	-
	umhos/cm	0471	WL, EXT	10/13/2004	N001	10.30 - 19.70	30865			#	-	-
	umhos/cm	0472	WL, EXT	10/13/2004	N001	10.30 - 19.70	26432			#	-	-
	umhos/cm	0473	WL, EXT	10/13/2004	N001	10.30 - 19.70	23952			#	-	-
	umhos/cm	0474	WL, EXT	10/13/2004	N001	10.30 - 19.70	26555			#	-	-
	umhos/cm	0475	WL, EXT	10/13/2004	N001	10.30 - 19.70	24175			#	-	-
	umhos/cm	0476	WL, EXT	10/13/2004	N001	10.30 - 19.70	23525			#	-	-
	umhos/cm	0477	WL, EXT	10/13/2004	N001	10.30 - 19.70	21860			#	-	-
	umhos/cm	0478	WL, EXT	10/13/2004	N001	9.60 - 23.90	24710			#	-	-
	umhos/cm	0479	WL, EXT	10/13/2004	N001	9.30 - 23.60	24020			#	-	-
	umhos/cm	0480	WL	10/13/2004	N001	18.00 - 18.00	36340		F	#	-	-
	umhos/cm	0481	WL	10/13/2004	N001	28.00 - 28.00	36525		F	#	-	-
	umhos/cm	0482	WL	10/13/2004	N001	58.00 - 58.00	110360		F	#	-	-
	umhos/cm	0483	WL	10/13/2004	N001	18.00 - 18.00	32572		F	#	-	-
	umhos/cm	0484	WL	10/13/2004	N001	28.00 - 28.00	51790		F	#	-	-
	umhos/cm	0485	WL	10/13/2004	N001	58.00 - 58.00	110080		F	#	-	-
	umhos/cm	0547	TS, INFL	10/14/2004	N001	0.00 - 0.00	25544			#	-	-
	umhos/cm	0548	TS, EPND	10/14/2004	N001	0.00 - 0.00	45510			#	-	-
	umhos/cm	0557	WL	10/13/2004	N001	40.00 - 40.00	41832		F	#	-	-
	umhos/cm	0558	WL	10/14/2004	N001	30.00 - 30.00	92280		F	#	-	-
	umhos/cm	0559	WL	10/14/2004	N001	19.00 - 19.00	19275		F	#	-	-
	umhos/cm	0560	WL	10/14/2004	N001	35.00 - 35.00	97720		F	#	-	-
	umhos/cm	0561	WL	10/14/2004	N001	50.00 - 50.00	101750		F	#	-	-
	umhos/cm	0582	WL	10/14/2004	N001	18.00 - 18.00	22723		F	#	-	-
	umhos/cm	0583	WL	10/14/2004	N001	18.00 - 18.00	18548		F	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	0585	WL	10/14/2004	N001	18.00 - 18.00	6620		F	#	-	-
	umhos/cm	0587	WL	10/14/2004	N001	18.00 - 18.00	15105		F	#	-	-
Sulfate	mg/L	0216	SL, RIV	10/14/2004	0001	0.00 - 0.00	370			#	5	-
	mg/L	0403	WL	10/14/2004	0001	17.00 - 17.00	4600		F	#	250	-
	mg/L	0407	WL	10/14/2004	0001	18.00 - 18.00	640		F	#	25	-
	mg/L	0407	WL	10/14/2004	0002	18.00 - 18.00	630		F	#	25	-
	mg/L	0470	WL, EXT	10/13/2004	0001	10.30 - 19.70	6600			#	100	-
	mg/L	0471	WL, EXT	10/13/2004	0001	10.30 - 19.70	7500			#	100	-
	mg/L	0472	WL, EXT	10/13/2004	0001	10.30 - 19.70	7200			#	100	-
	mg/L	0472	WL, EXT	10/13/2004	0002	10.30 - 19.70	7400			#	250	-
	mg/L	0473	WL, EXT	10/13/2004	0001	10.30 - 19.70	7300			#	250	-
	mg/L	0474	WL, EXT	10/13/2004	0001	10.30 - 19.70	7700			#	250	-
	mg/L	0475	WL, EXT	10/13/2004	0001	10.30 - 19.70	7600			#	250	-
	mg/L	0476	WL, EXT	10/13/2004	0001	10.30 - 19.70	8100			#	250	-
	mg/L	0477	WL, EXT	10/13/2004	0001	10.30 - 19.70	8200			#	250	-
	mg/L	0478	WL, EXT	10/13/2004	0001	9.60 - 23.90	8000			#	250	-
	mg/L	0479	WL, EXT	10/13/2004	0001	9.30 - 23.60	8100			#	250	-
	mg/L	0480	WL	10/13/2004	0001	18.00 - 18.00	10000		F	#	250	-
	mg/L	0481	WL	10/13/2004	0001	28.00 - 28.00	10000		F	#	250	-
	mg/L	0482	WL	10/13/2004	0001	58.00 - 58.00	5800		F	#	500	-
	mg/L	0483	WL	10/13/2004	0001	18.00 - 18.00	7700		F	#	250	-
	mg/L	0484	WL	10/13/2004	0001	28.00 - 28.00	11000		F	#	250	-
	mg/L	0485	WL	10/13/2004	0001	58.00 - 58.00	5800		F	#	500	-
	mg/L	0547	TS, INFL	10/14/2004	0001	0.00 - 0.00	7900			#	250	-
	mg/L	0548	TS, EPND	10/14/2004	0001	0.00 - 0.00	13000			#	250	-
	mg/L	0557	WL	10/13/2004	0001	40.00 - 40.00	11000		F	#	250	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	0558	WL	10/14/2004	0001	30.00 - 30.00	9700		F	#	1000	-
	mg/L	0559	WL	10/14/2004	0001	19.00 - 19.00	3600		F	#	250	-
	mg/L	0560	WL	10/14/2004	0001	35.00 - 35.00	7300		F	#	500	-
	mg/L	0561	WL	10/14/2004	0001	50.00 - 50.00	6600		F	#	250	-
	mg/L	0582	WL	10/14/2004	0001	18.00 - 18.00	8100		F	#	250	-
	mg/L	0583	WL	10/14/2004	0001	18.00 - 18.00	8400		F	#	100	-
	mg/L	0585	WL	10/14/2004	0001	18.00 - 18.00	2400		F	#	50	-
	mg/L	0587	WL	10/14/2004	0001	18.00 - 18.00	5500		F	#	100	-
Temperature	C	0216	SL, RIV	10/14/2004	N001	0.00 - 0.00	19.10			#	-	-
	C	0403	WL	10/14/2004	N001	17.00 - 17.00	17.79		F	#	-	-
	C	0407	WL	10/14/2004	N001	18.00 - 18.00	19.76		F	#	-	-
	C	0470	WL, EXT	10/13/2004	N001	10.30 - 19.70	16.56			#	-	-
	C	0471	WL, EXT	10/13/2004	N001	10.30 - 19.70	16.72			#	-	-
	C	0472	WL, EXT	10/13/2004	N001	10.30 - 19.70	16.69			#	-	-
	C	0473	WL, EXT	10/13/2004	N001	10.30 - 19.70	17.65			#	-	-
	C	0474	WL, EXT	10/13/2004	N001	10.30 - 19.70	16.73			#	-	-
	C	0475	WL, EXT	10/13/2004	N001	10.30 - 19.70	16.79			#	-	-
	C	0476	WL, EXT	10/13/2004	N001	10.30 - 19.70	17.32			#	-	-
	C	0477	WL, EXT	10/13/2004	N001	10.30 - 19.70	16.90			#	-	-
	C	0478	WL, EXT	10/13/2004	N001	9.60 - 23.90	16.91			#	-	-
	C	0479	WL, EXT	10/13/2004	N001	9.30 - 23.60	16.74			#	-	-
	C	0480	WL	10/13/2004	N001	18.00 - 18.00	16.75		F	#	-	-
	C	0481	WL	10/13/2004	N001	28.00 - 28.00	16.28		F	#	-	-
	C	0482	WL	10/13/2004	N001	58.00 - 58.00	15.89		F	#	-	-
	C	0483	WL	10/13/2004	N001	18.00 - 18.00	16.49		F	#	-	-
	C	0484	WL	10/13/2004	N001	28.00 - 28.00	15.57		F	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0485	WL	10/13/2004	N001	58.00 - 58.00	15.53		F	#	-	-
	C	0547	TS, INFL	10/14/2004	N001	0.00 - 0.00	14.66			#	-	-
	C	0548	TS, EPND	10/14/2004	N001	0.00 - 0.00	12.51			#	-	-
	C	0557	WL	10/13/2004	N001	40.00 - 40.00	15.85		F	#	-	-
	C	0558	WL	10/14/2004	N001	30.00 - 30.00	15.88		F	#	-	-
	C	0559	WL	10/14/2004	N001	19.00 - 19.00	17.18		F	#	-	-
	C	0560	WL	10/14/2004	N001	35.00 - 35.00	15.78		F	#	-	-
	C	0561	WL	10/14/2004	N001	50.00 - 50.00	16.09		F	#	-	-
	C	0582	WL	10/14/2004	N001	18.00 - 18.00	15.71		F	#	-	-
	C	0583	WL	10/14/2004	N001	18.00 - 18.00	16.61		F	#	-	-
	C	0585	WL	10/14/2004	N001	18.00 - 18.00	16.10		F	#	-	-
	C	0587	WL	10/14/2004	N001	18.00 - 18.00	16.42		F	#	-	-
Total Dissolved Solids	mg/L	0216	SL, RIV	10/14/2004	0001	0.00 - 0.00	830			#	20	-
	mg/L	0403	WL	10/14/2004	0001	17.00 - 17.00	9700		F	#	200	-
	mg/L	0407	WL	10/14/2004	0001	18.00 - 18.00	1700		F	#	40	-
	mg/L	0407	WL	10/14/2004	0002	18.00 - 18.00	1700		F	#	40	-
	mg/L	0470	WL, EXT	10/13/2004	0001	10.30 - 19.70	18000			#	400	-
	mg/L	0471	WL, EXT	10/13/2004	0001	10.30 - 19.70	22000			#	400	-
	mg/L	0472	WL, EXT	10/13/2004	0001	10.30 - 19.70	19000			#	400	-
	mg/L	0472	WL, EXT	10/13/2004	0002	10.30 - 19.70	19000			#	400	-
	mg/L	0473	WL, EXT	10/13/2004	0001	10.30 - 19.70	17000			#	400	-
	mg/L	0474	WL, EXT	10/13/2004	0001	10.30 - 19.70	19000			#	400	-
	mg/L	0475	WL, EXT	10/13/2004	0001	10.30 - 19.70	17000			#	400	-
	mg/L	0476	WL, EXT	10/13/2004	0001	10.30 - 19.70	18000			#	400	-
	mg/L	0477	WL, EXT	10/13/2004	0001	10.30 - 19.70	17000			#	400	-
	mg/L	0478	WL, EXT	10/13/2004	0001	9.60 - 23.90	18000			#	400	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Total Dissolved Solids	mg/L	0479	WL, EXT	10/13/2004	0001	9.30 - 23.60	18000			#	400	-
	mg/L	0480	WL	10/13/2004	0001	18.00 - 18.00	27000		F	#	400	-
	mg/L	0481	WL	10/13/2004	0001	28.00 - 28.00	27000		F	#	400	-
	mg/L	0482	WL	10/13/2004	0001	58.00 - 58.00	85000		F	#	2000	-
	mg/L	0483	WL	10/13/2004	0001	18.00 - 18.00	23000		F	#	400	-
	mg/L	0484	WL	10/13/2004	0001	28.00 - 28.00	36000		F	#	1000	-
	mg/L	0485	WL	10/13/2004	0001	58.00 - 58.00	87000		F	#	2000	-
	mg/L	0547	TS, INFL	10/14/2004	0001	0.00 - 0.00	19000			#	400	-
	mg/L	0548	TS, EPND	10/14/2004	0001	0.00 - 0.00	35000			#	1000	-
	mg/L	0557	WL	10/13/2004	0001	40.00 - 40.00	30000		F	#	400	-
	mg/L	0558	WL	10/14/2004	0001	30.00 - 30.00	63000		F	#	2000	-
	mg/L	0559	WL	10/14/2004	0001	19.00 - 19.00	12000		F	#	400	-
	mg/L	0560	WL	10/14/2004	0001	35.00 - 35.00	75000		F	#	2000	-
	mg/L	0561	WL	10/14/2004	0001	50.00 - 50.00	79000		F	#	2000	-
	mg/L	0582	WL	10/14/2004	0001	18.00 - 18.00	16000		F	#	400	-
	mg/L	0583	WL	10/14/2004	0001	18.00 - 18.00	15000		F	#	400	-
	mg/L	0585	WL	10/14/2004	0001	18.00 - 18.00	4300		F	#	80	-
	mg/L	0587	WL	10/14/2004	0001	18.00 - 18.00	11000		F	#	200	-
Turbidity	NTU	0216	SL, RIV	10/14/2004	N001	0.00 - 0.00	210			#	-	-
	NTU	0403	WL	10/14/2004	N001	17.00 - 17.00	4.58		F	#	-	-
	NTU	0407	WL	10/14/2004	N001	18.00 - 18.00	1.97		F	#	-	-
	NTU	0470	WL, EXT	10/13/2004	N001	10.30 - 19.70	4.65			#	-	-
	NTU	0471	WL, EXT	10/13/2004	N001	10.30 - 19.70	4.08			#	-	-
	NTU	0472	WL, EXT	10/13/2004	N001	10.30 - 19.70	1.29			#	-	-
	NTU	0473	WL, EXT	10/13/2004	N001	10.30 - 19.70	0.81			#	-	-
	NTU	0474	WL, EXT	10/13/2004	N001	10.30 - 19.70	1.95			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0475	WL, EXT	10/13/2004	N001	10.30 - 19.70	0.87			#	-	-
	NTU	0476	WL, EXT	10/13/2004	N001	10.30 - 19.70	1.42			#	-	-
	NTU	0477	WL, EXT	10/13/2004	N001	10.30 - 19.70	4.60			#	-	-
	NTU	0478	WL, EXT	10/13/2004	N001	9.60 - 23.90	2.16			#	-	-
	NTU	0479	WL, EXT	10/13/2004	N001	9.30 - 23.60	1.04			#	-	-
	NTU	0480	WL	10/13/2004	N001	18.00 - 18.00	1.57		F	#	-	-
	NTU	0481	WL	10/13/2004	N001	28.00 - 28.00	3.98		F	#	-	-
	NTU	0482	WL	10/13/2004	N001	58.00 - 58.00	4.49		F	#	-	-
	NTU	0483	WL	10/13/2004	N001	18.00 - 18.00	3.83		F	#	-	-
	NTU	0484	WL	10/13/2004	N001	28.00 - 28.00	5.31		F	#	-	-
	NTU	0485	WL	10/13/2004	N001	58.00 - 58.00	3.25		F	#	-	-
	NTU	0547	TS, INFL	10/14/2004	N001	0.00 - 0.00	1.42			#	-	-
	NTU	0548	TS, EPND	10/14/2004	N001	0.00 - 0.00	5.19			#	-	-
	NTU	0557	WL	10/13/2004	N001	40.00 - 40.00	3.94		F	#	-	-
	NTU	0558	WL	10/14/2004	N001	30.00 - 30.00	2.33		F	#	-	-
	NTU	0559	WL	10/14/2004	N001	19.00 - 19.00	3.78		F	#	-	-
	NTU	0560	WL	10/14/2004	N001	35.00 - 35.00	2.69		F	#	-	-
	NTU	0561	WL	10/14/2004	N001	50.00 - 50.00	6.43		F	#	-	-
	NTU	0582	WL	10/14/2004	N001	18.00 - 18.00	8.14		F	#	-	-
	NTU	0583	WL	10/14/2004	N001	18.00 - 18.00	8.62		F	#	-	-
	NTU	0585	WL	10/14/2004	N001	18.00 - 18.00	2.04		F	#	-	-
	NTU	0587	WL	10/14/2004	N001	18.00 - 18.00	6.48		F	#	-	-
Uranium	mg/L	0216	SL, RIV	10/14/2004	0001	0.00 - 0.00	0.019		J	#	8.3E-06	-
	mg/L	0403	WL	10/14/2004	0001	17.00 - 17.00	1.300		JF	#	0.00083	-
	mg/L	0407	WL	10/14/2004	0001	18.00 - 18.00	0.200		JF	#	8.3E-05	-
	mg/L	0407	WL	10/14/2004	0002	18.00 - 18.00	0.190	E	JF	#	8.3E-05	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0470	WL, EXT	10/13/2004	0001	10.30 - 19.70	2.100		J	#	0.00083	-
	mg/L	0471	WL, EXT	10/13/2004	0001	10.30 - 19.70	2.000		J	#	0.00083	-
	mg/L	0472	WL, EXT	10/13/2004	0001	10.30 - 19.70	1.900		J	#	0.00083	-
	mg/L	0472	WL, EXT	10/13/2004	0002	10.30 - 19.70	2.100		J	#	0.00083	-
	mg/L	0473	WL, EXT	10/13/2004	0001	10.30 - 19.70	2.300		J	#	0.00083	-
	mg/L	0474	WL, EXT	10/13/2004	0001	10.30 - 19.70	2.300		J	#	0.00083	-
	mg/L	0475	WL, EXT	10/13/2004	0001	10.30 - 19.70	2.300		J	#	0.00083	-
	mg/L	0476	WL, EXT	10/13/2004	0001	10.30 - 19.70	2.200		J	#	0.00083	-
	mg/L	0477	WL, EXT	10/13/2004	0001	10.30 - 19.70	2.300		J	#	0.00083	-
	mg/L	0478	WL, EXT	10/13/2004	0001	9.60 - 23.90	2.200		J	#	0.00083	-
	mg/L	0479	WL, EXT	10/13/2004	0001	9.30 - 23.60	2.300		J	#	0.00083	-
	mg/L	0480	WL	10/13/2004	0001	18.00 - 18.00	2.900		JF	#	0.00083	-
	mg/L	0481	WL	10/13/2004	0001	28.00 - 28.00	3.100		JF	#	0.00083	-
	mg/L	0482	WL	10/13/2004	0001	58.00 - 58.00	0.510		JF	#	0.00083	-
	mg/L	0483	WL	10/13/2004	0001	18.00 - 18.00	1.900		JF	#	0.00083	-
	mg/L	0484	WL	10/13/2004	0001	28.00 - 28.00	2.600		JF	#	0.00083	-
	mg/L	0485	WL	10/13/2004	0001	58.00 - 58.00	0.410		JF	#	0.00083	-
	mg/L	0547	TS, INFL	10/14/2004	0001	0.00 - 0.00	2.200		J	#	0.00083	-
	mg/L	0548	TS, EPND	10/14/2004	0001	0.00 - 0.00	3.600		J	#	0.00083	-
	mg/L	0557	WL	10/13/2004	0001	40.00 - 40.00	2.900		JF	#	0.00083	-
	mg/L	0558	WL	10/14/2004	0001	30.00 - 30.00	1.600		JF	#	0.00083	-
	mg/L	0559	WL	10/14/2004	0001	19.00 - 19.00	0.950		JF	#	0.00083	-
	mg/L	0560	WL	10/14/2004	0001	35.00 - 35.00	0.920		JF	#	0.00083	-
	mg/L	0561	WL	10/14/2004	0001	50.00 - 50.00	0.430		JF	#	0.00083	-
	mg/L	0582	WL	10/14/2004	0001	18.00 - 18.00	2.300		JF	#	0.00083	-
	mg/L	0583	WL	10/14/2004	0001	18.00 - 18.00	2.600	E	JF	#	0.00083	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:21 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0585	WL	10/14/2004	0001	18.00 - 18.00	0.620		JF	#	0.00083	-
	mg/L	0587	WL	10/14/2004	0001	18.00 - 18.00	1.700	E	JF	#	0.00083	-

RECORDS: SELECTED FROM USEE200 WHERE site_code='MOA01' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #10/13/2004# and #10/14/2004#

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

LOCATION TYPES: SL SURFACE LOCATION TS TREATMENT SYSTEM WL WELL

LOCATION SUBTYPES: EPND Evaporation Pond EXT Extraction Well INFL Treatment System Influent RIV River

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- G Possible grout contamination, pH > 9.
- Q Qualitative result due to sampling technique
- X Location is undefined.
- J Estimated value.
- R Unusable result.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

Water Level Data

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site
REPORT DATE: 1/11/2005 3:22 pm

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
			DATE	TIME			
0403	O	3968.95	10/14/2004	13:23	16.75	3952.20	
0407	O	3969.09	10/14/2004	13:51	17.51	3951.58	
0480		3968.65	10/13/2004	16:09	17.07	3951.58	
0481		3968.83	10/13/2004	16:29	16.35	3952.48	
0482		3968.70	10/13/2004	16:51	16.91	3951.79	
0483		3968.90	10/13/2004	17:46	17.45	3951.45	
0484		3969.19	10/13/2004	18:05	17.11	3952.08	
0485		3968.81	10/13/2004	18:24	16.51	3952.30	
0557		3968.85	10/13/2004	17:15	16.01	3952.84	
0558		3968.79	10/14/2004	10:13	16.80	3951.99	
0559		3969.92	10/14/2004	10:52	17.97	3951.95	
0560		3968.77	10/14/2004	11:25	16.76	3952.01	
0561		3968.56	10/14/2004	11:55	16.75	3951.81	
0582		3969.65	10/14/2004	18:21	16.79	3952.86	
0583		3969.64	10/14/2004	16:37	16.53	3953.11	
0585		3969.36	10/14/2004	17:54	15.82	3953.54	
0587		3968.89	10/14/2004	17:22	15.72	3953.17	

RECORDS: SELECTED FROM USEE700 WHERE site_code='MOA01' AND LOG_DATE between #10/13/2004# and #10/14/2004#

FLOW CODES: O ON-SITE

WATER LEVEL FLAGS:

Attachment 2

Trip Report

Stoller

established 1959

DATE: January 18, 2005

TO: Ken Karp

FROM: Ken Pill

SUBJECT: Trip Report

Site: Moab – Interim Action Configuration I Well Field Monthly Sampling – October 2004 – REVISED

Date of Sampling Event: October 13 and 14, 2004.

Team Members: Ken Pill and Sam Campbell

Number of Locations Sampled: Ten extraction wells (0470 through 0479), thirteen observation wells (0480 through 0485, 0557 through 0561, 0403 and 0407), and three surface water locations (0216, 0547, and 0548, which are the Colorado River sample location, evaporation pond inlet, and the evaporation pond re-circulation pump discharge, respectively) were sampled. Including two duplicates and one equipment blank, a total of 29 samples were collected.

Locations in Which Water Levels Were Measured Only: Water levels were measured in piezometers 0562 through 0565. Samples were not collected from these locations for laboratory analysis.

Locations Not Sampled/Reason: None.

Field Variance: Only a 125 ml sample was collected for uranium analysis as opposed to the standard 500 ml sample volume.

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
2573	0472	Duplicate	Ground water	NDY-079
2574	NA	Equipment Blank	Water	NDY-096
2575	0407	Duplicate	Ground water	NDY-104

RIN Number Assigned: All samples were assigned to RIN 04100119.

Sample Shipment: All samples were shipped (in two coolers) overnight FEDEX to Paragon Analytics, Inc. from Moab, Utah, on October 14, 2004 (Airbill Nos. 8473 2967 6178 and 8473 2967 6167).

Location Specific Information – Extraction Well Sampling: Each extraction well was sampled using dedicated submersible pumps. Extraction well water levels and pumping rates for each extraction well prior to sampling are provided in the table below:

Well No.	Date	Time	Depth to Water (ft btoc)	Pumping Rate (gpm)
0470	10/13/04	12:59	18.96	4.2
0471	10/13/04	13:23	19.41	3.45
0472	10/13/04	13:38	19.11	2.84
0473	10/13/04	14:09	18.18	0.1
0474	10/13/04	14:22	18.42	1.65
0475	10/13/04	14:39	19.43	2.15
0476	10/13/04	14:51	20.11	1.36
0477	10/13/04	15:07	18.51	1.40
0478	10/13/04	15:25	19.43	2.04
0479	10/13/04	15:39	19.74	2.10

Location Specific Information – Observation Well Sampling: Observation wells 0480 through 0485, 0403, and 0407 were sampled using micro-purge techniques with a peristaltic pump and dedicated tubing. Temporary downhole tubing was used for locations 0557 through 0561. Water levels and sample depths for each observation well are listed below.

Well No.	Date	Time	Depth to Water (ft btoc)	Sample Depth (ft bgs)
0403	10/14/04	13:23	16.75	17
0407	10/14/04	13:51	17.51	18
0480	10/13/04	16:09	17.07	18
0481	10/13/04	16:29	16.35	28
0482	10/13/04	16:51	16.91	58
0483	10/13/04	17:46	17.45	18
0484	10/13/04	18:05	17.11	28
0485	10/13/04	18:24	16.51	58
0557	10/13/04	17:15	16.01	40
0558	10/14/04	10:13	16.80	30
0559	10/14/04	10:52	17.97	19
0560	10/14/04	11:25	16.76	35
0561	10/14/04	11:55	16.75	50

Location Specific Information – Piezometers: Water levels (only) were measured in piezometers 0562, 0563, 0564, and 0565. These locations were not sampled. These data are provided below. Photographs are attached to this report.

Piezometer No.	Date	Time	Depth to Water (ft btoc)
0562	10/14/04	12:52	3.84
0563	10/14/04	12:54	2.81
0564	10/14/04	12:55	3.86
0565	10/14/04	12:56	1.49

Location Specific Information – Surface Water Sampling: A sample was collected of the first water encountered from the bank at surface water location 0216, which was approximately 10 ft off the base of the bank during this sampling event. The sample depth for this sample was 0.08 ft below the water level. A photo of this location is attached to this report.

The water level of the evaporation pond (based on the staff gauge) at the time 0547 and 0548 was sampled was 4.8 ft.

Well Inspection Summary: A well inspection was not conducted.

Equipment: All equipment functioned properly.

Regulatory: None.

Site Issues: The extraction wells had been running since June 2004.

According to the USGS Cisco Gaging Station (Station No. 09180500), the mean daily Colorado River Flow on 10/13/04 was 3,480 cfs. The flow decreased to 3,340 cfs on 10/14/04.

Corrective Action Required/Taken: None.

(KGP/lcg)

cc: J. D. Berwick, DOE-EM (e)
D. R. Metzler, DOE-EM
C. I. Bahrke, Stoller (e)
L. E. Cummins, Stoller (e)
S. E. Donivan, Stoller (e)
L. M. Edwards, Stoller (e)
S. D. Lyon, Stoller (e)
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K. G. Pill, Stoller (e)
J. E. Price, Stoller (e)
L. M. Wright, Stoller (e)
Working File MOA

Piezometers 0562 and 0563

Piezometers 0564 and 0565

Surface Water Location 0216