Data Validation Package

June 2010
Groundwater and Surface Water Sampling at the Old and New Rifle, Colorado, Processing Sites

October 2010

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Sampling Event Summary

Site: Rifle, Colorado, Processing Sites

Sampling Period: June 21−24, 2010

This event includes sampling groundwater and surface water at the New Rifle and Old Rifle, Colorado, Processing Sites, including three Environmental Remediation Sciences Program (ERSP) wells. Sampling and analysis were conducted as specified in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (LMS/PLN/S04351, continually updated). Duplicate samples were collected from ERSP location B–04 and New Rifle location 0664. One equipment blank was collected during this sampling event.

Samples were collected at the Old Rifle site from 11 monitoring wells (includes 3 ERSP wells) and 5 surface locations as specified in the 2001 *Ground Water Compliance Action Plan for the Old Rifle, Colorado, UMTRA Project Site*. Water levels were measured at each sampled well.

The contaminants of concern (COCs) at the Old Rifle site are selenium, uranium, and vanadium. Wells with sample concentrations that exceeded U.S. Environmental Protection Agency (EPA) groundwater standards are listed in Table 1.

Table 1. Old Rifle Locations that Exceed Standards

Analyte	Standard[a]	ACL[b]	Location	Concentration
Selenium	0.01	0.05	0305	0.025
			0655	0.064
Uranium	0.044	NA	0304	0.046
			0305	0.080
			0310	0.180
			0655	0.130
			0656	0.170

[a] Standards are listed in 40 CFR 192.02 Table 1 to Subpart A; units are in milligrams per liter (mg/L).
[b] Alternate concentration limit (ACL) proposed in 2001 *Ground Water Compliance Action Plan for the Old Rifle, Colorado, UMTRA Project Site*; units are in mg/L.

Time concentration graphs from the wells sampled are included with the analytical data. Data analysis indicates that the concentrations of the COCs are generally stable with fluctuations that may be partially attributable to a seasonal effect with the following exception. The selenium in well 0655 has trended upward significantly since April 2009. There is no indication of unexpected plume movement from this sampling event.

Analytical results for surface locations 0396 and 0741 that are adjacent to and downgradient of the site along the Colorado River are below the ACL at generally stable concentrations.

Samples were collected at the New Rifle site from 17 monitoring wells and seven surface locations in compliance with the 2008 *Ground Water Compliance Action Plan for the New Rifle, Colorado, Processing Site*. Water levels were measured at each sampled well.

The COCs at the New Rifle site are molybdenum, nitrate + nitrite as nitrogen, uranium, and vanadium. All COCs have a remedial action goal of the EPA groundwater standard or background concentration except vanadium; an ACL of 50 mg/L has been proposed for vanadium. The groundwater monitoring wells were sampled to monitor plume movement and natural flushing. Wells with sample concentrations that exceeded either the EPA groundwater standards or the maximum background value, which ever is greater, are listed in Table 2.

Table 2. New Rifle Locations that Exceed Standards

Analyte	Standard[a]	MBC[b]	Location	Concentration
Molybdenum	0.10	0.03	0201	1.8
			0217	1.6
			0590	1.0
			0635	0.4
			0658	2.2
			0659	2.2
			0664	0.3
			0669	1.5
			0670	0.5
			0855	1.8
Nitrate + Nitrite as Nitrogen	10	5.22	0170	17
			0201	52
			0590	63
			0620	28
			0635	10
			0658	23
			0659	17
			0664	15
			0670	55
			0855	15
Uranium	0.044	0.067	0170	0.056
			0172	0.062
			0201	0.074
			0217	0.120
			0590	0.081
			0620	0.065
			0635	0.072
			0658	0.069
			0659	0.081
			0664	0.088
			0669	0.140
			0670	0.290
			0855	0.052

[a]Standards are listed in 40 CFR 192.02 Table 1 to Subpart A; units are in mg/L.
[b]Maximum background concentration listed in 2008 *Ground Water Compliance Action Plan for the New Rifle, Colorado, Processing Site*; units are in mg/L.

Time concentration graphs are included with the analytical data. A significant increase in molybdenum and vanadium concentrations in well 0855 was observed in the spring of 2009. The increase in concentration was attributed to the de-watering activities performed by the city of Rifle. The molybdenum and vanadium concentrations in this well have returned values similar to those observed previous to the de-watering, with the vanadium concentration below the ACL. The COC concentrations are stable or decreasing at most other locations. Notable exceptions are the increasing uranium concentrations in wells 0669, 0670, and 0855; the concentration in well 0670 exceeded historical levels. Wells 0669 and 0670 were classified as Category II, which indicates that the water levels did not stabilize prior to sampling and the results are considered qualitative.

The surface water locations were sampled to monitor the impact of groundwater discharge. No large variations in the data were noted.

Richard E Dayvault 10/12/10

Richard Dayvault
Site Lead, S. M. Stoller

Date

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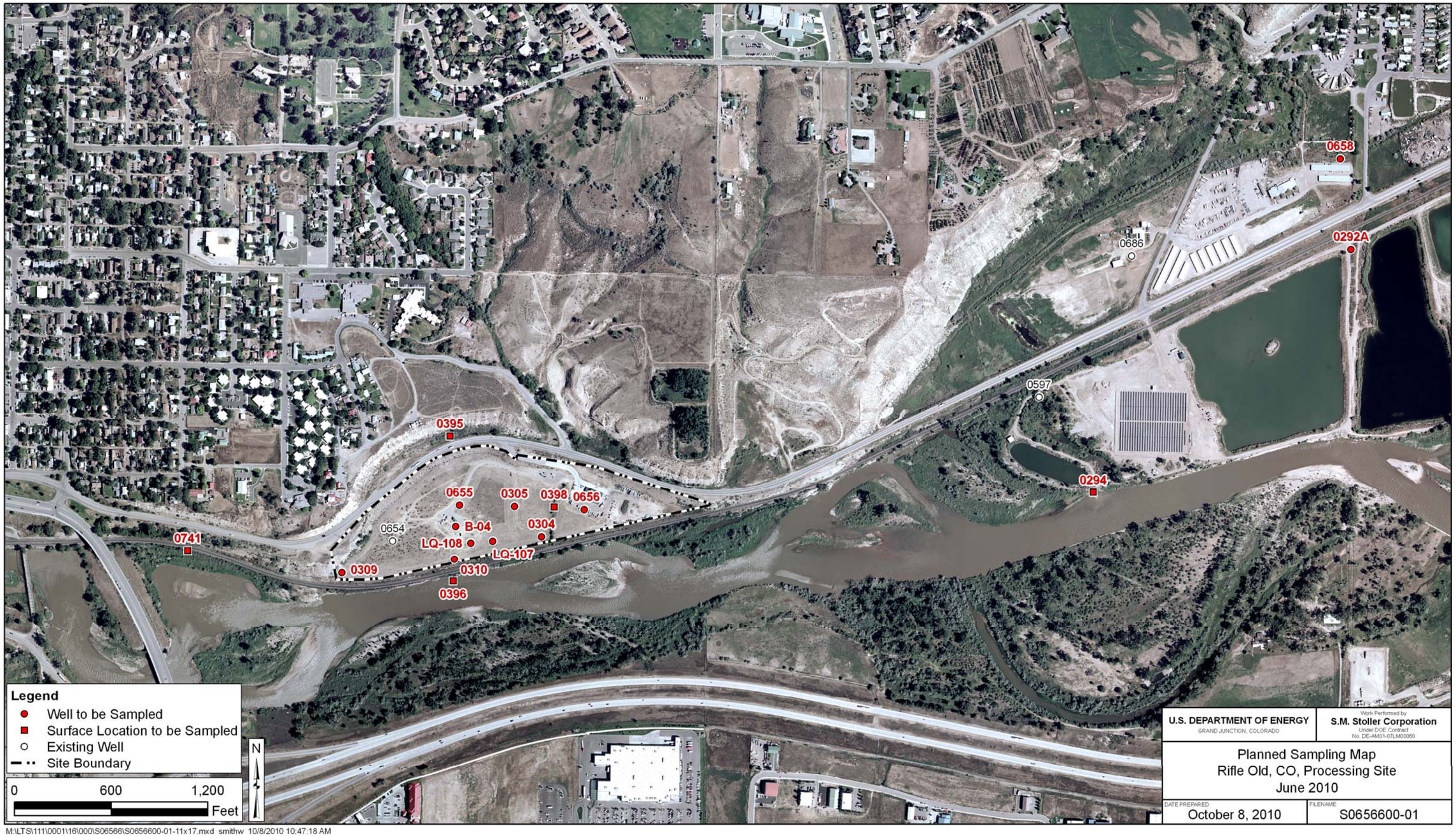
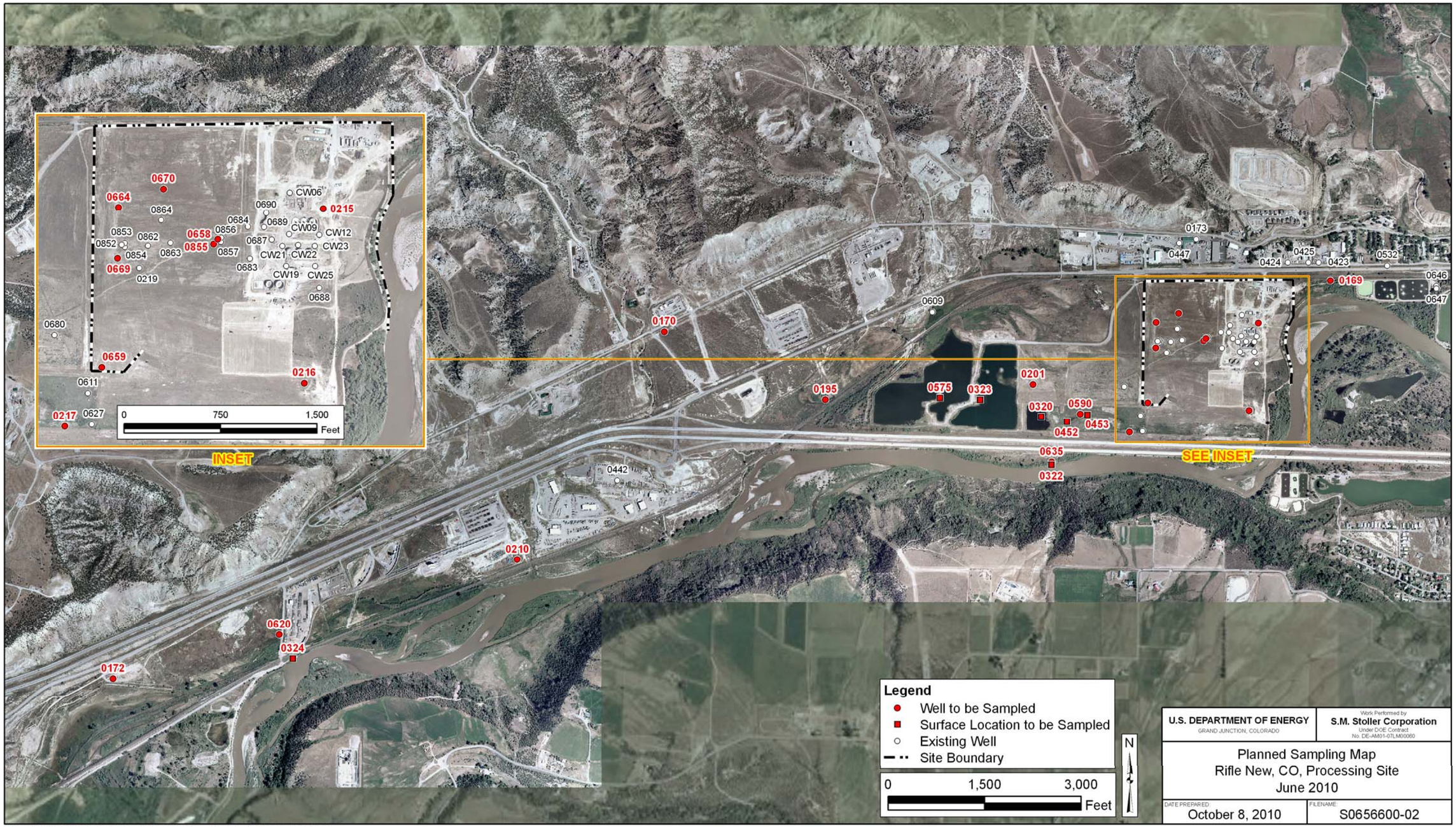


Rifle Old Sample Location Map



Rifle Nerw Sample Location Map

Data Assessment Summary

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Water Sampling Field Activities Verification Checklist

Project	Rifle, Colorado	**Date(s) of Water Sampling**	June 21−24, 2010
Date(s) of Verification	September 13, 2010	**Name of Verifier**	Steve Donivan

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOPs, instructions.		Work Order Letter dated May 24, 2010.
2. Were the sampling locations specified in the planning documents sampled?	No	Monitoring well 0210 was not found.
3. Was a pre-trip calibration conducted as specified in the above-named documents?	Yes	Pre-trip calibration was performed on June 21, 2010.
4. Was an operational check of the field equipment conducted daily?	Yes	Five checks were performed between June 21, 2010 and June 24, 2010.
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, specific conductance, 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 (continued)

	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?	Yes	
Was one pump/tubing volume removed prior to sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	Duplicate samples were collected from locations B-04 and 0664.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	One equipment blank was collected.
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	Location IDs 2927, 2948, and 2949 were used for QC samples.
Was the true identity of the samples recorded on the Quality Assurance Sample Log or in the Field Data Collection System (FDCS) report?	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 (hardcopies) or are dates present for the “Date Signed” fields (FDCS)?	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

Report Number (RIN):	10063154
Sample Event:	June 21−24, 2010
Site(s):	Rifle Processing Sites, Colorado
Laboratory:	ALS Laboratory Group, Fort Collins, Colorado
Work Order No.:	1006274
Analysis:	Metals and Wet Chemistry
Validator:	Steve Donivan
Review Date:	September 9, 2010

This validation was performed according to the *Environmental Procedures Catalog*, (LMS/PRO/S04325, continually updated) "Standard Practice for Validation of Laboratory Data." The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. 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
Bromide	MIS-A-038	SW-846 9056	SW-846 9056
Chloride	MIS-A-039	SW-846 9056	SW-846 9056
Dissolved Organic Carbon	WCH-A-024	EPA 415.1	EPA 415.1
Aluminum, Boron, Barium, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, Silicon, Strontium	LMM-01	SW-846 3005A	SW-846 6010B
Arsenic, Molybdenum, Selenium, Uranium, Vanadium	LMM-02	SW-846 3005A	SW-846 6020A
Nitrate + Nitrite as N	WCH-A-022	EPA 353.2	EPA 353.2
Sulfate	MIS-A-044	SW-846 9056	SW-846 9056
Sulfide	WCH-A-038	EPA 376.1	EPA 376.1
Uranium Isotopes	ASP-A-024		

Data Qualifier Summary

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

Table 4. Data Qualifier Summary

Sample Number	Location	Analyte(s)	Flag	Reason
All	All	Ammonia as N	J	Matrix spike failure
1006274-1	0292A	Aluminum	U	Less than 5 times the calibration blank
1006274-1	0292A	Iron	U	Less than 5 times the method blank
1006274-1	0292A	Sulfide	J	Missed holding time
1006274-1	0292A	Uranium-235	J	Less than the determination limit
1006274-2	0294	Aluminum	U	Less than 5 times the calibration blank
1006274-2	0294	Iron	U	Less than 5 times the calibration blank
1006274-2	0294	Sulfide	J	Missed holding time
1006274-2	0294	Uranium-234	J	Less than the determination limit
1006274-2	0294	Vanadium	J	Less than 5 times the equipment blank
1006274-3	0304	Aluminum	U	Less than 5 times the calibration blank
1006274-4	0305	Iron	U	Less than 5 times the calibration blank
1006274-5	0309	Sulfide	J	Missed holding time
1006274-5	0309	Uranium-235	J	Less than the determination limit
1006274-6	0310	Aluminum	U	Less than 5 times the calibration blank
1006274-6	0310	Sulfide	J	Missed holding time
1006274-7	0395	Aluminum	U	Less than 5 times the calibration blank
1006274-7	0395	Uranium-235	J	Less than the determination limit
1006274-8	0396	Aluminum	U	Less than 5 times the calibration blank
1006274-8	0396	Iron	U	Less than 5 times the calibration blank
1006274-8	0396	Sodium	J	Serial dilution failure
1006274-8	0396	Sulfide	J	Missed holding time
1006274-8	0396	Uranium-234	J	Less than the determination limit
1006274-8	0396	Uranium-238	J	Less than the determination limit
1006274-8	0396	Vanadium	J	Less than 5 times the equipment blank
1006274-9	0398	Aluminum	U	Less than 5 times the calibration blank
1006274-9	0398	Iron	U	Less than 5 times the method blank
1006274-9	0398	Sulfide	J	Missed holding time
1006274-9	0398	Uranium-235	J	Less than the determination limit
1006274-10	0655	Iron	U	Less than 5 times the method blank
1006274-11	0656	Sulfide	J	Missed holding time
1006274-12	0658	Aluminum	U	Less than 5 times the calibration blank
1006274-12	0658	Iron	U	Less than 5 times the calibration blank
1006274-12	0658	Sulfide	J	Missed holding time
1006274-12	0658	Uranium-235	J	Less than the determination limit
1006274-13	0741	Aluminum	U	Less than 5 times the calibration blank
1006274-13	0741	Iron	U	Less than 5 times the calibration blank
1006274-13	0741	Sulfide	J	Missed holding time
1006274-13	0741	Vanadium	J	Less than 5 times the equipment blank
1006274-14	B-04 Duplicate	Aluminum	U	Less than 5 times the calibration blank
1006274-14	B-04 Duplicate	Iron	U	Less than 5 times the method blank
1006274-14	B-04 Duplicate	Manganese	J	Poor field duplicate precision
1006274-14	B-04 Duplicate	Selenium	J	Poor field duplicate precision
1006274-15	B-04	Aluminum	U	Less than 5 times the calibration blank
1006274-15	B-04	Iron	U	Less than 5 times the method blank
1006274-15	B-04	Manganese	J	Poor field duplicate precision
1006274-15	B-04	Selenium	J	Poor field duplicate precision
1006274-16	LQ-107	Aluminum	U	Less than 5 times the calibration blank

Table 4 (continued). Data Qualifier Summary

Sample Number	Location	Analyte(s)	Flag	Reason
1006274-16	LQ-107	Sulfide	J	Missed holding time
1006274-17	LQ-108	Iron	U	Less than 5 times the method blank
1006274-17	LQ-108	Sulfide	J	Missed holding time
1006274-27	0322	Vanadium	J	Less than 5 times the equipment blank
1006274-29	0324	Vanadium	J	Less than 5 times the equipment blank

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 43 water samples on June 25, 2010, accompanied a Chain of Custody form. The Chain of Custody form was checked to confirm that all of the samples were listed with sample collection dates and times, and that signatures and dates were present indicating sample relinquishment and receipt. Copies of the shipping labels were included in the receiving documentation. The Chain of Custody form was complete with no errors or omissions.

Preservation and Holding Times

The sample shipments were received intact with the temperature inside the iced coolers between 1.8 °C and 4.6 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses. All analyses were performed within the applicable holding times with the exception sulfide. The affected sample sulfide results are qualified with a 'J' flag as estimated values.

Laboratory Instrument Calibration

Compliance requirements for 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 in accordance with the cited methods. All calibration and laboratory spike standards were prepared from independent sources.

Methods EPA 376.1, Sulfide
There is no initial or continuing calibration requirement associated with the determination of sulfide.

Method EPA 415.1, Dissolved Organic Carbon
Calibration was performed for dissolved organic carbon on January 4, 2010, using six calibration standards. The calibration curve correlation coefficient value was greater than 0.995 and the absolute values of the intercept was less than 3 times the method detection limit (MDL). Initial and continuing calibration verification checks (CCV) were made at the required frequency on July 7, 2010, resulting in five verification checks. All calibration checks met the acceptance criteria.

Method MCAWW 350.1, Ammonia as N
Calibrations for ammonia as N were performed using six calibration standards on June 29, and July 1, 2010. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and CCV checks were made at the required frequency resulting in 15 verification checks. All calibration check results were within the acceptance criteria.

Method MCAWW 353.2, Nitrate + Nitrite as N
Calibrations for nitrate + nitrite as N were performed using seven calibration standards on July 6, 2010. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and CCV checks were made at the required frequency resulting in 12 verification checks. All calibration check results were within the acceptance criteria.

Method SW-846 6010B, Metals
Calibrations for aluminum, boron, barium, calcium, iron, magnesium, manganese, potassium, sodium, silicon, and strontium were performed on July 28, 2010, using single point calibration. Initial and CCV checks were made at the required frequency resulting in 13 verification checks. All calibration checks met the acceptance criteria for the requested analytes with the exception of CCV12, CCV13, and CCV15 for sodium. None of the samples were bracketed by these CCVs. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit (PQL) and all results were within the acceptance range.

Method SW-846 6020A, Metals
Calibrations were performed for arsenic, molybdenum, selenium, uranium, and vanadium July 28, 2010, using four calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and CCV checks were made at the required frequency resulting in eight verification checks. 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 PQL and all results were within the acceptance range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries associated with requested analytes were stable and within acceptable ranges.

Method SW-846 9056, Bromide, Chloride, Sulfate
Calibrations for bromide, chloride and sulfate were performed using five calibration standards on July 1, and July 13, 2010. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and CCV checks were made at the required frequency resulting in 17 verification checks. All calibration checks met the acceptance criteria.

Radiochemical Analysis

Radiochemical results are qualified with a “J” flag (estimated) when the result is greater than the minimum detectable concentration (MDC), but less than Determination Limit (3 times the MDC). Radiochemical results are qualified with a “U” flag (not detected) when the result is

greater than the MDC, but less than the Decision Level Concentration estimated as the two sigma total propagated uncertainty.

Alpha Spectrometry
Alpha spectrometry calibrations and instrument backgrounds were performed within a month prior to sample analysis. Calibration standards were counted to obtain a minimum of 10,000 counts per peak. Daily instrument checks met the acceptance criteria. The tracer recoveries met the acceptance criteria of 30 to 110 percent for all samples. The full width at half maximum was reviewed to evaluate the spectral resolution. All internal standard full width at half maximum values were below 100 kiloelectron volts, demonstrating acceptable resolution. All internal standard peaks were within 50 kiloelectron volts of the expected position. The regions of interest for analyte peaks were reviewed. No manual integrations were performed and all regions of interest were satisfactory.

Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks (CCB) are analyzed to assess instrument contamination prior to and during sample analysis. All method blank and calibration blank results associated with the samples were below the PQL for all analytes with the exception of CCB5 and CCB8 for nitrate/nitrite as N, CCB1 and CCB7 for chloride on July 13, 2010, and CCB1 for sulfate on July 13, 2010. The samples bracketed by the CCBs for nitrate/nitrite as N either contained more than 10 times the concentration of nitrate/nitrite as N detected in the CCB, were below the reporting limit, or were re-analyzed with acceptable CCBs. Sulfate was not reported from the samples bracketed by CCB1. The samples bracketed by the CCBs for chloride contained more than 10 times the concentration of chloride detected in the CCB. In cases where a blank concentration exceeds the MDL, the associated sample results are qualified with a "U" flag (not detected) when the sample result is greater than the MDL but less than 5 times the blank concentration. For barium, boron, potassium, sodium, and strontium the blank results were negative and the absolute values were greater than the MDL but less than the PQL. All associated sample results for these analytes were greater than 5 times the MDL.

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

ICP interference check samples ICSA and ICSAB were analyzed at the required frequency to verify the instrumental interelement and background correction factors. All check sample results were acceptable with the exception of the molybdenum ICSAB on July 28, 2010, which was above the acceptance range. The molybdenum results for samples that have calcium and magnesium concentrations in the diluted sample that are comparable to the ICSAB standard are qualified with a "J" flag (estimated).

Matrix Spike Analysis

Matrix spike and matrix spike duplicate (MS/MSD) samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spikes met the recovery and precision criteria for all analytes evaluated with the following exceptions. The recovery for a potassium spike was above the acceptance range, which may indicate systematic matrix interference. All potassium results are qualified with a "J" flag (estimated). The MS/MSD

ammonia as N recoveries were below the acceptance range for both sets of spikes analyzed indicating a systematic matrix interference. The ammonia as N results for all samples are qualified with a "J" flag as estimated values.

Laboratory Replicate Analysis

Laboratory replicate sample results demonstrate acceptable laboratory precision. The relative percent difference values for the sample replicates and matrix spike replicates were less than 20 percent for results that are greater than 5 times the PQL, indicating acceptable precision.

Laboratory Control Sample

Laboratory control samples were analyzed at the correct frequency to provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. All control sample results were acceptable.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. Serial dilution data are evaluated when the concentration of the undiluted sample is greater than 100 times the PQL for ICP-MS or greater than 50 times the PQL for ICP. The relative percent difference for all potassium dilutions were above the acceptance range, which may indicate systematic matrix interference; the associated results are qualified with a "J" flag (estimated). All serial other dilution results were within the acceptance range.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of molybdenum, uranium, and vanadium to reduce interferences. The required detection limits were met for all analytes.

Completeness

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

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all ion chromatography data. There were no manual integrations performed and all peak integrations were satisfactory.

Electronic Data Deliverable (EDD) File

The EDD file arrived on August 3, 2010. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure that the requested data have been delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 10063154 **Lab Code:** PAR **Validator:** Steve Donivan **Validation Date:** 9/8/2010

Project: Rifle Disposal/Processing Site (old/new) **Analysis Type:** ☑ Metals ☑ General Chem ☑ Rad ☐ Organics

# of Samples: 43 **Matrix:** WATER **Requested Analysis Completed:** Yes

Chain of Custody

Present: OK **Signed:** OK **Dated:** OK

Sample

Integrity: OK **Preservation:** OK **Temperature:** OK

Select Quality Parameters

☑ Holding Times	There are 11 holding time failures.
☑ Detection Limits	There are 0 detection limit failures.
☑ Field/Trip Blanks	There was 1 trip/equipment blank evaluated.
☑ Field Duplicates	There were 2 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

RIN: 10063154 Lab Code: PAR

Non-Compliance Report: Holding Times

Project: Rifle Disposal/Processing Site (old/new)

Validation Date: 9/8/2010

				Holding Times			Criteria			Reported Dates		
Ticket	Location	Lab Sample ID	Method Code	Collection to Preparation	Preparation to Analysis	Collection to Analysis	Collection to Preparation	Preparation to Analysis	Collection to Analysis	Collection Date	Preparation Date	Analysis Date
IHW 117	0309	1006274-5	WCH-A-038			8			7	06/22/2010	06/30/2010	06/30/2010
IHW 118	0310	1006274-6	WCH-A-038			8			7	06/22/2010	06/30/2010	06/30/2010
IHW 120	0656	1006274-11	WCH-A-038			8			7	06/22/2010	06/30/2010	06/30/2010
IHW 121	0658	1006274-12	WCH-A-038			9			7	06/21/2010	06/30/2010	06/30/2010
IHW 122	0396	1006274-8	WCH-A-038			8			7	06/22/2010	06/30/2010	06/30/2010
IHW 123	0398	1006274-9	WCH-A-038			8			7	06/22/2010	06/30/2010	06/30/2010
IHW 124	0741	1006274-13	WCH-A-038			8			7	06/22/2010	06/30/2010	06/30/2010
IHW 125	LQ-108	1006274-17	WCH-A-038			8			7	06/22/2010	06/30/2010	06/30/2010
IHW 129	0292A	1006274-1	WCH-A-038			9			7	06/21/2010	06/30/2010	06/30/2010
IHW 130	0294	1006274-2	WCH-A-038			9			7	06/21/2010	06/30/2010	06/30/2010
IHW 131	LQ-107	1006274-16	WCH-A-038			8			7	06/22/2010	06/30/2010	06/30/2010

SAMPLE MANAGEMENT SYSTEM
Radiochemistry Data Validation Worksheet

RIN: 10063154 **Lab Code:** PAR **Date Due:** 7/23/2010

Matrix: Water **Site Code:** RFL **Date Completed:** 8/6/2010

Sample	Analyte	Date Analyzed	Result	Flag	Tracer %R	LCS %R	MS %R	Duplicate
0292A	Uranium-233+234	07/19/2010			83.8			
0294	Uranium-233+234	07/19/2010			66.9			
0304	Uranium-233+234	07/19/2010			81.1			
0305	Uranium-233+234	07/19/2010			88.1			
0309	Uranium-233+234	07/19/2010			81.1			
0310	Uranium-233+234	07/19/2010			83.6			
0395	Uranium-233+234	07/19/2010			76.9			
0396	Uranium-233+234	07/19/2010			81.9			
0398	Uranium-233+234	07/19/2010			78.8			
0655	Uranium-233+234	07/19/2010			78.5			
0656	Uranium-233+234	07/19/2010			80.2			
0658	Uranium-233+234	07/19/2010			55.4			
0741	Uranium-233+234	07/19/2010			85.6			
2927	Uranium-233+234	07/19/2010			78.0			
B-04	Uranium-233+234	07/19/2010			78.5			
LQ-107	Uranium-233+234	07/19/2010			49.5			
LQ-108	Uranium-233+234	07/19/2010			83.6			
0309	Uranium-233+234	07/19/2010			76.3			0.34
2927	Uranium-233+234	07/19/2010			77.5			0.05
Blank_Spike	Uranium-233+234	07/19/2010			48.7	107.00		
Blank	Uranium-233+234	07/19/2010	0.2180	U	74.3			
0309	Uranium-235	07/19/2010						0.68
2927	Uranium-235	07/19/2010						2.82
Blank	Uranium-235	07/19/2010	0.0733	U				
0309	Uranium-238	07/19/2010						0.13
2927	Uranium-238	07/19/2010						0.60
Blank_Spike	Uranium-238	07/19/2010				109.00		
Blank	Uranium-238	07/19/2010	0.1820	U				

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 10063154 **Lab Code:** PAR **Date Due:** 7/23/2010

Matrix: Water **Site Code:** RFL **Date Completed:** 8/6/2010

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
AMMONIA AS N	06/29/2010	-0.030	0.9998	OK	OK	OK	OK	OK	96	48	49	1	
AMMONIA AS N	07/01/2010	-0.020	0.9999	OK	OK	OK	OK	OK	98	52	54	4	
AMMONIA AS N	07/01/2010							OK	98				
BROMIDE	07/07/2010	0.000	1.0000	OK	OK	OK	OK	OK	100	103	106	2	
BROMIDE	07/07/2010									101			
CHLORIDE	07/07/2010	0.000	1.0000	OK	OK	OK	OK	OK	99				
Dissolved Organic Carbon	07/07/2010	0.000	1.0000	OK	OK	OK	OK	OK	110	97	97	0	
Dissolved Organic Carbon	07/07/2010								106	100	100	0	
Nitrate+Nitrite as N	07/06/2010	0.000	0.9998	OK	OK	OK	OK	OK	105	101	105	4	
Nitrate+Nitrite as N	07/06/2010							OK	101	104	96	8	
Nitrate+Nitrite as N	07/06/2010							OK	101				
SULFATE	07/07/2010	0.000	1.0000	OK	OK	OK	OK	OK	94				
SULFIDE	06/30/2010							OK	103				

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 10063154 **Lab Code:** PAR **Date Due:** 7/23/2010

Matrix: Water **Site Code:** RFL **Date Completed:** 8/6/2010

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
Aluminum	07/28/2010			OK	OK	OK	OK	OK	102.0	101.0	101.0	0.0	102.0		98.0
Arsenic	07/28/2010	0.0000	1.0000	OK	OK	OK	OK	OK	96.0	98.0	97.9	0.0	107.0		120.0
Barium	07/28/2010			OK	OK	OK	OK	OK	101.0	101.0	101.0	0.0	99.0	8.0	100.0
Boron	07/28/2010			OK	OK	OK	OK	OK	105.0	105.0	106.0	1.0	101.0		102.0
Calcium	07/28/2010			OK	OK	OK	OK	OK	98.0	99.0	99.0	0.0	104.0	2.0	96.0
Iron	07/28/2010			OK	OK	OK	OK	OK	107.0	102.0	103.0	1.0	106.0		89.0
Magnesium	07/28/2010			OK	OK	OK	OK	OK	99.0	99.0	99.0	0.0	107.0	2.0	96.0
Manganese	07/28/2010			OK	OK	OK	OK	OK	100.0	99.0	99.0	1.0	96.0		101.0
Molybdenum	07/28/2010	0.0000	1.0000	OK	OK	OK	OK	OK	95.0	97.0	97.0	0.0	100.0	3.0	107.0
Molybdenum	07/28/2010							OK	93.0	98.0	98.9	1.0		1.0	
Molybdenum	07/28/2010							OK	85.0						
Potassium	07/28/2010			OK	OK	OK	OK	OK	96.0	104.0	103.0	1.0			72.0
Selenium	07/28/2010	0.0000	1.0000	OK	OK	OK	OK	OK	99.0	99.0	98.3	0.0	104.0		110.0
Silicon	07/28/2010			OK	OK	OK	OK	OK	99.0	97.0	97.0	0.0	94.0	4.0	95.0
Sodium	07/28/2010			OK	OK	OK	OK	OK	94.0	95.0	94.0	1.0		11.0	77.0
Strontium	07/28/2010			OK	OK	OK	OK	OK	101.0	101.0	101.0	0.0	96.0		89.0
Uranium	07/28/2010	0.0000	1.0000	OK	OK	OK	OK	OK	94.0	98.0	96.3	2.0	105.0	1.0	120.0
Uranium	07/28/2010							OK	97.0	97.0	96.9	0.0		5.0	

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 10063154 **Lab Code:** PAR **Date Due:** 7/23/2010

Matrix: Water **Site Code:** RFL **Date Completed:** 8/6/2010

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
Uranium	07/28/2010							OK	92.0						
Vanadium	07/28/2010	0.0000	1.0000	OK	OK	OK	OK	OK	93.0	93.0	93.3	0.0	103.0		97.0
Vanadium	07/28/2010							OK	91.0	95.0	95.5	0.0			
Vanadium	07/28/2010							OK	88.0						

Sampling Quality Control Assessment

The following information summarizes and assesses quality control for this sampling event.

Sampling Protocol

Sample results for all monitoring wells were qualified with an "F" flag in the database, indicating the wells were purged and sampled using the low-flow sampling method. All wells met the Category I criteria with the following exceptions. New Rifle wells 0669 and 0670 were classified as Category II. The sample results for these wells were qualified with a "Q" flag, indicating the data are qualitative because of the sampling technique.

Equipment Blank Assessment

Equipment blanks were collected after completion of decontamination and prior to collection of environmental samples. These blanks are useful in documenting adequate decontamination of sampling equipment. One equipment blank was collected during this event. Vanadium was detected in this equipment blank. The associated sample results that are greater than the MDL but less than 4 times the equipment blank concentration are qualified with a "J" flag (estimated). The equipment blank results indicate adequate decontamination of the sampling equipment.

Field Duplicate Assessment

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 duplicates, which measure only laboratory performance. The relative percent difference for duplicate results that are greater than 5 times the PQL should be less than 20 percent. For results less than 4 times the PQL, the range should be no greater than the PQL. Duplicate samples were collected from locations B–04 and 0664. With the following exceptions, the duplicate results were acceptable. The difference in manganese and selenium results at location B–04 is outside acceptance limits. The sample and duplicate results for manganese and selenium are qualified with a "J" flag as estimated values.

SAMPLE MANAGEMENT SYSTEM

Validation Report: Equipment/Trip Blanks

RIN: 10063154 **Lab Code:** PAR **Project:** Rifle Disposal/Processing Site (old/new) **Validation Date:** 9/8/2010

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	1006274-43	SW6020	Vanadium	0.3		0.046	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
1006274-13	IHW 124	0741	0.5	1		J
1006274-2	IHW 130	0294	0.57	1		J
1006274-26	IHW 150	0320	220	50		
1006274-27	IHW 151	0322	0.86	3		J
1006274-28	IHW 152	0323	4.3	3		
1006274-29	IHW 153	0324	0.78	3		J
1006274-30	IHW 154	0452	1300	100		
1006274-31	IHW 155	0453	1400	10		
1006274-32	IHW 156	0575	3.2	3		
1006274-7	IHW 128	0395	1.6	1		
1006274-8	IHW 122	0396	0.64	1		J
1006274-9	IHW 123	0398	3.7	1		

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 10063154 **Lab Code:** PAR **Project:** Rifle Disposal/Processing Site (old/new) **Validation Date:** 9/8/2010

Duplicate: 2927 **Sample:** B-04

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
Aluminum	130	B		1	90	B		1	36.36		UG/L
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
Arsenic	44			10	52			10	16.67		UG/L
Barium	46			1	44			1	4.44		UG/L
Boron	420			1	410			1	2.41		UG/L
BROMIDE	0.55			2	0.55			2			MG/L
Calcium	250000			1	250000			1	0		UG/L
CHLORIDE	170			20	170			20	0		MG/L
Dissolved Organic Carbon	3.7			1	3.9			1			MG/L
Iron	220			1	180			1	20.00		UG/L
Magnesium	140000			1	130000			1	7.41		UG/L
Manganese	52			1	42			1	21.28		UG/L
Molybdenum	24			10	28			10	15.38		UG/L
Nitrate+Nitrite as N	0.3			1	0.51			1	51.85		MG/L
Potassium	12000			1	12000			1	0		UG/L
Selenium	50			10	69			10	31.93		UG/L
Silica	25000			1	25000			1	0		UG/L
Silicon	12000			1	12000			1	0		UG/L
Sodium	210000			1	210000			1	0		UG/L
Strontium	3700			1	3600			1	2.74		UG/L
SULFATE	880			20	910			20	3.35		MG/L
SULFIDE	2	U		1	2	U		1			MG/L
Uranium	210			10	230			10	9.09		UG/L
Uranium-233+234	81.4		13.4	1	80.8		13.4	1	0.74	0.1	pCi/L
Uranium-235	4.58		1.21	1	4.47		1.21	1	2.43	0.1	pCi/L
Uranium-238	75.3		12.4	1	74.8		12.4	1	0.67	0.1	pCi/L
Vanadium	2100			10	2400			10	13.33		UG/L

Duplicate: 2948 **Sample:** 0664

Analyte	Sample Result	Sample Flag	Sample Error	Sample Dilution	Duplicate Result	Duplicate Flag	Duplicate Error	Duplicate Dilution	RPD	RER	Units
AMMONIA AS N	38			10	37			10	2.67		MG/L
Molybdenum	280			100	270			100	3.64		UG/L
Nitrate+Nitrite as N	15			10	15			10	0		MG/L
Uranium	88			100	82			100	7.06		UG/L
Vanadium	2600			100	2600			100	0		UG/L

Certification

All laboratory analytical quality control criteria were met except as qualified in this report. The data qualifiers listed on the SEEPro database reports are defined on the last page of each report. All data in this package are considered validated and available for use.

Laboratory Coordinator: Steve Donivan — Date: 10-18-2010

Data Validation Lead: Steve Donivan — Date: 10-18-2010

Attachment 1
Assessment of Anomalous Data

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Potential Outliers Report

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Potential Outliers Report

Potential outliers are measurements that are extremely large or small relative to the rest of the data and, therefore, are suspected of misrepresenting the population from which they were collected. Potential outliers may result from transcription errors, data-coding errors, or measurement system problems. However, outliers may also represent true extreme values of a distribution and indicate more variability in the population than was expected.

Statistical outlier tests give probabilistic evidence that an extreme value does not "fit" with the distribution of the remainder of the data and is therefore a statistical outlier. These tests should only be used to identify data points that require further investigation. The tests alone cannot determine whether a statistical outlier should be discarded or corrected within a data set.

There are three steps involved in identifying extreme values or outliers:

1. Identify extreme values that may be potential outliers by generating the Outliers Report using the Sample Management System from data in the SEEPro database. The application compares the new data set with historical data and lists the new data that fall outside the historical data range. A determination is also made if the data are normally distributed using the Shapiro-Wilk Test.
2. Apply the appropriate statistical test. Dixon's Extreme Value test is used to test for statistical outliers when the sample size is less than or equal to 25. This test considers both extreme values that are much smaller than the rest of the data (case 1) and extreme values that are much larger than the rest of the data (case 2). This test is valid only if the data without the suspected outlier are normally distributed. Rosner's Test is a parametric test that is used to detect outliers for sample sizes of 25 or more. This test also assumes that the data without the suspected outliers are normally distributed.
3. Scientifically review statistical outliers and decide on their disposition.

Nine results were identified as potentially anomalous and are listed on the Anomalous Data Review Checksheet. These results were subject to further review with no discrepancies noted and the data for this RIN are acceptable for use as qualified.

Data Validation Outliers Report - No Field Parameters
Comparison: All Historical Data
Laboratory: ALS Laboratory Group
RIN: 10063154
Report Date: 9/13/2010

					Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
						Qualifiers			Qualifiers			Qualifiers				
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
RFN01	0169	N001	06/24/2010	Nitrate + Nitrite as Nitrogen	0.01	U	F	5.3		F	1.4		F	5	0	No
RFN01	0169	N001	06/24/2010	Uranium	0.018		F	0.0419			0.028		F	17	0	Yes
RFN01	0170	N001	06/24/2010	Nitrate + Nitrite as Nitrogen	17		F	37		F	22		F	5	0	No
RFN01	0195	N001	06/22/2010	Ammonia Total as N	0.97		FJ	46		F	1.6		F	7	0	No
RFN01	0195	N001	06/22/2010	Molybdenum	0.035		F	0.6		FJ	0.054		JF	16	0	No
RFN01	0195	N001	06/22/2010	Uranium	0.016		F	0.177			0.029		F	16	0	No
RFN01	0201	N001	06/22/2010	Nitrate + Nitrite as Nitrogen	52		F	130		F	53		F	8	0	No
RFN01	0215	N001	06/24/2010	Molybdenum	0.013		F	0.1	U		0.0166		F	22	1	No
RFN01	0215	N001	06/24/2010	Uranium	0.034		F	0.029			0.008	E	F	28	0	No
RFN01	0216	N001	06/24/2010	Vanadium	0.14		F	0.97		F	0.17		F	27	0	No
RFN01	0217	N001	06/22/2010	Ammonia Total as N	53		FJ	110		F	61		F	9	0	No
RFN01	0320	N001	06/22/2010	Ammonia Total as N	10		J	110			15			6	0	No
RFN01	0322	0001	06/22/2010	Uranium	0.00098			0.003			0.001			15	0	No
RFN01	0323	N001	06/22/2010	Molybdenum	2.5			2.2		J	1.1		J	10	0	No
RFN01	0323	N001	06/22/2010	Nitrate + Nitrite as Nitrogen	91			130			95			9	0	No
RFN01	0323	N001	06/22/2010	Uranium	0.29			0.26			0.164			10	0	No
RFN01	0452	N001	06/22/2010	Ammonia Total as N	21		J	98			22			6	0	No
RFN01	0452	N001	06/22/2010	Nitrate + Nitrite as Nitrogen	30			250			62			6	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All Historical Data
Laboratory: ALS Laboratory Group
RIN: 10063154
Report Date: 9/13/2010

					Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
						Qualifiers			Qualifiers			Qualifiers				
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
RFN01	0453	0001	06/22/2010	Ammonia Total as N	30		J	120			51			6	0	No
RFN01	0453	0001	06/22/2010	Nitrate + Nitrite as Nitrogen	28			210			56			6	0	No
RFN01	0453	0001	06/22/2010	Uranium	0.21			0.157			0.0022			8	0	No
RFN01	0635	N001	06/24/2010	Ammonia Total as N	99		FJ	210		F	120		F	7	0	No
RFN01	0658	N001	06/23/2010	Ammonia Total as N	48		FJ	180		F	55		F	7	0	No
RFN01	0658	N001	06/23/2010	Vanadium	52		F	44.1			3.55		L	25	0	Yes
RFN01	0659	N001	06/23/2010	Ammonia Total as N	35		FJ	92		F	43		F	12	0	No
RFN01	0664	N001	06/23/2010	Molybdenum	0.28		F	0.888			0.33		F	16	0	No
RFN01	0664	N002	06/23/2010	Molybdenum	0.27		F	0.888			0.33		F	16	0	No
RFN01	0670	N001	06/23/2010	Nitrate + Nitrite as Nitrogen	55		FQ	10		F	2.9		LQ	8	0	Yes
RFN01	0670	N001	06/23/2010	Uranium	0.29		FQ	0.134			0.036		FJ	15	0	Yes
RFN01	0670	N001	06/23/2010	Vanadium	1.4		FQ	5.02		L	2.2		F	15	0	No
RFO01	0294	0001	06/21/2010	Selenium	0.00024			0.00066			0.00038			6	0	No
RFO01	0294	0001	06/21/2010	Uranium	0.0011			0.0027			0.0014			6	0	No
RFO01	0304	N001	06/23/2010	Calcium	240		F	210		F	179			6	0	No
RFO01	0304	N001	06/23/2010	Chloride	200		F	180		F	75.6			6	0	No
RFO01	0304	N001	06/23/2010	Iron	0.49		UF	0.26		F	0.078		F	6	0	Yes
RFO01	0304	N001	06/23/2010	Manganese	0.75		F	0.592			0.39		F	8	0	Yes

Data Validation Outliers Report - No Field Parameters
Comparison: All Historical Data
Laboratory: ALS Laboratory Group
RIN: 10063154
Report Date: 9/13/2010

					Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
						Qualifiers			Qualifiers			Qualifiers				
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
RFO01	0304	N001	06/23/2010	Molybdenum	0.0093		F	0.0292			0.01		F	8	0	No
RFO01	0304	N001	06/23/2010	Sodium	130		F	120		F	96.5			6	0	No
RFO01	0304	N001	06/23/2010	Vanadium	0.025		F	0.11		F	0.0285			25	0	Yes
RFO01	0305	N001	06/23/2010	Manganese	0.67		F	0.508			0.21		F	6	0	No
RFO01	0305	N001	06/23/2010	Molybdenum	0.01		F	0.0508			0.013		F	6	0	No
RFO01	0309	N001	06/22/2010	Calcium	190		F	170		F	140			5	0	No
RFO01	0309	N001	06/22/2010	Magnesium	130		F	120		F	107			5	0	No
RFO01	0309	N001	06/22/2010	Manganese	0.67		F	0.59		F	0.41			7	0	No
RFO01	0310	N001	06/22/2010	Calcium	270		F	260		F	170			5	0	No
RFO01	0310	N001	06/22/2010	Chloride	210		F	190		F	90.4			5	0	No
RFO01	0310	N001	06/22/2010	Manganese	1.7		F	1.6		F	1.13			8	0	No
RFO01	0310	N001	06/22/2010	Molybdenum	0.033		F	0.05			0.036		F	8	0	No
RFO01	0310	N001	06/22/2010	Sulfate	980		F	920		F	671		J	5	0	No
RFO01	0398	N001	06/22/2010	Magnesium	50			99			55			7	0	No
RFO01	0398	N001	06/22/2010	Sulfate	300			847			330			7	0	No
RFO01	0398	N001	06/22/2010	Uranium	0.014			0.0381			0.016			28	0	No
RFO01	0655	N001	06/23/2010	Chloride	190		F	130		F	99		F	6	0	Yes
RFO01	0655	N001	06/23/2010	Molybdenum	0.01		F	0.0192			0.012		F	9	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All Historical Data
Laboratory: ALS Laboratory Group
RIN: 10063154
Report Date: 9/13/2010

					Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
						Qualifiers			Qualifiers			Qualifiers				
Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
RFO01	0655	N001	06/23/2010	Selenium	0.064		F	0.061			0.0088		F	26	0	No
RFO01	0655	N001	06/23/2010	Sodium	240		F	177			144			6	0	Yes
RFO01	0655	N001	06/23/2010	Sulfate	880		F	850		F	700		F	6	0	No
RFO01	0656	N001	06/22/2010	Chloride	200		F	170		F	92.6			6	0	No
RFO01	0656	N001	06/22/2010	Manganese	0.22		F	0.13		F	0.0004	U		8	3	No
RFO01	0656	N001	06/22/2010	Molybdenum	0.016		F	0.015		F	0.0071		F	8	0	No
RFO01	0656	N001	06/22/2010	Sodium	190		F	160		F	92.6			6	0	No
RFO01	0656	N001	06/22/2010	Uranium	0.17		F	0.14		F	0.0318		F	26	0	No
RFO01	0658	N001	06/21/2010	Calcium	170		F	289			180		F	5	0	No
RFO01	0658	N001	06/21/2010	Sodium	94		F	655			95		F	5	0	No
RFO01	0741	0001	06/22/2010	Calcium	34			66			36.7			7	0	No
RFO01	0741	0001	06/22/2010	Magnesium	6.1			14.1			7.71			7	0	No
RFO01	0741	0001	06/22/2010	Sodium	23			113			25.2			6	0	No

STATISTICAL TESTS:
The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test
Outliers are identified using Dixon's Test when there are 25 or fewer data points.
Outliers are identified using Rosner's Test when there are 26 or more data points.
See Data Quality Assessment: Statistical Methods for Practitioners, EPA QC/G-9S, February 2006.

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Anomalous Data Review Checksheet

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Anomalous Data Review Checksheet

Site: New and Old Rifle Processing Sites **Sampling Data:** Groundwater and Surface Water

Reviewer: Steve Donivan (Name (print)) Steve Donivan (Signature) 10-18-2010 (Date)

Site Hydrologist: Richard Dayvault (Name (print)) Dayvault (Signature) 10/18/10 (Date)

Date of Review: September 14, 2010

Loc. No.	Analyte	Type of Anomaly	Disposition
RFN 0169	Uranium	Low	Low variability in data, not measured since April 2008, Does not require further review.
RFN 0658	Vanadium	High	Not measured since April 2007, Does not require further review.
RFN 0670	Nitrate + Nitrite as N	High	Apparent upward trend. Does not require further review.
RFN 0670	Uranium	High	Apparent upward trend. Does not require further review.
RFO 0304	Iron	High	Only two recent data points. Does not require further review.
RFO 0304	Manganese	High	Only two recent data points. Does not require further review.
RFO 0304	Vanadium	Low	Apparent downward trend. Does not require further review.
RFO 0655	Chloride	High	Only two recent data points. Does not require further review.
RFO 0655	Sodium	High	Only two recent data points. Does not require further review.

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Attachment 2
Data Presentation

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Old Rifle
Groundwater Quality Data

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Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0292A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/21/2010	N001	10.5	-	20.5	503		F	#		
Aluminum	mg/L	06/21/2010	N001	10.5	-	20.5	0.028	B	UF	#	0.016	
Ammonia Total as N	mg/L	06/21/2010	N001	10.5	-	20.5	0.32	N	FJ	#	0.1	
Arsenic	mg/L	06/21/2010	N001	10.5	-	20.5	0.00053		F	#	0.000015	
Barium	mg/L	06/21/2010	N001	10.5	-	20.5	0.038		F	#	0.00006	
Boron	mg/L	06/21/2010	N001	10.5	-	20.5	0.33		F	#	0.00074	
Bromide	mg/L	06/21/2010	N001	10.5	-	20.5	0.2	U	F	#	0.2	
Calcium	mg/L	06/21/2010	N001	10.5	-	20.5	150		F	#	0.0037	
Chloride	mg/L	06/21/2010	N001	10.5	-	20.5	90		F	#	4	
Dissolved Organic Carbon	mg/L	06/21/2010	N001	10.5	-	20.5	3.2		F	#	1	
Dissolved Oxygen	mg/L	06/21/2010	N001	10.5	-	20.5	2.69		F	#		
Field Ferrous Iron	mg/L	06/21/2010	N001	10.5	-	20.5	0		F	#		
Iron	mg/L	06/21/2010	N001	10.5	-	20.5	0.22		UF	#	0.0072	
Magnesium	mg/L	06/21/2010	N001	10.5	-	20.5	91		F	#	0.0032	
Manganese	mg/L	06/21/2010	N001	10.5	-	20.5	0.82		F	#	0.000054	
Molybdenum	mg/L	06/21/2010	N001	10.5	-	20.5	0.011		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/21/2010	N001	10.5	-	20.5	0.011		F	#	0.01	
Oxidation Reduction Potential	mV	06/21/2010	N001	10.5	-	20.5	126.8		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0292A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/21/2010	N001	10.5	-	20.5	7.02		F	#		
Potassium	mg/L	06/21/2010	N001	10.5	-	20.5	7.6		F	#	0.02	
Selenium	mg/L	06/21/2010	N001	10.5	-	20.5	0.00038		F	#	0.000032	
Silica	mg/L	06/21/2010	N001	10.5	-	20.5	23		F	#	0.0026	
Silicon	mg/L	06/21/2010	N001	10.5	-	20.5	11		F	#	0.0012	
Sodium	mg/L	06/21/2010	N001	10.5	-	20.5	220		F	#	0.23	
Specific Conductance	umhos /cm	06/21/2010	N001	10.5	-	20.5	2322		F	#		
Strontium	mg/L	06/21/2010	N001	10.5	-	20.5	2.2		F	#	0.00006	
Sulfate	mg/L	06/21/2010	N001	10.5	-	20.5	720		F	#	10	
Sulfide	mg/L	06/21/2010	N001	10.5	-	20.5	2	U	FJ	#	2	
Temperature	C	06/21/2010	N001	10.5	-	20.5	12.96		F	#		
Turbidity	NTU	06/21/2010	N001	10.5	-	20.5	3.07		F	#		
Uranium	mg/L	06/21/2010	N001	10.5	-	20.5	0.029		F	#	0.0000029	
Uranium-234	pCi/L	06/21/2010	N001	10.5	-	20.5	16.3		F	#	0.24	3.02
Uranium-235	pCi/L	06/21/2010	N001	10.5	-	20.5	0.488		FJ	#	0.22	0.313
Uranium-238	pCi/L	06/21/2010	N001	10.5	-	20.5	10.5		F	#	0.26	2.09
Vanadium	mg/L	06/21/2010	N001	10.5	-	20.5	0.00039		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0304 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	13.2	-	18.2	261		F	#		
Aluminum	mg/L	06/23/2010	N001	13.2	-	18.2	0.033	B	UF	#	0.016	
Ammonia Total as N	mg/L	06/23/2010	N001	13.2	-	18.2	18		FJ	#	0.5	
Arsenic	mg/L	06/23/2010	N001	13.2	-	18.2	0.002		F	#	0.000015	
Barium	mg/L	06/23/2010	N001	13.2	-	18.2	0.04		F	#	0.00006	
Boron	mg/L	06/23/2010	N001	13.2	-	18.2	0.15		F	#	0.00074	
Bromide	mg/L	06/23/2010	N001	13.2	-	18.2	0.4	U	F	#	0.4	
Calcium	mg/L	06/23/2010	N001	13.2	-	18.2	240		F	#	0.0037	
Chloride	mg/L	06/23/2010	N001	13.2	-	18.2	200		F	#	4	
Dissolved Organic Carbon	mg/L	06/23/2010	N001	13.2	-	18.2	2.3		F	#	1	
Dissolved Oxygen	mg/L	06/23/2010	N001	13.2	-	18.2	1.61		F	#		
Field Ferrous Iron	mg/L	06/23/2010	N001	13.2	-	18.2	0.5		F	#		
Iron	mg/L	06/23/2010	N001	13.2	-	18.2	0.49		UF	#	0.0072	
Magnesium	mg/L	06/23/2010	N001	13.2	-	18.2	86		F	#	0.0032	
Manganese	mg/L	06/23/2010	N001	13.2	-	18.2	0.75		F	#	0.000054	
Molybdenum	mg/L	06/23/2010	N001	13.2	-	18.2	0.0093		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N001	13.2	-	18.2	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	06/23/2010	N001	13.2	-	18.2	108.6		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0304 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/23/2010	N001	13.2	-	18.2	7.2		F	#		
Potassium	mg/L	06/23/2010	N001	13.2	-	18.2	9.6		F	#	0.02	
Selenium	mg/L	06/23/2010	N001	13.2	-	18.2	0.0021		F	#	0.000032	
Silica	mg/L	06/23/2010	N001	13.2	-	18.2	21		F	#	0.0026	
Silicon	mg/L	06/23/2010	N001	13.2	-	18.2	9.7		F	#	0.0012	
Sodium	mg/L	06/23/2010	N001	13.2	-	18.2	130		F	#	0.023	
Specific Conductance	umhos /cm	06/23/2010	N001	13.2	-	18.2	2131		F	#		
Strontium	mg/L	06/23/2010	N001	13.2	-	18.2	3.2		F	#	0.00006	
Sulfate	mg/L	06/23/2010	N001	13.2	-	18.2	760		F	#	10	
Sulfide	mg/L	06/23/2010	N001	13.2	-	18.2	2	U	F	#	2	
Temperature	C	06/23/2010	N001	13.2	-	18.2	12.59		F	#		
Turbidity	NTU	06/23/2010	N001	13.2	-	18.2	1.92		F	#		
Uranium	mg/L	06/23/2010	N001	13.2	-	18.2	0.046		F	#	0.0000029	
Uranium-234	pCi/L	06/23/2010	N001	13.2	-	18.2	19.1		F	#	0.31	3.48
Uranium-235	pCi/L	06/23/2010	N001	13.2	-	18.2	1.07		F	#	0.22	0.483
Uranium-238	pCi/L	06/23/2010	N001	13.2	-	18.2	13.9		F	#	0.25	2.66
Vanadium	mg/L	06/23/2010	N001	13.2	-	18.2	0.025		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0305 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	13.76	-	18.76	338		F	#		
Aluminum	mg/L	06/23/2010	N001	13.76	-	18.76	0.016	U	F	#	0.016	
Ammonia Total as N	mg/L	06/23/2010	N001	13.76	-	18.76	3		FJ	#	0.1	
Arsenic	mg/L	06/23/2010	N001	13.76	-	18.76	0.0028		F	#	0.000015	
Barium	mg/L	06/23/2010	N001	13.76	-	18.76	0.06		F	#	0.00006	
Boron	mg/L	06/23/2010	N001	13.76	-	18.76	0.17		F	#	0.00074	
Bromide	mg/L	06/23/2010	N001	13.76	-	18.76	0.4	U	F	#	0.4	
Calcium	mg/L	06/23/2010	N001	13.76	-	18.76	250		F	#	0.0037	
Chloride	mg/L	06/23/2010	N001	13.76	-	18.76	280		F	#	4	
Dissolved Organic Carbon	mg/L	06/23/2010	N001	13.76	-	18.76	2.4		F	#	1	
Dissolved Oxygen	mg/L	06/23/2010	N001	13.76	-	18.76	0.03		F	#		
Field Ferrous Iron	mg/L	06/23/2010	N001	13.76	-	18.76	0.05		F	#		
Iron	mg/L	06/23/2010	N001	13.76	-	18.76	0.096	B	UF	#	0.0072	
Magnesium	mg/L	06/23/2010	N001	13.76	-	18.76	99		F	#	0.0032	
Manganese	mg/L	06/23/2010	N001	13.76	-	18.76	0.67		F	#	0.000054	
Molybdenum	mg/L	06/23/2010	N001	13.76	-	18.76	0.01		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N001	13.76	-	18.76	0.055		F	#	0.01	
Oxidation Reduction Potential	mV	06/23/2010	N001	13.76	-	18.76	92.6		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0305 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/23/2010	N001	13.76	-	18.76	7.32		F	#		
Potassium	mg/L	06/23/2010	N001	13.76	-	18.76	11		F	#	0.02	
Selenium	mg/L	06/23/2010	N001	13.76	-	18.76	0.025		F	#	0.000032	
Silica	mg/L	06/23/2010	N001	13.76	-	18.76	19		F	#	0.0026	
Silicon	mg/L	06/23/2010	N001	13.76	-	18.76	8.8		F	#	0.0012	
Sodium	mg/L	06/23/2010	N001	13.76	-	18.76	170		F	#	0.023	
Specific Conductance	umhos /cm	06/23/2010	N001	13.76	-	18.76	2577		F	#		
Strontium	mg/L	06/23/2010	N001	13.76	-	18.76	3.4		F	#	0.00006	
Sulfate	mg/L	06/23/2010	N001	13.76	-	18.76	680		F	#	10	
Sulfide	mg/L	06/23/2010	N001	13.76	-	18.76	2	U	F	#	2	
Temperature	C	06/23/2010	N001	13.76	-	18.76	12.01		F	#		
Turbidity	NTU	06/23/2010	N001	13.76	-	18.76	1.21		F	#		
Uranium	mg/L	06/23/2010	N001	13.76	-	18.76	0.08		F	#	0.0000029	
Uranium-234	pCi/L	06/23/2010	N001	13.76	-	18.76	33.3		F	#	0.18	5.7
Uranium-235	pCi/L	06/23/2010	N001	13.76	-	18.76	1.61		F	#	0.22	0.6
Uranium-238	pCi/L	06/23/2010	N001	13.76	-	18.76	28.8		F	#	0.18	4.99
Vanadium	mg/L	06/23/2010	N001	13.76	-	18.76	0.34		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0309 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	16.93	-	21.93	384		F	#		
Aluminum	mg/L	06/22/2010	N001	16.93	-	21.93	0.016	U	F	#	0.016	
Ammonia Total as N	mg/L	06/22/2010	N001	16.93	-	21.93	0.13		FJ	#	0.1	
Arsenic	mg/L	06/22/2010	N001	16.93	-	21.93	0.00073		F	#	0.000015	
Barium	mg/L	06/22/2010	N001	16.93	-	21.93	0.024		F	#	0.00006	
Boron	mg/L	06/22/2010	N001	16.93	-	21.93	0.34		F	#	0.00074	
Bromide	mg/L	06/22/2010	N001	16.93	-	21.93	0.4	U	F	#	0.4	
Calcium	mg/L	06/22/2010	N001	16.93	-	21.93	190		F	#	0.0037	
Chloride	mg/L	06/22/2010	N001	16.93	-	21.93	120		F	#	4	
Dissolved Organic Carbon	mg/L	06/22/2010	N001	16.93	-	21.93	2.1		F	#	1	
Dissolved Oxygen	mg/L	06/22/2010	N001	16.93	-	21.93	0.21		F	#		
Field Ferrous Iron	mg/L	06/22/2010	N001	16.93	-	21.93	0.74		F	#		
Iron	mg/L	06/22/2010	N001	16.93	-	21.93	0.55		F	#	0.0072	
Magnesium	mg/L	06/22/2010	N001	16.93	-	21.93	130		F	#	0.0032	
Manganese	mg/L	06/22/2010	N001	16.93	-	21.93	0.67		F	#	0.000054	
Molybdenum	mg/L	06/22/2010	N001	16.93	-	21.93	0.0075		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	16.93	-	21.93	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	06/22/2010	N001	16.93	-	21.93	-17.2		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0309 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/22/2010	N001	16.93	-	21.93	7.4		F	#		
Potassium	mg/L	06/22/2010	N001	16.93	-	21.93	9		F	#	0.02	
Selenium	mg/L	06/22/2010	N001	16.93	-	21.93	0.00021		F	#	0.000032	
Silica	mg/L	06/22/2010	N001	16.93	-	21.93	15		F	#	0.0026	
Silicon	mg/L	06/22/2010	N001	16.93	-	21.93	7.2		F	#	0.0012	
Sodium	mg/L	06/22/2010	N001	16.93	-	21.93	190		F	#	0.023	
Specific Conductance	umhos /cm	06/22/2010	N001	16.93	-	21.93	2405		F	#		
Strontium	mg/L	06/22/2010	N001	16.93	-	21.93	3.4		F	#	0.00006	
Sulfate	mg/L	06/22/2010	N001	16.93	-	21.93	820		F	#	10	
Sulfide	mg/L	06/22/2010	N001	16.93	-	21.93	2	U	FJ	#	2	
Temperature	C	06/22/2010	N001	16.93	-	21.93	19.11		F	#		
Turbidity	NTU	06/22/2010	N001	16.93	-	21.93	3.27		F	#		
Uranium	mg/L	06/22/2010	N001	16.93	-	21.93	0.02		F	#	0.0000029	
Uranium-234	pCi/L	06/22/2010	N001	16.93	-	21.93	12.3		F	#	0.19	2.4
Uranium-235	pCi/L	06/22/2010	N001	16.93	-	21.93	0.364		FJ	#	0.22	0.275
Uranium-238	pCi/L	06/22/2010	N001	16.93	-	21.93	7.28		F	#	0.11	1.58
Vanadium	mg/L	06/22/2010	N001	16.93	-	21.93	0.00059		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0310 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	17.93	-	22.93	467		F	#		
Aluminum	mg/L	06/22/2010	N001	17.93	-	22.93	0.042	B	UF	#	0.016	
Ammonia Total as N	mg/L	06/22/2010	N001	17.93	-	22.93	1.4		FJ	#	0.1	
Arsenic	mg/L	06/22/2010	N001	17.93	-	22.93	0.0046		F	#	0.00015	
Barium	mg/L	06/22/2010	N001	17.93	-	22.93	0.051		F	#	0.00006	
Boron	mg/L	06/22/2010	N001	17.93	-	22.93	0.33		F	#	0.00074	
Bromide	mg/L	06/22/2010	N001	17.93	-	22.93	1.5		F	#	0.4	
Calcium	mg/L	06/22/2010	N001	17.93	-	22.93	270		F	#	0.0037	
Chloride	mg/L	06/22/2010	N001	17.93	-	22.93	210		F	#	4	
Dissolved Organic Carbon	mg/L	06/22/2010	N001	17.93	-	22.93	3.9		F	#	1	
Dissolved Oxygen	mg/L	06/22/2010	N001	17.93	-	22.93	0.25		F	#		
Field Ferrous Iron	mg/L	06/22/2010	N001	17.93	-	22.93	1.05		F	#		
Iron	mg/L	06/22/2010	N001	17.93	-	22.93	0.97		F	#	0.0072	
Magnesium	mg/L	06/22/2010	N001	17.93	-	22.93	130		F	#	0.0032	
Manganese	mg/L	06/22/2010	N001	17.93	-	22.93	1.7		F	#	0.000054	
Molybdenum	mg/L	06/22/2010	N001	17.93	-	22.93	0.033		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	17.93	-	22.93	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	06/22/2010	N001	17.93	-	22.93	-14.5		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0310 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/22/2010	N001	17.93	-	22.93	7.26		F	#		
Potassium	mg/L	06/22/2010	N001	17.93	-	22.93	13		F	#	0.02	
Selenium	mg/L	06/22/2010	N001	17.93	-	22.93	0.00054		F	#	0.000032	
Silica	mg/L	06/22/2010	N001	17.93	-	22.93	22		F	#	0.0026	
Silicon	mg/L	06/22/2010	N001	17.93	-	22.93	10		F	#	0.0012	
Sodium	mg/L	06/22/2010	N001	17.93	-	22.93	220		F	#	0.23	
Specific Conductance	umhos /cm	06/22/2010	N001	17.93	-	22.93	2947		F	#		
Strontium	mg/L	06/22/2010	N001	17.93	-	22.93	3.6		F	#	0.00006	
Sulfate	mg/L	06/22/2010	N001	17.93	-	22.93	980		F	#	10	
Sulfide	mg/L	06/22/2010	N001	17.93	-	22.93	2	U	FJ	#	2	
Temperature	C	06/22/2010	N001	17.93	-	22.93	14.79		F	#		
Turbidity	NTU	06/22/2010	N001	17.93	-	22.93	3.24		F	#		
Uranium	mg/L	06/22/2010	N001	17.93	-	22.93	0.18		F	#	0.000029	
Uranium-234	pCi/L	06/22/2010	N001	17.93	-	22.93	73.2		F	#	0.29	12.1
Uranium-235	pCi/L	06/22/2010	N001	17.93	-	22.93	4.47		F	#	0.24	1.18
Uranium-238	pCi/L	06/22/2010	N001	17.93	-	22.93	67.4		F	#	0.24	11.2
Vanadium	mg/L	06/22/2010	N001	17.93	-	22.93	0.012		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0655 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	13.6	-	23.6	421		F	#		
Aluminum	mg/L	06/23/2010	N001	13.6	-	23.6	0.016	U	F	#	0.016	
Ammonia Total as N	mg/L	06/23/2010	N001	13.6	-	23.6	0.1	U	FJ	#	0.1	
Arsenic	mg/L	06/23/2010	N001	13.6	-	23.6	0.0091		F	#	0.00015	
Barium	mg/L	06/23/2010	N001	13.6	-	23.6	0.043		F	#	0.00006	
Boron	mg/L	06/23/2010	N001	13.6	-	23.6	0.42		F	#	0.00074	
Bromide	mg/L	06/23/2010	N001	13.6	-	23.6	0.66		F	#	0.4	
Calcium	mg/L	06/23/2010	N001	13.6	-	23.6	230		F	#	0.0037	
Chloride	mg/L	06/23/2010	N001	13.6	-	23.6	190		F	#	4	
Dissolved Organic Carbon	mg/L	06/23/2010	N001	13.6	-	23.6	3.2		F	#	1	
Dissolved Oxygen	mg/L	06/23/2010	N001	13.6	-	23.6	0.01		F	#		
Field Ferrous Iron	mg/L	06/23/2010	N001	13.6	-	23.6	0.02		F	#		
Iron	mg/L	06/23/2010	N001	13.6	-	23.6	0.013	B	UF	#	0.0072	
Magnesium	mg/L	06/23/2010	N001	13.6	-	23.6	120		F	#	0.0032	
Manganese	mg/L	06/23/2010	N001	13.6	-	23.6	1		F	#	0.000054	
Molybdenum	mg/L	06/23/2010	N001	13.6	-	23.6	0.01		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N001	13.6	-	23.6	0.96		F	#	0.01	
Oxidation Reduction Potential	mV	06/23/2010	N001	13.6	-	23.6	73		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0655 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/23/2010	N001	13.6	-	23.6	7.13		F	#		
Potassium	mg/L	06/23/2010	N001	13.6	-	23.6	12		F	#	0.02	
Selenium	mg/L	06/23/2010	N001	13.6	-	23.6	0.064		F	#	0.00032	
Silica	mg/L	06/23/2010	N001	13.6	-	23.6	20		F	#	0.0026	
Silicon	mg/L	06/23/2010	N001	13.6	-	23.6	9.6		F	#	0.0012	
Sodium	mg/L	06/23/2010	N001	13.6	-	23.6	240		F	#	0.023	
Specific Conductance	umhos /cm	06/23/2010	N001	13.6	-	23.6	2741		F	#		
Strontium	mg/L	06/23/2010	N001	13.6	-	23.6	3.8		F	#	0.00006	
Sulfate	mg/L	06/23/2010	N001	13.6	-	23.6	880		F	#	10	
Sulfide	mg/L	06/23/2010	N001	13.6	-	23.6	2	U	F	#	2	
Temperature	C	06/23/2010	N001	13.6	-	23.6	12.94		F	#		
Turbidity	NTU	06/23/2010	N001	13.6	-	23.6	0.79		F	#		
Uranium	mg/L	06/23/2010	N001	13.6	-	23.6	0.13		F	#	0.000029	
Uranium-234	pCi/L	06/23/2010	N001	13.6	-	23.6	52.6		F	#	0.41	8.87
Uranium-235	pCi/L	06/23/2010	N001	13.6	-	23.6	2.61		F	#	0.38	0.856
Uranium-238	pCi/L	06/23/2010	N001	13.6	-	23.6	47.2		F	#	0.38	8.01
Vanadium	mg/L	06/23/2010	N001	13.6	-	23.6	0.4		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0656 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	6.35	-	21.35	360		F	#		
Aluminum	mg/L	06/22/2010	N001	6.35	-	21.35	0.016	U	F	#	0.016	
Ammonia Total as N	mg/L	06/22/2010	N001	6.35	-	21.35	0.1	U	FJ	#	0.1	
Arsenic	mg/L	06/22/2010	N001	6.35	-	21.35	0.00061		F	#	0.000015	
Barium	mg/L	06/22/2010	N001	6.35	-	21.35	0.045		F	#	0.00006	
Boron	mg/L	06/22/2010	N001	6.35	-	21.35	0.2		F	#	0.00074	
Bromide	mg/L	06/22/2010	N001	6.35	-	21.35	0.2	U	F	#	0.2	
Calcium	mg/L	06/22/2010	N001	6.35	-	21.35	140		F	#	0.0037	
Chloride	mg/L	06/22/2010	N001	6.35	-	21.35	200		F	#	4	
Dissolved Organic Carbon	mg/L	06/22/2010	N001	6.35	-	21.35	1.7		F	#	1	
Dissolved Oxygen	mg/L	06/22/2010	N001	6.35	-	21.35	0.29		F	#		
Field Ferrous Iron	mg/L	06/22/2010	N001	6.35	-	21.35	0.22		F	#		
Iron	mg/L	06/22/2010	N001	6.35	-	21.35	0.0072	U	F	#	0.0072	
Magnesium	mg/L	06/22/2010	N001	6.35	-	21.35	64		F	#	0.0032	
Manganese	mg/L	06/22/2010	N001	6.35	-	21.35	0.22		F	#	0.000054	
Molybdenum	mg/L	06/22/2010	N001	6.35	-	21.35	0.016		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	6.35	-	21.35	0.075		F	#	0.01	
Oxidation Reduction Potential	mV	06/22/2010	N001	6.35	-	21.35	176.7		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0656 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/22/2010	N001	6.35	-	21.35	7.1		F	#		
Potassium	mg/L	06/22/2010	N001	6.35	-	21.35	11		F	#	0.02	
Selenium	mg/L	06/22/2010	N001	6.35	-	21.35	0.0036		F	#	0.000032	
Silica	mg/L	06/22/2010	N001	6.35	-	21.35	18		F	#	0.0026	
Silicon	mg/L	06/22/2010	N001	6.35	-	21.35	8.5		F	#	0.0012	
Sodium	mg/L	06/22/2010	N001	6.35	-	21.35	190		F	#	0.023	
Specific Conductance	umhos /cm	06/22/2010	N001	6.35	-	21.35	2029		F	#		
Strontium	mg/L	06/22/2010	N001	6.35	-	21.35	2.6		F	#	0.00006	
Sulfate	mg/L	06/22/2010	N001	6.35	-	21.35	420		F	#	10	
Sulfide	mg/L	06/22/2010	N001	6.35	-	21.35	2	U	FJ	#	2	
Temperature	C	06/22/2010	N001	6.35	-	21.35	14.85		F	#		
Turbidity	NTU	06/22/2010	N001	6.35	-	21.35	1		F	#		
Uranium	mg/L	06/22/2010	N001	6.35	-	21.35	0.17		F	#	0.0000029	
Uranium-234	pCi/L	06/22/2010	N001	6.35	-	21.35	59.9		F	#	0.54	9.93
Uranium-235	pCi/L	06/22/2010	N001	6.35	-	21.35	2.56		F	#	0.32	0.81
Uranium-238	pCi/L	06/22/2010	N001	6.35	-	21.35	55.3		F	#	0.42	9.19
Vanadium	mg/L	06/22/2010	N001	6.35	-	21.35	0.032		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0658 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/21/2010	N001	2.3	-	17.3	420		F	#		
Aluminum	mg/L	06/21/2010	N001	2.3	-	17.3	0.028	B	UF	#	0.016	
Ammonia Total as N	mg/L	06/21/2010	N001	2.3	-	17.3	0.1	U	FJ	#	0.1	
Arsenic	mg/L	06/21/2010	N001	2.3	-	17.3	0.00096		F	#	0.000015	
Barium	mg/L	06/21/2010	N001	2.3	-	17.3	0.021		F	#	0.00006	
Boron	mg/L	06/21/2010	N001	2.3	-	17.3	0.21		F	#	0.00074	
Bromide	mg/L	06/21/2010	N001	2.3	-	17.3	0.2	U	F	#	0.2	
Calcium	mg/L	06/21/2010	N001	2.3	-	17.3	170		F	#	0.0037	
Chloride	mg/L	06/21/2010	N001	2.3	-	17.3	36		F	#	4	
Dissolved Organic Carbon	mg/L	06/21/2010	N001	2.3	-	17.3	3.6		F	#	1	
Dissolved Oxygen	mg/L	06/21/2010	N001	2.3	-	17.3	0.15		F	#		
Field Ferrous Iron	mg/L	06/21/2010	N001	2.3	-	17.3	0.05		F	#		
Iron	mg/L	06/21/2010	N001	2.3	-	17.3	0.02	B	UF	#	0.0072	
Magnesium	mg/L	06/21/2010	N001	2.3	-	17.3	96		F	#	0.0032	
Manganese	mg/L	06/21/2010	N001	2.3	-	17.3	0.58		F	#	0.000054	
Molybdenum	mg/L	06/21/2010	N001	2.3	-	17.3	0.0089		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/21/2010	N001	2.3	-	17.3	0.13		F	#	0.01	
Oxidation Reduction Potential	mV	06/21/2010	N001	2.3	-	17.3	122.4		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0658 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/21/2010	N001	2.3	-	17.3	7.05		F	#		
Potassium	mg/L	06/21/2010	N001	2.3	-	17.3	4.1		F	#	0.02	
Selenium	mg/L	06/21/2010	N001	2.3	-	17.3	0.0062		F	#	0.000032	
Silica	mg/L	06/21/2010	N001	2.3	-	17.3	25		F	#	0.0026	
Silicon	mg/L	06/21/2010	N001	2.3	-	17.3	12		F	#	0.0012	
Sodium	mg/L	06/21/2010	N001	2.3	-	17.3	94		F	#	0.023	
Specific Conductance	umhos /cm	06/21/2010	N001	2.3	-	17.3	1668		F	#		
Strontium	mg/L	06/21/2010	N001	2.3	-	17.3	2.3		F	#	0.00006	
Sulfate	mg/L	06/21/2010	N001	2.3	-	17.3	480		F	#	10	
Sulfide	mg/L	06/21/2010	N001	2.3	-	17.3	2	U	FJ	#	2	
Temperature	C	06/21/2010	N001	2.3	-	17.3	11.43		F	#		
Turbidity	NTU	06/21/2010	N001	2.3	-	17.3	1.79		F	#		
Uranium	mg/L	06/21/2010	N001	2.3	-	17.3	0.018		F	#	0.0000029	
Uranium-234	pCi/L	06/21/2010	N001	2.3	-	17.3	9.57		F	#	0.48	2.2
Uranium-235	pCi/L	06/21/2010	N001	2.3	-	17.3	1.21		FJ	#	0.54	0.662
Uranium-238	pCi/L	06/21/2010	N001	2.3	-	17.3	6.68		F	#	0.51	1.7
Vanadium	mg/L	06/21/2010	N001	2.3	-	17.3	0.0013		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: B-04 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	5	-	20	484		F	#		
Aluminum	mg/L	06/23/2010	N001	5	-	20	0.13	B	UF	#	0.016	
Aluminum	mg/L	06/23/2010	N002	5	-	20	0.09	B	UF	#	0.016	
Ammonia Total as N	mg/L	06/23/2010	N001	5	-	20	0.1	U	FJ	#	0.1	
Ammonia Total as N	mg/L	06/23/2010	N002	5	-	20	0.1	U	FJ	#	0.1	
Arsenic	mg/L	06/23/2010	N001	5	-	20	0.044		F	#	0.00015	
Arsenic	mg/L	06/23/2010	N002	5	-	20	0.052		F	#	0.00015	
Barium	mg/L	06/23/2010	N001	5	-	20	0.046		F	#	0.00006	
Barium	mg/L	06/23/2010	N002	5	-	20	0.044		F	#	0.00006	
Boron	mg/L	06/23/2010	N001	5	-	20	0.42		F	#	0.00074	
Boron	mg/L	06/23/2010	N002	5	-	20	0.41		F	#	0.00074	
Bromide	mg/L	06/23/2010	N001	5	-	20	0.55		F	#	0.4	
Bromide	mg/L	06/23/2010	N002	5	-	20	0.55		F	#	0.4	
Calcium	mg/L	06/23/2010	N001	5	-	20	250		F	#	0.0037	
Calcium	mg/L	06/23/2010	N002	5	-	20	250		F	#	0.0037	
Chloride	mg/L	06/23/2010	N001	5	-	20	170		F	#	4	
Chloride	mg/L	06/23/2010	N002	5	-	20	170		F	#	4	
Dissolved Organic Carbon	mg/L	06/23/2010	N001	5	-	20	3.7		F	#	1	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: B-04 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Dissolved Organic Carbon	mg/L	06/23/2010	N002	5	-	20	3.9		F	#	1	
Dissolved Oxygen	mg/L	06/23/2010	N001	5	-	20	0.08		F	#		
Field Ferrous Iron	mg/L	06/23/2010	N001	5	-	20	0.06		F	#		
Iron	mg/L	06/23/2010	N001	5	-	20	0.22		UF	#	0.0072	
Iron	mg/L	06/23/2010	N002	5	-	20	0.18		UF	#	0.0072	
Magnesium	mg/L	06/23/2010	N001	5	-	20	140		F	#	0.0032	
Magnesium	mg/L	06/23/2010	N002	5	-	20	130		F	#	0.0032	
Manganese	mg/L	06/23/2010	N001	5	-	20	0.052		FJ	#	0.000054	
Manganese	mg/L	06/23/2010	N002	5	-	20	0.042		FJ	#	0.000054	
Molybdenum	mg/L	06/23/2010	N001	5	-	20	0.024		F	#	0.00032	
Molybdenum	mg/L	06/23/2010	N002	5	-	20	0.028		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N001	5	-	20	0.3		F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N002	5	-	20	0.51		F	#	0.01	
Oxidation Reduction Potential	mV	06/23/2010	N001	5	-	20	67.7		F	#		
pH	s.u.	06/23/2010	N001	5	-	20	7.16		F	#		
Potassium	mg/L	06/23/2010	N001	5	-	20	12		F	#	0.02	
Potassium	mg/L	06/23/2010	N002	5	-	20	12		F	#	0.02	
Selenium	mg/L	06/23/2010	N001	5	-	20	0.05		FJ	#	0.00032	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: B-04 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Selenium	mg/L	06/23/2010	N002	5	-	20	0.069		FJ	#	0.00032	
Silica	mg/L	06/23/2010	N001	5	-	20	25		F	#	0.0026	
Silica	mg/L	06/23/2010	N002	5	-	20	25		F	#	0.0026	
Silicon	mg/L	06/23/2010	N001	5	-	20	12		F	#	0.0012	
Silicon	mg/L	06/23/2010	N002	5	-	20	12		F	#	0.0012	
Sodium	mg/L	06/23/2010	N001	5	-	20	210		F	#	0.023	
Sodium	mg/L	06/23/2010	N002	5	-	20	210		F	#	0.023	
Specific Conductance	umhos /cm	06/23/2010	N001	5	-	20	2731		F	#		
Strontium	mg/L	06/23/2010	N001	5	-	20	3.7		F	#	0.00006	
Strontium	mg/L	06/23/2010	N002	5	-	20	3.6		F	#	0.00006	
Sulfate	mg/L	06/23/2010	N001	5	-	20	880		F	#	10	
Sulfate	mg/L	06/23/2010	N002	5	-	20	910		F	#	10	
Sulfide	mg/L	06/23/2010	N001	5	-	20	2	U	F	#	2	
Sulfide	mg/L	06/23/2010	N002	5	-	20	2	U	F	#	2	
Temperature	C	06/23/2010	N001	5	-	20	14.02		F	#		
Turbidity	NTU	06/23/2010	N001	5	-	20	9.81		F	#		
Uranium	mg/L	06/23/2010	N001	5	-	20	0.21		F	#	0.000029	
Uranium	mg/L	06/23/2010	N002	5	-	20	0.23		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: B-04 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Uranium-234	pCi/L	06/23/2010	N001	5	-	20	81.4		F	#	0.43	13.4
Uranium-234	pCi/L	06/23/2010	N002	5	-	20	80.8		F	#	0.22	13.4
Uranium-235	pCi/L	06/23/2010	N001	5	-	20	4.58		F	#	0.24	1.21
Uranium-235	pCi/L	06/23/2010	N002	5	-	20	4.47		F	#	0.3	1.21
Uranium-238	pCi/L	06/23/2010	N001	5	-	20	75.3		F	#	0.3	12.4
Uranium-238	pCi/L	06/23/2010	N002	5	-	20	74.8		F	#	0.26	12.4
Vanadium	mg/L	06/23/2010	N001	5	-	20	2.1		F	#	0.00015	
Vanadium	mg/L	06/23/2010	N002	5	-	20	2.4		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: LQ-107 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	9.67	-	19.67	365		F	#		
Aluminum	mg/L	06/22/2010	N001	9.67	-	19.67	0.075	B	UF	#	0.016	
Ammonia Total as N	mg/L	06/22/2010	N001	9.67	-	19.67	4.7		FJ	#	0.1	
Arsenic	mg/L	06/22/2010	N001	9.67	-	19.67	0.014		F	#	0.000015	
Barium	mg/L	06/22/2010	N001	9.67	-	19.67	0.085		F	#	0.00006	
Boron	mg/L	06/22/2010	N001	9.67	-	19.67	0.18		F	#	0.00074	
Bromide	mg/L	06/22/2010	N001	9.67	-	19.67	0.4	U	F	#	0.4	
Calcium	mg/L	06/22/2010	N001	9.67	-	19.67	200		F	#	0.0037	
Chloride	mg/L	06/22/2010	N001	9.67	-	19.67	210		F	#	4	
Dissolved Organic Carbon	mg/L	06/22/2010	N001	9.67	-	19.67	5.3		F	#	1	
Dissolved Oxygen	mg/L	06/22/2010	N001	9.67	-	19.67	0.37		F	#		
Field Ferrous Iron	mg/L	06/22/2010	N001	9.67	-	19.67	0.86		F	#		
Iron	mg/L	06/22/2010	N001	9.67	-	19.67	0.92		F	#	0.0072	
Magnesium	mg/L	06/22/2010	N001	9.67	-	19.67	88		F	#	0.0032	
Manganese	mg/L	06/22/2010	N001	9.67	-	19.67	1.3		F	#	0.000054	
Molybdenum	mg/L	06/22/2010	N001	9.67	-	19.67	0.0094		F	#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	9.67	-	19.67	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	06/22/2010	N001	9.67	-	19.67	-187.2		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: LQ-107 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/22/2010	N001	9.67	-	19.67	7.25		F	#		
Potassium	mg/L	06/22/2010	N001	9.67	-	19.67	16		F	#	0.02	
Selenium	mg/L	06/22/2010	N001	9.67	-	19.67	0.0025		F	#	0.000032	
Silica	mg/L	06/22/2010	N001	9.67	-	19.67	23		F	#	0.0026	
Silicon	mg/L	06/22/2010	N001	9.67	-	19.67	11		F	#	0.0012	
Sodium	mg/L	06/22/2010	N001	9.67	-	19.67	130		F	#	0.023	
Specific Conductance	umhos /cm	06/22/2010	N001	9.67	-	19.67	2159		F	#		
Strontium	mg/L	06/22/2010	N001	9.67	-	19.67	2.6		F	#	0.00006	
Sulfate	mg/L	06/22/2010	N001	9.67	-	19.67	580		F	#	10	
Sulfide	mg/L	06/22/2010	N001	9.67	-	19.67	2	U	FJ	#	2	
Temperature	C	06/22/2010	N001	9.67	-	19.67	17.82		F	#		
Turbidity	NTU	06/22/2010	N001	9.67	-	19.67	8.18		F	#		
Uranium	mg/L	06/22/2010	N001	9.67	-	19.67	0.15		F	#	0.0000029	
Uranium-234	pCi/L	06/22/2010	N001	9.67	-	19.67	53.5		F	#	0.46	9.55
Uranium-235	pCi/L	06/22/2010	N001	9.67	-	19.67	2.7		F	#	0.38	1.03
Uranium-238	pCi/L	06/22/2010	N001	9.67	-	19.67	49.9		F	#	0.38	8.96
Vanadium	mg/L	06/22/2010	N001	9.67	-	19.67	0.26		F	#	0.000015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: LQ-108 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	-	374		F	#		
Aluminum	mg/L	06/22/2010	N001	-	0.24		F	#	0.016	
Ammonia Total as N	mg/L	06/22/2010	N001	-	0.1	U	FJ	#	0.1	
Arsenic	mg/L	06/22/2010	N001	-	0.015		F	#	0.00015	
Barium	mg/L	06/22/2010	N001	-	0.044		F	#	0.00006	
Boron	mg/L	06/22/2010	N001	-	0.26		F	#	0.00074	
Bromide	mg/L	06/22/2010	N001	-	0.4	U	F	#	0.4	
Calcium	mg/L	06/22/2010	N001	-	220		F	#	0.0037	
Chloride	mg/L	06/22/2010	N001	-	190		F	#	4	
Dissolved Organic Carbon	mg/L	06/22/2010	N001	-	3.8		F	#	1	
Dissolved Oxygen	mg/L	06/22/2010	N001	-	0.27		F	#		
Field Ferrous Iron	mg/L	06/22/2010	N001	-	0.16		F	#		
Iron	mg/L	06/22/2010	N001	-	0.33		F	#	0.0072	
Magnesium	mg/L	06/22/2010	N001	-	110		F	#	0.0032	
Manganese	mg/L	06/22/2010	N001	-	0.047		F	#	0.000054	
Molybdenum	mg/L	06/22/2010	N001	-	0.016		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	-	6.9		F	#	0.05	
Oxidation Reduction Potential	mV	06/22/2010	N001	-	25		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: LQ-108 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/22/2010	N001	-	6.96		F	#		
Potassium	mg/L	06/22/2010	N001	-	10		F	#	0.02	
Selenium	mg/L	06/22/2010	N001	-	0.39		F	#	0.00032	
Silica	mg/L	06/22/2010	N001	-	21		F	#	0.0026	
Silicon	mg/L	06/22/2010	N001	-	10		F	#	0.0012	
Sodium	mg/L	06/22/2010	N001	-	190		F	#	0.023	
Specific Conductance	umhos /cm	06/22/2010	N001	-	2465		F	#		
Strontium	mg/L	06/22/2010	N001	-	2.5		F	#	0.00006	
Sulfate	mg/L	06/22/2010	N001	-	720		F	#	10	
Sulfide	mg/L	06/22/2010	N001	-	2	U	FJ	#	2	
Temperature	C	06/22/2010	N001	-	15.2		F	#		
Turbidity	NTU	06/22/2010	N001	-	8.8		F	#		
Uranium	mg/L	06/22/2010	N001	-	0.13		F	#	0.000029	
Uranium-234	pCi/L	06/22/2010	N001	-	49.4		F	#	0.28	8.28
Uranium-235	pCi/L	06/22/2010	N001	-	3.14		F	#	0.13	0.917
Uranium-238	pCi/L	06/22/2010	N001	-	47.3		F	#	0.23	7.95
Vanadium	mg/L	06/22/2010	N001	-	0.67		F	#	0.00015	

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	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
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion 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 3 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.

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Old Rifle
Surface Water Quality Data

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Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0294 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/21/2010	0001	115			#		
Aluminum	mg/L	06/21/2010	0001	0.039	B	U	#	0.016	
Ammonia Total as N	mg/L	06/21/2010	0001	0.1	U	J	#	0.1	
Arsenic	mg/L	06/21/2010	0001	0.00038			#	0.000015	
Barium	mg/L	06/21/2010	0001	0.044			#	0.00006	
Boron	mg/L	06/21/2010	0001	0.0088	B		#	0.00074	
Bromide	mg/L	06/21/2010	0001	0.2	U		#	0.2	
Calcium	mg/L	06/21/2010	0001	34			#	0.0037	
Chloride	mg/L	06/21/2010	0001	37			#	0.4	
Dissolved Organic Carbon	mg/L	06/21/2010	0001	2.4			#	1	
Iron	mg/L	06/21/2010	0001	0.098	B	U	#	0.0072	
Magnesium	mg/L	06/21/2010	0001	6.1			#	0.0032	
Manganese	mg/L	06/21/2010	0001	0.0089			#	0.000054	
Molybdenum	mg/L	06/21/2010	0001	0.0029			#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/21/2010	0001	0.12			#	0.01	
Potassium	mg/L	06/21/2010	0001	1			#	0.02	
Selenium	mg/L	06/21/2010	0001	0.00024			#	0.000032	
Silica	mg/L	06/21/2010	0001	7.2			#	0.0026	

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0294 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Silicon	mg/L	06/21/2010	0001	3.4			#	0.0012	
Sodium	mg/L	06/21/2010	0001	22			#	0.023	
Strontium	mg/L	06/21/2010	0001	0.23			#	0.00006	
Sulfate	mg/L	06/21/2010	0001	41			#	1	
Sulfide	mg/L	06/21/2010	0001	2	U	J	#	2	
Uranium	mg/L	06/21/2010	0001	0.0011			#	0.0000029	
Uranium-234	pCi/L	06/21/2010	0001	0.718		J	#	0.36	0.418
Uranium-235	pCi/L	06/21/2010	0001	0.16	U		#	0.16	0.211
Uranium-238	pCi/L	06/21/2010	0001	0.28	U		#	0.28	0.228
Vanadium	mg/L	06/21/2010	0001	0.00057		J	#	0.000015	
Dissolved Oxygen	mg/L	06/21/2010	N001	9.85			#		
Field Ferrous Iron	mg/L	06/21/2010	N001	0.03			#		
Oxidation Reduction Potential	mV	06/21/2010	N001	116.1			#		
pH	s.u.	06/21/2010	N001	8.11			#		
Specific Conductance	umhos/cm	06/21/2010	N001	349			#		
Temperature	C	06/21/2010	N001	14.67			#		
Turbidity	NTU	06/21/2010	N001	18.9			#		

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0395 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	355			#		
Aluminum	mg/L	06/23/2010	N001	0.034	B	U	#	0.016	
Ammonia Total as N	mg/L	06/23/2010	N001	0.1	U	J	#	0.1	
Arsenic	mg/L	06/23/2010	N001	0.00043			#	0.000015	
Barium	mg/L	06/23/2010	N001	0.02	B		#	0.00006	
Boron	mg/L	06/23/2010	N001	0.23			#	0.00074	
Bromide	mg/L	06/23/2010	N001	0.2	U		#	0.2	
Calcium	mg/L	06/23/2010	N001	98			#	0.0037	
Chloride	mg/L	06/23/2010	N001	29			#	2	
Dissolved Organic Carbon	mg/L	06/23/2010	N001	2.1			#	1	
Dissolved Oxygen	mg/L	06/23/2010	N001	0.91			#		
Field Ferrous Iron	mg/L	06/23/2010	N001	0			#		
Iron	mg/L	06/23/2010	N001	0.0072	U		#	0.0072	
Magnesium	mg/L	06/23/2010	N001	69			#	0.0032	
Manganese	mg/L	06/23/2010	N001	0.0058			#	0.000054	
Molybdenum	mg/L	06/23/2010	N001	0.01			#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N001	0.039			#	0.01	
Oxidation Reduction Potential	mV	06/23/2010	N001	45.8			#		

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0395 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/23/2010	N001	8.26			#		
Potassium	mg/L	06/23/2010	N001	3.3			#	0.02	
Selenium	mg/L	06/23/2010	N001	0.0032			#	0.000032	
Silica	mg/L	06/23/2010	N001	22			#	0.0026	
Silicon	mg/L	06/23/2010	N001	10			#	0.0012	
Sodium	mg/L	06/23/2010	N001	70			#	0.023	
Specific Conductance	umhos/cm	06/23/2010	N001	26			#		
Strontium	mg/L	06/23/2010	N001	1.8			#	0.00006	
Sulfate	mg/L	06/23/2010	N001	320			#	5	
Sulfide	mg/L	06/23/2010	N001	2	U		#	2	
Temperature	C	06/23/2010	N001	27.4			#		
Turbidity	NTU	06/23/2010	N001	4.91			#		
Uranium	mg/L	06/23/2010	N001	0.028			#	0.0000029	
Uranium-234	pCi/L	06/23/2010	N001	14.7			#	0.25	2.85
Uranium-235	pCi/L	06/23/2010	N001	0.301		J	#	0.25	0.265
Uranium-238	pCi/L	06/23/2010	N001	8.88			#	0.31	1.89
Vanadium	mg/L	06/23/2010	N001	0.0016			#	0.000015	

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0396 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	0001	92			#		
Aluminum	mg/L	06/22/2010	0001	0.034	B	U	#	0.016	
Ammonia Total as N	mg/L	06/22/2010	0001	0.1	U	J	#	0.1	
Arsenic	mg/L	06/22/2010	0001	0.00032			#	0.000015	
Barium	mg/L	06/22/2010	0001	0.043			#	0.00006	
Boron	mg/L	06/22/2010	0001	0.0082	B		#	0.00074	
Bromide	mg/L	06/22/2010	0001	0.2	U		#	0.2	
Calcium	mg/L	06/22/2010	0001	34			#	0.0037	
Chloride	mg/L	06/22/2010	0001	38			#	0.4	
Dissolved Organic Carbon	mg/L	06/22/2010	0001	2.3			#	1	
Iron	mg/L	06/22/2010	0001	0.046	B	U	#	0.0072	
Magnesium	mg/L	06/22/2010	0001	6.2			#	0.0032	
Manganese	mg/L	06/22/2010	0001	0.0071	E		#	0.000054	
Molybdenum	mg/L	06/22/2010	0001	0.003			#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	0001	0.11			#	0.01	
Potassium	mg/L	06/22/2010	0001	1			#	0.02	
Selenium	mg/L	06/22/2010	0001	0.00028			#	0.000032	
Silica	mg/L	06/22/2010	0001	7.1			#	0.0026	

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0396 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Silicon	mg/L	06/22/2010	0001	3.3			#	0.0012	
Sodium	mg/L	06/22/2010	0001	22	E	J	#	0.023	
Strontium	mg/L	06/22/2010	0001	0.24			#	0.00006	
Sulfate	mg/L	06/22/2010	0001	41			#	1	
Sulfide	mg/L	06/22/2010	0001	2	U	J	#	2	
Uranium	mg/L	06/22/2010	0001	0.001			#	0.0000029	
Uranium-234	pCi/L	06/22/2010	0001	0.416		J	#	0.34	0.306
Uranium-235	pCi/L	06/22/2010	0001	0.28	U		#	0.28	0.179
Uranium-238	pCi/L	06/22/2010	0001	0.466		J	#	0.26	0.303
Vanadium	mg/L	06/22/2010	0001	0.00064		J	#	0.000015	
Dissolved Oxygen	mg/L	06/22/2010	N001	2.3			#		
Field Ferrous Iron	mg/L	06/22/2010	N001	0.23			#		
Oxidation Reduction Potential	mV	06/22/2010	N001	-92.3			#		
pH	s.u.	06/22/2010	N001	8.16			#		
Specific Conductance	umhos/cm	06/22/2010	N001	362			#		
Temperature	C	06/22/2010	N001	16.99			#		
Turbidity	NTU	06/22/2010	N001	17			#		

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0398 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	235			#		
Aluminum	mg/L	06/22/2010	N001	0.073	B	U	#	0.016	
Ammonia Total as N	mg/L	06/22/2010	N001	0.1	U	J	#	0.1	
Arsenic	mg/L	06/22/2010	N001	0.00061			#	0.000015	
Barium	mg/L	06/22/2010	N001	0.042			#	0.00006	
Boron	mg/L	06/22/2010	N001	0.1			#	0.00074	
Bromide	mg/L	06/22/2010	N001	0.2	U		#	0.2	
Calcium	mg/L	06/22/2010	N001	130			#	0.0037	
Chloride	mg/L	06/22/2010	N001	150			#	2	
Dissolved Organic Carbon	mg/L	06/22/2010	N001	1.8			#	1	
Dissolved Oxygen	mg/L	06/22/2010	N001	0.78			#		
Field Ferrous Iron	mg/L	06/22/2010	N001	0.17			#		
Iron	mg/L	06/22/2010	N001	0.073	B	U	#	0.0072	
Magnesium	mg/L	06/22/2010	N001	50			#	0.0032	
Manganese	mg/L	06/22/2010	N001	0.0062			#	0.000054	
Molybdenum	mg/L	06/22/2010	N001	0.006			#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	0.31			#	0.01	
Oxidation Reduction Potential	mV	06/22/2010	N001	138			#		

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0398 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
pH	s.u.	06/22/2010	N001	8.19			#		
Potassium	mg/L	06/22/2010	N001	3.4			#	0.02	
Selenium	mg/L	06/22/2010	N001	0.0024			#	0.000032	
Silica	mg/L	06/22/2010	N001	19			#	0.0026	
Silicon	mg/L	06/22/2010	N001	9			#	0.0012	
Sodium	mg/L	06/22/2010	N001	91			#	0.023	
Specific Conductance	umhos/cm	06/22/2010	N001	1435			#		
Strontium	mg/L	06/22/2010	N001	2			#	0.00006	
Sulfate	mg/L	06/22/2010	N001	300			#	5	
Sulfide	mg/L	06/22/2010	N001	2	U	J	#	2	
Temperature	C	06/22/2010	N001	15.91			#		
Turbidity	NTU	06/22/2010	N001	4.37			#		
Uranium	mg/L	06/22/2010	N001	0.014			#	0.0000029	
Uranium-234	pCi/L	06/22/2010	N001	6.83			#	0.56	1.56
Uranium-235	pCi/L	06/22/2010	N001	0.449		J	#	0.25	0.319
Uranium-238	pCi/L	06/22/2010	N001	4.7			#	0.28	1.18
Vanadium	mg/L	06/22/2010	N001	0.0037			#	0.000015	

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0741 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	0001	94			#		
Aluminum	mg/L	06/22/2010	0001	0.033	B	U	#	0.016	
Ammonia Total as N	mg/L	06/22/2010	0001	0.1	U	J	#	0.1	
Arsenic	mg/L	06/22/2010	0001	0.00036			#	0.000015	
Barium	mg/L	06/22/2010	0001	0.045			#	0.00006	
Boron	mg/L	06/22/2010	0001	0.0081	B		#	0.00074	
Bromide	mg/L	06/22/2010	0001	0.2	U		#	0.2	
Calcium	mg/L	06/22/2010	0001	34			#	0.0037	
Chloride	mg/L	06/22/2010	0001	38			#	0.4	
Dissolved Organic Carbon	mg/L	06/22/2010	0001	2.3			#	1	
Iron	mg/L	06/22/2010	0001	0.029	B	U	#	0.0072	
Magnesium	mg/L	06/22/2010	0001	6.1			#	0.0032	
Manganese	mg/L	06/22/2010	0001	0.0068			#	0.000054	
Molybdenum	mg/L	06/22/2010	0001	0.0029			#	0.000032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	0001	0.11			#	0.01	
Potassium	mg/L	06/22/2010	0001	0.99	B		#	0.02	
Selenium	mg/L	06/22/2010	0001	0.00028			#	0.000032	
Silica	mg/L	06/22/2010	0001	7.1			#	0.0026	

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010
Location: 0741 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Silicon	mg/L	06/22/2010	0001	3.3			#	0.0012	
Sodium	mg/L	06/22/2010	0001	23			#	0.023	
Strontium	mg/L	06/22/2010	0001	0.23			#	0.00006	
Sulfate	mg/L	06/22/2010	0001	41			#	0.5	
Sulfide	mg/L	06/22/2010	0001	2	U	J	#	2	
Uranium	mg/L	06/22/2010	0001	0.00098			#	0.0000029	
Uranium-234	pCi/L	06/22/2010	0001	1.08			#	0.3	0.468
Uranium-235	pCi/L	06/22/2010	0001	0.23	U		#	0.23	0.174
Uranium-238	pCi/L	06/22/2010	0001	0.3	U		#	0.3	0.226
Vanadium	mg/L	06/22/2010	0001	0.0005		J	#	0.000015	
Dissolved Oxygen	mg/L	06/22/2010	N001	4.57			#		
Field Ferrous Iron	mg/L	06/22/2010	N001	0.04			#		
Oxidation Reduction Potential	mV	06/22/2010	N001	-91			#		
pH	s.u.	06/22/2010	N001	8.2			#		
Specific Conductance	umhos/cm	06/22/2010	N001	358			#		
Temperature	C	06/22/2010	N001	14.63			#		
Turbidity	NTU	06/22/2010	N001	17			#		

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	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
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion 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 3 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.

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New Rifle
Groundwater Quality Data

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Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0169 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/24/2010	N001	3.13	-	18.13	540		F	#		
Ammonia Total as N	mg/L	06/24/2010	N001	3.13	-	18.13	0.1	UN	FJ	#	0.1	
Molybdenum	mg/L	06/24/2010	N001	3.13	-	18.13	0.004		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/24/2010	N001	3.13	-	18.13	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	06/24/2010	N001	3.13	-	18.13	-19.8		F	#		
pH	s.u.	06/24/2010	N001	3.13	-	18.13	7.13		F	#		
Specific Conductance	umhos /cm	06/24/2010	N001	3.13	-	18.13	2006		F	#		
Temperature	C	06/24/2010	N001	3.13	-	18.13	14.96		F	#		
Turbidity	NTU	06/24/2010	N001	3.13	-	18.13	1.3		F	#		
Uranium	mg/L	06/24/2010	N001	3.13	-	18.13	0.018		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0170 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/24/2010	N001	92.23	-	112.23	502		F	#		
Ammonia Total as N	mg/L	06/24/2010	N001	92.23	-	112.23	0.1	U	FJ	#	0.1	
Molybdenum	mg/L	06/24/2010	N001	92.23	-	112.23	0.0033		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/24/2010	N001	92.23	-	112.23	17		F	#	0.1	
Oxidation Reduction Potential	mV	06/24/2010	N001	92.23	-	112.23	14.5		F	#		
pH	s.u.	06/24/2010	N001	92.23	-	112.23	7.12		F	#		
Specific Conductance	umhos /cm	06/24/2010	N001	92.23	-	112.23	3571		F	#		
Temperature	C	06/24/2010	N001	92.23	-	112.23	17.76		F	#		
Turbidity	NTU	06/24/2010	N001	92.23	-	112.23	1.58		F	#		
Uranium	mg/L	06/24/2010	N001	92.23	-	112.23	0.056		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0172 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/24/2010	N001	6.98	-	31.98	768		F	#		
Ammonia Total as N	mg/L	06/24/2010	N001	6.98	-	31.98	0.1	U	FJ	#	0.1	
Molybdenum	mg/L	06/24/2010	N001	6.98	-	31.98	0.0052		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/24/2010	N001	6.98	-	31.98	0.012		F	#	0.01	
Oxidation Reduction Potential	mV	06/24/2010	N001	6.98	-	31.98	-44.5		F	#		
pH	s.u.	06/24/2010	N001	6.98	-	31.98	7.05		F	#		
Specific Conductance	umhos /cm	06/24/2010	N001	6.98	-	31.98	18443		F	#		
Temperature	C	06/24/2010	N001	6.98	-	31.98	14.39		F	#		
Turbidity	NTU	06/24/2010	N001	6.98	-	31.98	1.91		F	#		
Uranium	mg/L	06/24/2010	N001	6.98	-	31.98	0.062		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0195 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	5.29	-	25.29	407		F	#		
Ammonia Total as N	mg/L	06/22/2010	N001	5.29	-	25.29	0.97		FJ	#	0.1	
Molybdenum	mg/L	06/22/2010	N001	5.29	-	25.29	0.035		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	5.29	-	25.29	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	06/22/2010	N001	5.29	-	25.29	-36.5		F	#		
pH	s.u.	06/22/2010	N001	5.29	-	25.29	6.91		F	#		
Specific Conductance	umhos /cm	06/22/2010	N001	5.29	-	25.29	1251		F	#		
Temperature	C	06/22/2010	N001	5.29	-	25.29	12.66		F	#		
Turbidity	NTU	06/22/2010	N001	5.29	-	25.29	3.95		F	#		
Uranium	mg/L	06/22/2010	N001	5.29	-	25.29	0.016		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0201 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	7.35	-	22.35	248		F	#		
Ammonia Total as N	mg/L	06/22/2010	N001	7.35	-	22.35	110		FJ	#	5	
Molybdenum	mg/L	06/22/2010	N001	7.35	-	22.35	1.8		F	#	0.0032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	7.35	-	22.35	52		F	#	0.5	
Oxidation Reduction Potential	mV	06/22/2010	N001	7.35	-	22.35	232.7		F	#		
pH	s.u.	06/22/2010	N001	7.35	-	22.35	6.78		F	#		
Specific Conductance	umhos /cm	06/22/2010	N001	7.35	-	22.35	4554		F	#		
Temperature	C	06/22/2010	N001	7.35	-	22.35	15.59		F	#		
Turbidity	NTU	06/22/2010	N001	7.35	-	22.35	1.07		F	#		
Uranium	mg/L	06/22/2010	N001	7.35	-	22.35	0.074		F	#	0.00029	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0215 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/24/2010	N001	6.84	-	21.84	260		F	#		
Ammonia Total as N	mg/L	06/24/2010	N001	6.84	-	21.84	3.4		FJ	#	0.1	
Molybdenum	mg/L	06/24/2010	N001	6.84	-	21.84	0.013		F	#	0.000096	
Nitrate + Nitrite as Nitrogen	mg/L	06/24/2010	N001	6.84	-	21.84	0.027		F	#	0.01	
Oxidation Reduction Potential	mV	06/24/2010	N001	6.84	-	21.84	-64.5		F	#		
pH	s.u.	06/24/2010	N001	6.84	-	21.84	7.31		F	#		
Specific Conductance	umhos /cm	06/24/2010	N001	6.84	-	21.84	2046		F	#		
Temperature	C	06/24/2010	N001	6.84	-	21.84	14.65		F	#		
Turbidity	NTU	06/24/2010	N001	6.84	-	21.84	0.6		F	#		
Uranium	mg/L	06/24/2010	N001	6.84	-	21.84	0.034		F	#	0.0000088	
Vanadium	mg/L	06/24/2010	N001	6.84	-	21.84	0.0026		F	#	0.000046	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0216 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/24/2010	N001	5.5	-	20.5	200		F	#		
Ammonia Total as N	mg/L	06/24/2010	N001	5.5	-	20.5	7		FJ	#	0.2	
Molybdenum	mg/L	06/24/2010	N001	5.5	-	20.5	0.055		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/24/2010	N001	5.5	-	20.5	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	06/24/2010	N001	5.5	-	20.5	-49.8		F	#		
pH	s.u.	06/24/2010	N001	5.5	-	20.5	7.57		F	#		
Specific Conductance	umhos /cm	06/24/2010	N001	5.5	-	20.5	1160		F	#		
Temperature	C	06/24/2010	N001	5.5	-	20.5	14.59		F	#		
Turbidity	NTU	06/24/2010	N001	5.5	-	20.5	1.98		F	#		
Uranium	mg/L	06/24/2010	N001	5.5	-	20.5	0.022		F	#	0.000029	
Vanadium	mg/L	06/24/2010	N001	5.5	-	20.5	0.14		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0217 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	7.4	-	22.4	189		F	#		
Ammonia Total as N	mg/L	06/22/2010	N001	7.4	-	22.4	53		FJ	#	2	
Molybdenum	mg/L	06/22/2010	N001	7.4	-	22.4	1.6		F	#	0.0032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	7.4	-	22.4	2.9		F	#	0.05	
Oxidation Reduction Potential	mV	06/22/2010	N001	7.4	-	22.4	220.2		F	#		
pH	s.u.	06/22/2010	N001	7.4	-	22.4	6.75		F	#		
Specific Conductance	umhos /cm	06/22/2010	N001	7.4	-	22.4	3431		F	#		
Temperature	C	06/22/2010	N001	7.4	-	22.4	13.66		F	#		
Turbidity	NTU	06/22/2010	N001	7.4	-	22.4	2.15		F	#		
Uranium	mg/L	06/22/2010	N001	7.4	-	22.4	0.12		F	#	0.00029	
Vanadium	mg/L	06/22/2010	N001	7.4	-	22.4	2.3		F	#	0.0015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0590 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	5.21	-	19.21	287		F	#		
Ammonia Total as N	mg/L	06/22/2010	N001	5.21	-	19.21	190		FJ	#	20	
Molybdenum	mg/L	06/22/2010	N001	5.21	-	19.21	1		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	5.21	-	19.21	63		F	#	0.5	
Oxidation Reduction Potential	mV	06/22/2010	N001	5.21	-	19.21	238.4		F	#		
pH	s.u.	06/22/2010	N001	5.21	-	19.21	6.61		F	#		
Specific Conductance	umhos /cm	06/22/2010	N001	5.21	-	19.21	6616		F	#		
Temperature	C	06/22/2010	N001	5.21	-	19.21	13.01		F	#		
Turbidity	NTU	06/22/2010	N001	5.21	-	19.21	2.46		F	#		
Uranium	mg/L	06/22/2010	N001	5.21	-	19.21	0.081		F	#	0.000029	
Vanadium	mg/L	06/22/2010	N001	5.21	-	19.21	0.37		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0620 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/24/2010	N001	6.7	-	10.7	517		F	#		
Ammonia Total as N	mg/L	06/24/2010	N001	6.7	-	10.7	0.1	U	FJ	#	0.1	
Molybdenum	mg/L	06/24/2010	N001	6.7	-	10.7	0.01		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/24/2010	N001	6.7	-	10.7	28		F	#	0.2	
Oxidation Reduction Potential	mV	06/24/2010	N001	6.7	-	10.7	28		F	#		
pH	s.u.	06/24/2010	N001	6.7	-	10.7	7.21		F	#		
Specific Conductance	umhos /cm	06/24/2010	N001	6.7	-	10.7	6839		F	#		
Temperature	C	06/24/2010	N001	6.7	-	10.7	14.82		F	#		
Turbidity	NTU	06/24/2010	N001	6.7	-	10.7	1.88		F	#		
Uranium	mg/L	06/24/2010	N001	6.7	-	10.7	0.065		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0635 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/24/2010	N001	12	-	17	297		F	#		
Ammonia Total as N	mg/L	06/24/2010	N001	12	-	17	99		FJ	#	5	
Molybdenum	mg/L	06/24/2010	N001	12	-	17	0.4		F	#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/24/2010	N001	12	-	17	10		F	#	0.1	
Oxidation Reduction Potential	mV	06/24/2010	N001	12	-	17	124.9		F	#		
pH	s.u.	06/24/2010	N001	12	-	17	6.98		F	#		
Specific Conductance	umhos /cm	06/24/2010	N001	12	-	17	3503		F	#		
Temperature	C	06/24/2010	N001	12	-	17	12.98		F	#		
Turbidity	NTU	06/24/2010	N001	12	-	17	9.23		F	#		
Uranium	mg/L	06/24/2010	N001	12	-	17	0.072		F	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0658 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	.5	-	5.5	308		F	#		
Ammonia Total as N	mg/L	06/23/2010	N001	.5	-	5.5	48		FJ	#	5	
Molybdenum	mg/L	06/23/2010	N001	.5	-	5.5	2.2		F	#	0.0064	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N001	.5	-	5.5	23		F	#	0.2	
Oxidation Reduction Potential	mV	06/23/2010	N001	.5	-	5.5	154.5		F	#		
pH	s.u.	06/23/2010	N001	.5	-	5.5	6.82		F	#		
Specific Conductance	umhos /cm	06/23/2010	N001	.5	-	5.5	3072		F	#		
Temperature	C	06/23/2010	N001	.5	-	5.5	15.99		F	#		
Turbidity	NTU	06/23/2010	N001	.5	-	5.5	5.51		F	#		
Uranium	mg/L	06/23/2010	N001	.5	-	5.5	0.069		F	#	0.00058	
Vanadium	mg/L	06/23/2010	N001	.5	-	5.5	52		F	#	0.03	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0659 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	.5	-	10.5	182		F	#		
Ammonia Total as N	mg/L	06/23/2010	N001	.5	-	10.5	35		FJ	#	1	
Molybdenum	mg/L	06/23/2010	N001	.5	-	10.5	2.2		F	#	0.0032	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N001	.5	-	10.5	17		F	#	0.1	
Oxidation Reduction Potential	mV	06/23/2010	N001	.5	-	10.5	153.9		F	#		
pH	s.u.	06/23/2010	N001	.5	-	10.5	7.11		F	#		
Specific Conductance	umhos /cm	06/23/2010	N001	.5	-	10.5	3355		F	#		
Temperature	C	06/23/2010	N001	.5	-	10.5	16.29		F	#		
Turbidity	NTU	06/23/2010	N001	.5	-	10.5	4.26		F	#		
Uranium	mg/L	06/23/2010	N001	.5	-	10.5	0.081		F	#	0.00029	
Vanadium	mg/L	06/23/2010	N001	.5	-	10.5	4		F	#	0.0015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0664 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	7.7	-	14.7	489		F	#		
Ammonia Total as N	mg/L	06/23/2010	N001	7.7	-	14.7	38		FJ	#	1	
Ammonia Total as N	mg/L	06/23/2010	N002	7.7	-	14.7	37		FJ	#	1	
Molybdenum	mg/L	06/23/2010	N001	7.7	-	14.7	0.28		F	#	0.0032	
Molybdenum	mg/L	06/23/2010	N002	7.7	-	14.7	0.27		F	#	0.0032	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N001	7.7	-	14.7	15		F	#	0.1	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N002	7.7	-	14.7	15		F	#	0.1	
Oxidation Reduction Potential	mV	06/23/2010	N001	7.7	-	14.7	142.9		F	#		
pH	s.u.	06/23/2010	N001	7.7	-	14.7	7.01		F	#		
Specific Conductance	umhos /cm	06/23/2010	N001	7.7	-	14.7	2747		F	#		
Temperature	C	06/23/2010	N001	7.7	-	14.7	14.99		F	#		
Turbidity	NTU	06/23/2010	N001	7.7	-	14.7	4.8		F	#		
Uranium	mg/L	06/23/2010	N001	7.7	-	14.7	0.088		F	#	0.00029	
Uranium	mg/L	06/23/2010	N002	7.7	-	14.7	0.082		F	#	0.00029	
Vanadium	mg/L	06/23/2010	N001	7.7	-	14.7	2.6		F	#	0.0015	
Vanadium	mg/L	06/23/2010	N002	7.7	-	14.7	2.6		F	#	0.0015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0669 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	4	-	10.6	327		FQ	#		
Ammonia Total as N	mg/L	06/23/2010	0001	4	-	10.6	110		FQJ	#	5	
Molybdenum	mg/L	06/23/2010	0001	4	-	10.6	1.5		FQ	#	0.0032	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	0001	4	-	10.6	8.9		FQ	#	0.05	
Oxidation Reduction Potential	mV	06/23/2010	N001	4	-	10.6	166.4		FQ	#		
pH	s.u.	06/23/2010	N001	4	-	10.6	6.86		FQ	#		
Specific Conductance	umhos /cm	06/23/2010	N001	4	-	10.6	4164		FQ	#		
Temperature	C	06/23/2010	N001	4	-	10.6	16.95		FQ	#		
Turbidity	NTU	06/23/2010	N001	4	-	10.6	21.4		FQ	#		
Uranium	mg/L	06/23/2010	0001	4	-	10.6	0.14		FQ	#	0.00029	
Vanadium	mg/L	06/23/2010	0001	4	-	10.6	3.1		FQ	#	0.0015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0670 WELL For Organics Study.

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	5.2	-	12.2	421		FQ	#		
Ammonia Total as N	mg/L	06/23/2010	N001	5.2	-	12.2	1.9		FQJ	#	0.1	
Dissolved Oxygen	mg/L	06/23/2010	N001	5.2	-	12.2	0		FQ	#		
Molybdenum	mg/L	06/23/2010	N001	5.2	-	12.2	0.51		FQ	#	0.0032	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N001	5.2	-	12.2	55		FQ	#	0.5	
Oxidation Reduction Potential	mV	06/23/2010	N001	5.2	-	12.2	115.8		FQ	#		
pH	s.u.	06/23/2010	N001	5.2	-	12.2	7.01		FQ	#		
Specific Conductance	umhos /cm	06/23/2010	N001	5.2	-	12.2	2986		FQ	#		
Temperature	C	06/23/2010	N001	5.2	-	12.2	13.65		FQ	#		
Turbidity	NTU	06/23/2010	N001	5.2	-	12.2	3.38		FQ	#		
Uranium	mg/L	06/23/2010	N001	5.2	-	12.2	0.29		FQ	#	0.00029	
Vanadium	mg/L	06/23/2010	N001	5.2	-	12.2	1.4		FQ	#	0.0015	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0855 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/23/2010	N001	6	-	11	230		F	#		
Ammonia Total as N	mg/L	06/23/2010	N001	6	-	11	40		FJ	#	1	
Molybdenum	mg/L	06/23/2010	N001	6	-	11	1.8		F	#	0.032	
Nitrate + Nitrite as Nitrogen	mg/L	06/23/2010	N001	6	-	11	15		F	#	0.1	
Oxidation Reduction Potential	mV	06/23/2010	N001	6	-	11	152.9		F	#		
pH	s.u.	06/23/2010	N001	6	-	11	6.68		F	#		
Specific Conductance	umhos /cm	06/23/2010	N001	6	-	11	2971		F	#		
Temperature	C	06/23/2010	N001	6	-	11	16.24		F	#		
Turbidity	NTU	06/23/2010	N001	6	-	11	2.48		F	#		
Uranium	mg/L	06/23/2010	N001	6	-	11	0.052		F	#	0.0029	
Vanadium	mg/L	06/23/2010	N001	6	-	11	40		F	#	0.015	

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 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
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.

U Analytical result below detection limit.
W Post-digestion 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 3 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.

New Rifle
Surface Water Quality Data

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Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0320 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	303			#		
Ammonia Total as N	mg/L	06/22/2010	N001	10		J	#	0.5	
Molybdenum	mg/L	06/22/2010	N001	1.9			#	0.0016	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	36			#	0.2	
Oxidation Reduction Potential	mV	06/22/2010	N001	225.1			#		
pH	s.u.	06/22/2010	N001	8.09			#		
Specific Conductance	umhos/cm	06/22/2010	N001	6969			#		
Temperature	C	06/22/2010	N001	23.1			#		
Turbidity	NTU	06/22/2010	N001	3.97			#		
Uranium	mg/L	06/22/2010	N001	0.21			#	0.00015	
Vanadium	mg/L	06/22/2010	N001	0.22			#	0.00076	

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0322 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	06/22/2010	0001	0.1	U	J	#	0.1	
Molybdenum	mg/L	06/22/2010	0001	0.0031			#	0.000096	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	0001	0.13			#	0.01	
Uranium	mg/L	06/22/2010	0001	0.00098			#	0.0000088	
Vanadium	mg/L	06/22/2010	0001	0.00086		J	#	0.000046	
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	70			#		
Oxidation Reduction Potential	mV	06/22/2010	N001	-103.1			#		
pH	s.u.	06/22/2010	N001	8.04			#		
Specific Conductance	umhos/cm	06/22/2010	N001	418			#		
Temperature	C	06/22/2010	N001	18.96			#		
Turbidity	NTU	06/22/2010	N001	15.7			#		

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0323 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	145			#		
Ammonia Total as N	mg/L	06/22/2010	N001	26		J	#	1	
Molybdenum	mg/L	06/22/2010	N001	2.5			#	0.0016	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	91			#	0.5	
Oxidation Reduction Potential	mV	06/22/2010	N001	130.3			#		
pH	s.u.	06/22/2010	N001	7.99			#		
Specific Conductance	umhos/cm	06/22/2010	N001	8981			#		
Temperature	C	06/22/2010	N001	21.72			#		
Turbidity	NTU	06/22/2010	N001	2.76			#		
Uranium	mg/L	06/22/2010	N001	0.29			#	0.00015	
Vanadium	mg/L	06/22/2010	N001	0.0043			#	0.000046	

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0324 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/24/2010	0001	120			#		
Ammonia Total as N	mg/L	06/24/2010	0001	0.1	U	J	#	0.1	
Molybdenum	mg/L	06/24/2010	0001	0.0032			#	0.000096	
Nitrate + Nitrite as Nitrogen	mg/L	06/24/2010	0001	0.1			#	0.01	
Uranium	mg/L	06/24/2010	0001	0.001			#	0.0000088	
Vanadium	mg/L	06/24/2010	0001	0.00078		J	#	0.000046	
Oxidation Reduction Potential	mV	06/24/2010	N001	-8.2			#		
pH	s.u.	06/24/2010	N001	8.21			#		
Specific Conductance	umhos/cm	06/24/2010	N001	406			#		
Temperature	C	06/24/2010	N001	17.41			#		
Turbidity	NTU	06/24/2010	N001	13.7			#		

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0452 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	265			#		
Ammonia Total as N	mg/L	06/22/2010	N001	21		J	#	1	
Molybdenum	mg/L	06/22/2010	N001	2.8			#	0.0032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	30			#	0.2	
Oxidation Reduction Potential	mV	06/22/2010	N001	220.3			#		
pH	s.u.	06/22/2010	N001	7.8			#		
Specific Conductance	umhos/cm	06/22/2010	N001	5679			#		
Temperature	C	06/22/2010	N001	24.41			#		
Turbidity	NTU	06/22/2010	N001	7.71			#		
Uranium	mg/L	06/22/2010	N001	0.2			#	0.00029	
Vanadium	mg/L	06/22/2010	N001	1.3			#	0.0015	

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0453 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	0001	160			#		
Ammonia Total as N	mg/L	06/22/2010	0001	30		J	#	2	
Molybdenum	mg/L	06/22/2010	0001	2.7			#	0.00032	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	0001	28			#	0.2	
Uranium	mg/L	06/22/2010	0001	0.21			#	0.000029	
Vanadium	mg/L	06/22/2010	0001	1.4			#	0.00015	
Oxidation Reduction Potential	mV	06/22/2010	N001	230			#		
pH	s.u.	06/22/2010	N001	7.54			#		
Specific Conductance	umhos/cm	06/22/2010	N001	5164			#		
Temperature	C	06/22/2010	N001	23.26			#		
Turbidity	NTU	06/22/2010	N001	10.2			#		

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010
Location: 0575 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	06/22/2010	N001	132			#		
Ammonia Total as N	mg/L	06/22/2010	N001	0.1	U	J	#	0.1	
Molybdenum	mg/L	06/22/2010	N001	0.035			#	0.000096	
Nitrate + Nitrite as Nitrogen	mg/L	06/22/2010	N001	0.011			#	0.01	
Oxidation Reduction Potential	mV	06/22/2010	N001	113.6			#		
pH	s.u.	06/22/2010	N001	8.58			#		
Specific Conductance	umhos/cm	06/22/2010	N001	1575			#		
Temperature	C	06/22/2010	N001	22.16			#		
Turbidity	NTU	06/22/2010	N001	5.01			#		
Uranium	mg/L	06/22/2010	N001	0.017			#	0.0000088	
Vanadium	mg/L	06/22/2010	N001	0.0032			#	0.000046	

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 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
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.

U Analytical result below detection limit.
W Post-digestion 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.
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.

Equipment Blank Data

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BLANKS REPORT
LAB: PARAGON/ALS LABORATORY GROUP (Fort Collins, CO)
RIN: 10063154
Report Date: 9/13/2010

Parameter	Site Code	Location ID	Sample Date	ID	Units	Result	Qualifiers Lab	Qualifiers Data	Detection Limit	Uncertainty	Sample Type
Ammonia Total as N	RFO01	0999	06/24/2010	N001	mg/L	0.1	U	J	0.1		E
Molybdenum	RFO01	0999	06/24/2010	N001	mg/L	0.000096	U		0.000096		E
Nitrate + Nitrite as Nitrogen	RFO01	0999	06/24/2010	N001	mg/L	0.01	U		0.01		E
Uranium	RFO01	0999	06/24/2010	N001	mg/L	0.0000088	U		0.0000088		E
Vanadium	RFO01	0999	06/24/2010	N001	mg/L	0.0003			0.000046		E

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 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
N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U Analytical result below detection limit.
W Post-digestion 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 3 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.

SAMPLE TYPES:
E Equipment Blank.

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Static Water Level Data

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STATIC WATER LEVELS (USEE700) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/13/2010

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)
0292A		5323.08	06/21/2010	13:10:03	11.66	5311.42
0304	O	5310.63	06/23/2010	10:15:26	7.93	5302.7
0305	O	5312.08	06/23/2010	10:45:41	9.13	5302.95
0309	O	5313.37	06/22/2010	13:15:43	13.09	5300.28
0310	O	5311.64	06/22/2010	15:25:22	10.2	5301.44
0655	O	5312.87	06/23/2010	11:25:55	10.23	5302.64
0656	O	5313.28	06/22/2010	11:15:14	9.64	5303.64
0658	U	5323.07	06/21/2010	16:00:59	7.43	5315.64
B-04		5311.23	06/23/2010	12:00:27	9.5	5301.73
LQ-107		5307.95	06/22/2010	16:30:22	5.96	5301.99
LQ-108		5309.4	06/22/2010	16:00:08	7.63	5301.77

STATIC WATER LEVELS (USEE700) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)
0169	U	5275.47	06/24/2010	13:40:34	7.44	5268.03
0170	D	5332.97	06/24/2010	14:20:42	93.9	5239.07
0172	D	5229.45	06/24/2010	10:10:36	13.5	5215.95
0195	D	5253.1	06/22/2010	15:15:00	8.92	5244.18
0201	D	5261.07	06/22/2010	13:55:15	12.59	5248.48
0215	O	5271.42	06/24/2010	13:15:18	8.84	5262.58
0216	O	5265.41	06/24/2010	12:55:02	5.13	5260.28
0217	D	5256.98	06/22/2010	13:20:29	3.69	5253.29
0590	D	5256.37	06/22/2010	12:20:08	6.39	5249.98
0620	D	5231.22	06/24/2010	10:45:24	7.66	5223.56
0635	D	5253.12	06/24/2010	15:05:10	2.39	5250.73
0658	O	5265.91	06/23/2010	15:25:16	5.38	5260.53
0659	O	5261.33	06/23/2010	15:00:44	6.21	5255.12
0664	O	5270.17	06/23/2010	14:15:12	12.79	5257.38
0669	O	5266.56	06/23/2010	14:35:39	8.95	5257.61

STATIC WATER LEVELS (USEE700) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/13/2010

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)
0670	O	5270.94	06/23/2010	13:50:51	12.2	5258.74
0855	O	5267.24	06/23/2010	15:50:43	6.6	5260.64

FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWN GRADIENT F OFF SITE
N UNKNOWN O ON SITE U UPGRADIENT

WATER LEVEL FLAGS: D Dry F FLOWING

Old Rifle Hydrograph

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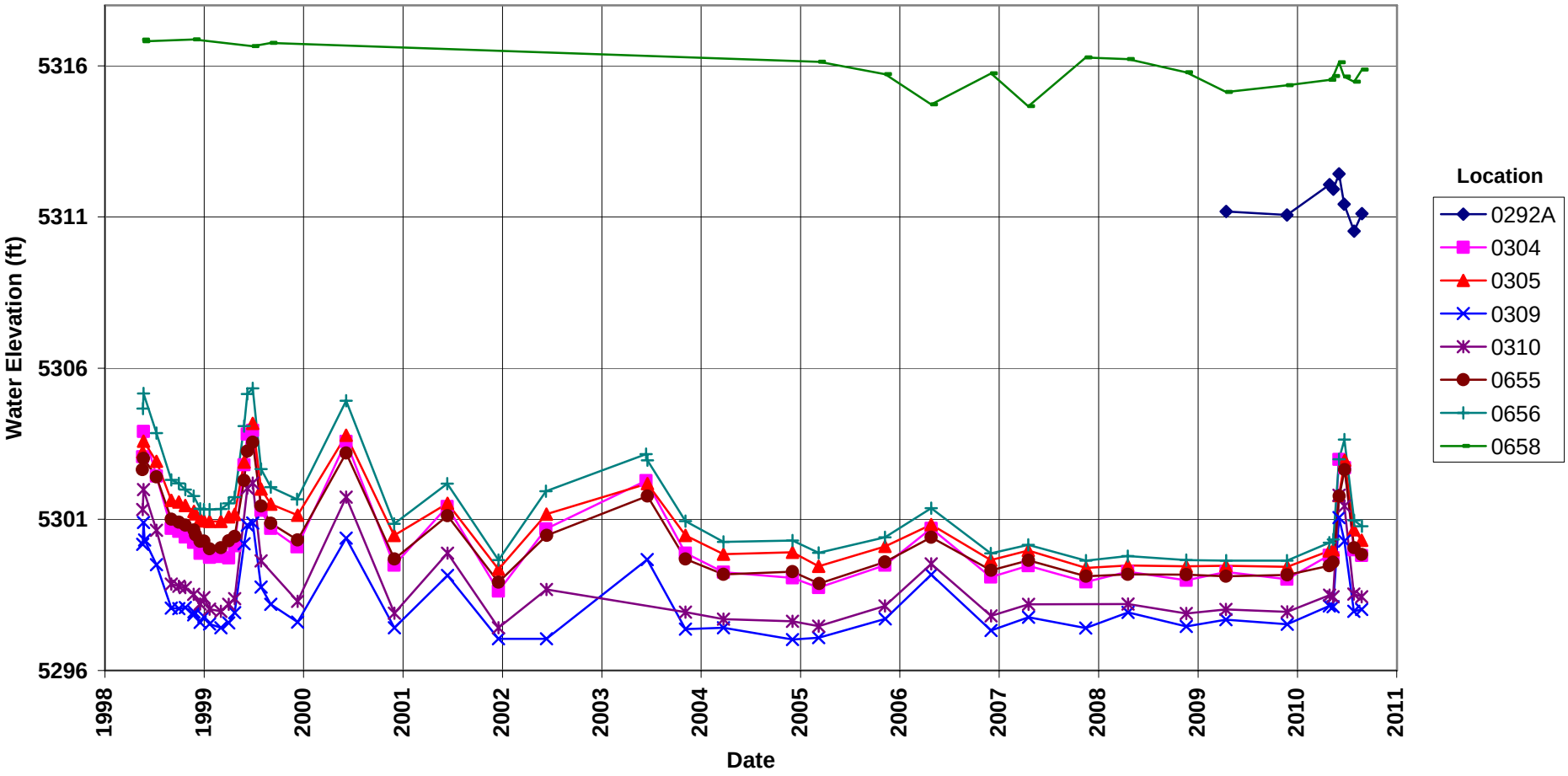
Rifle Old Processing Site
Hydrograph



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New Rifle
Hydrograph

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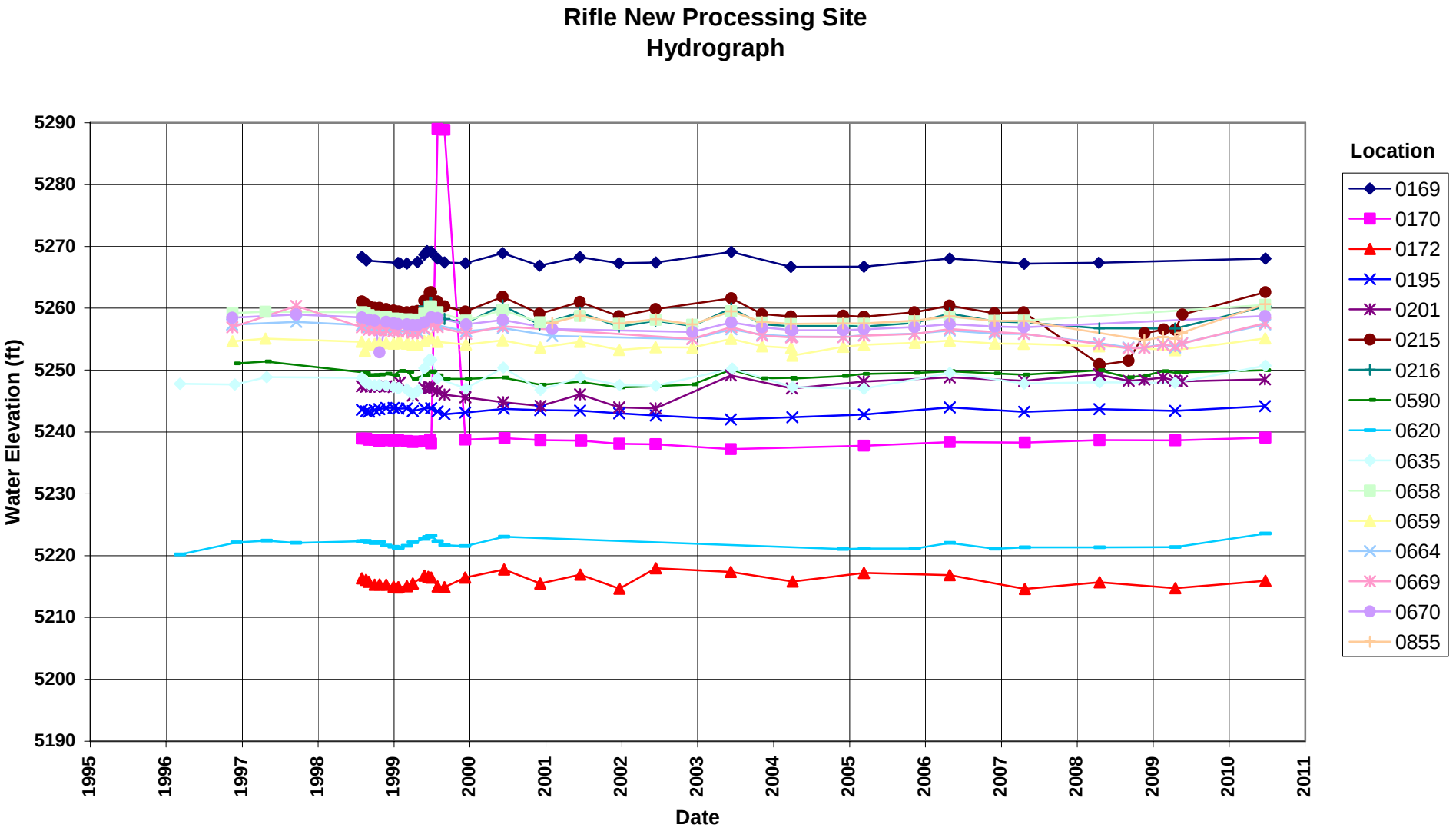
9


Rifle New Processing Site
Hydrograph
Water Elevation (ft)
5290
5280
5270
5260
5250
5240
5230
5220
5210
5200
5190
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Date
Location
0169
0170
0172
0195
0201
0215
0216
0590
0620
0635
0658
0659
0664
0669
0670
0855

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Old Rifle
Time-Concentration Graphs

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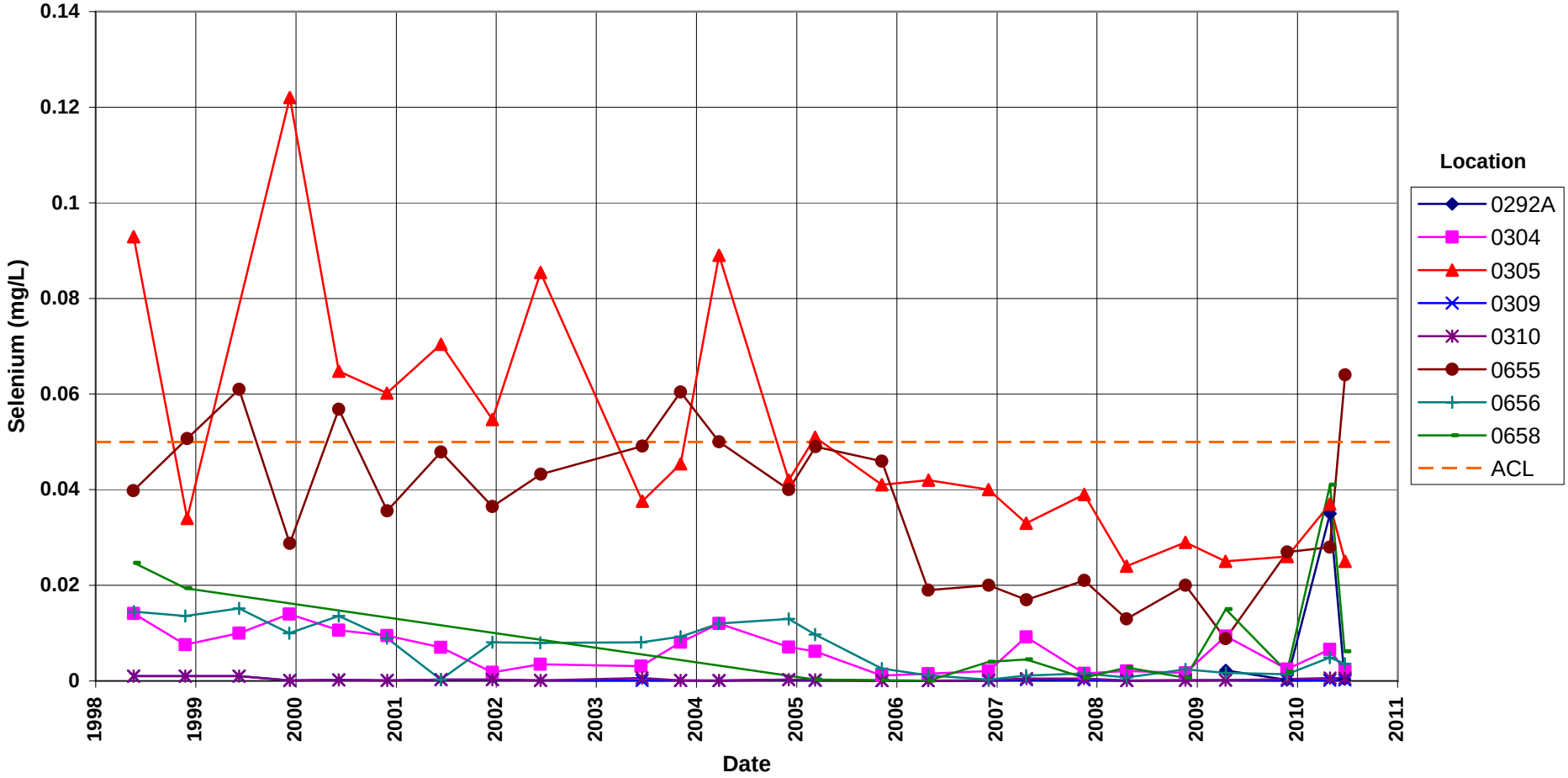
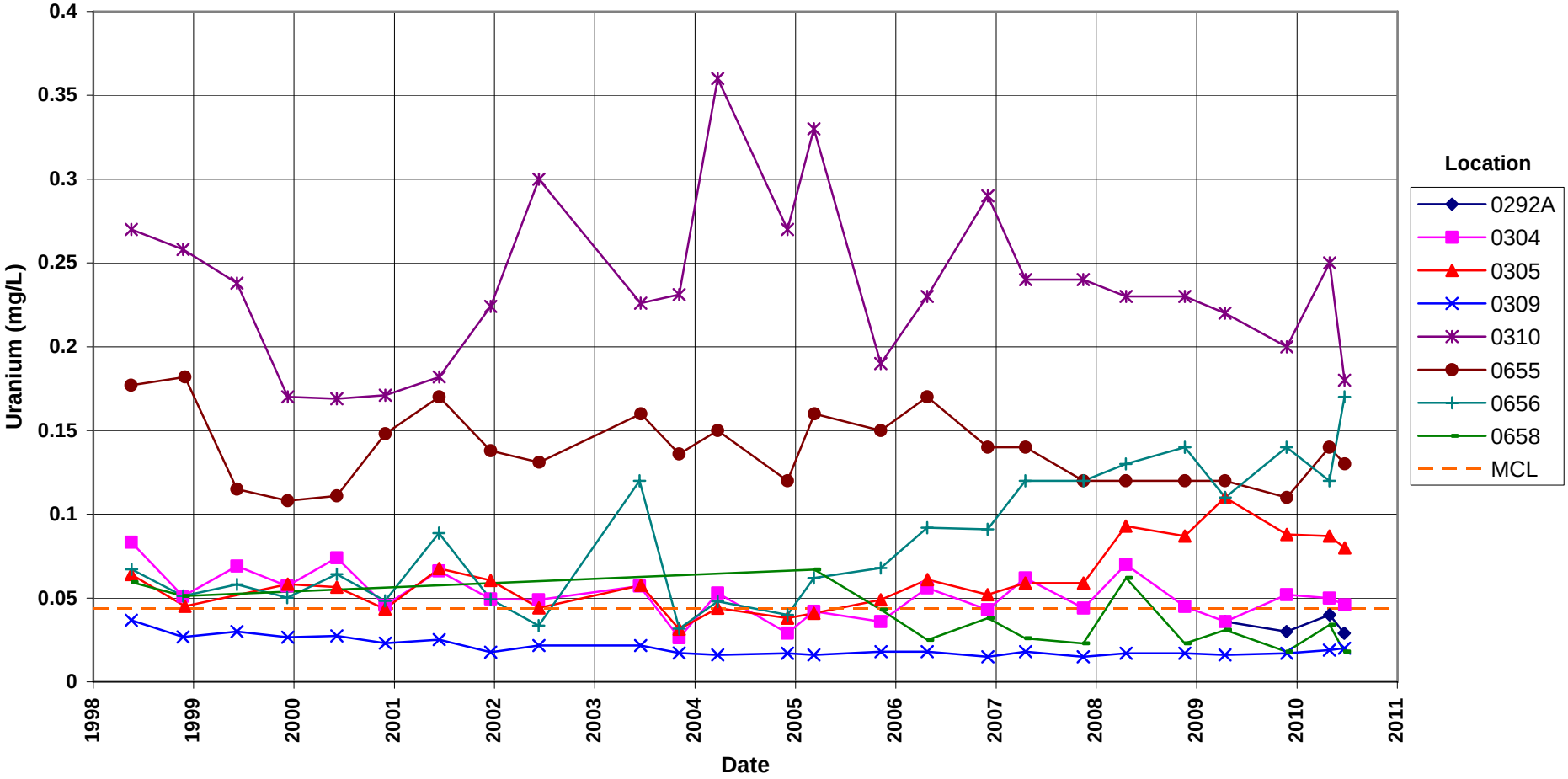
Rifle Old Processing Site
Selenium Concentration
Alternate Concentration Limit (ACL) = 0.05 mg/L

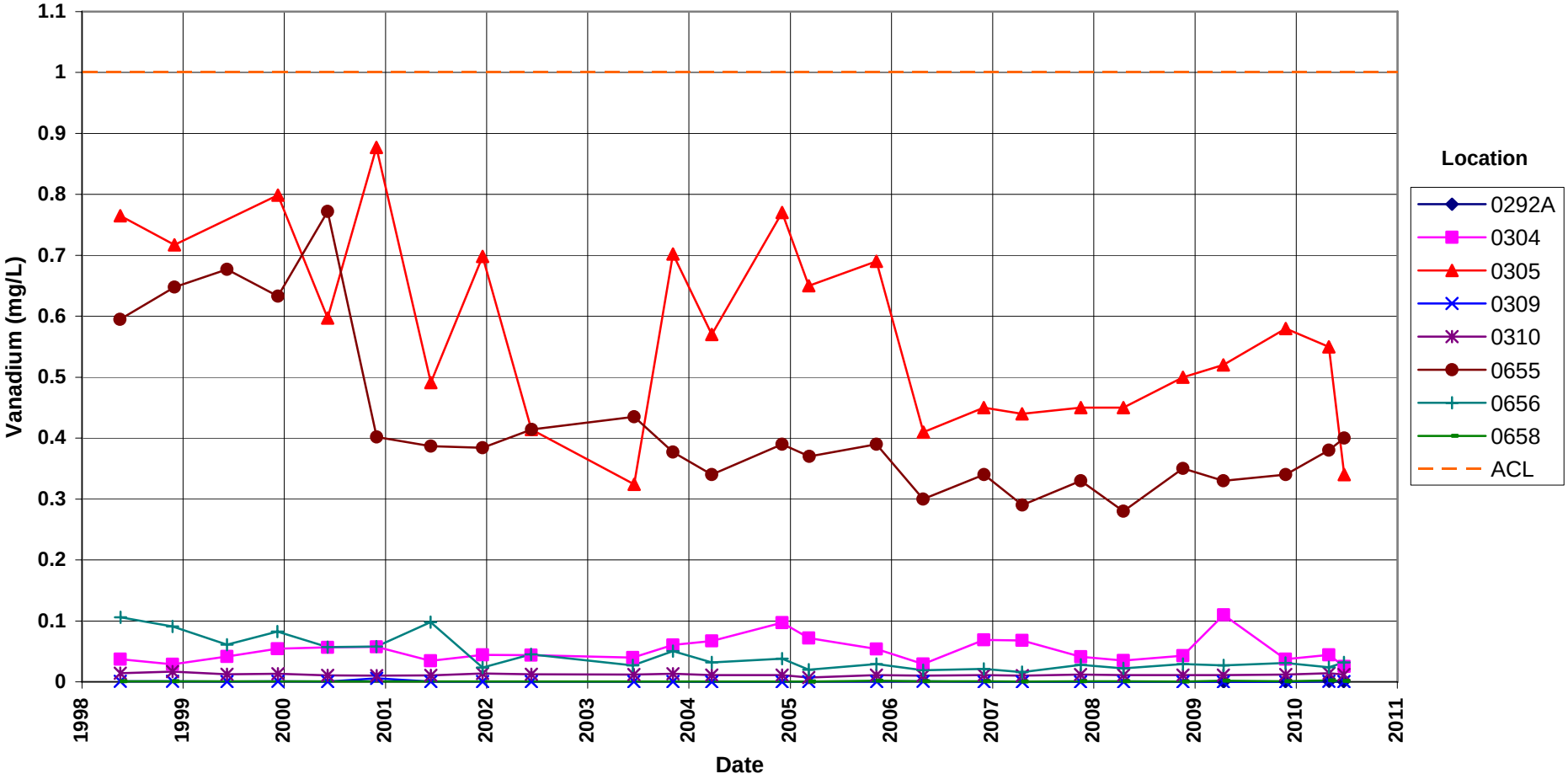


Rifle Old Processing Site
Uranium Concentration

Maximum Contaminant Level (MCL) = 0.044 mg/L



Rifle Old Processing Site
Vanadium Concentration
Alternate Concentration Limit (ACL) = 1.0 mg/L



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New Rifle
Time-Concentration Graphs

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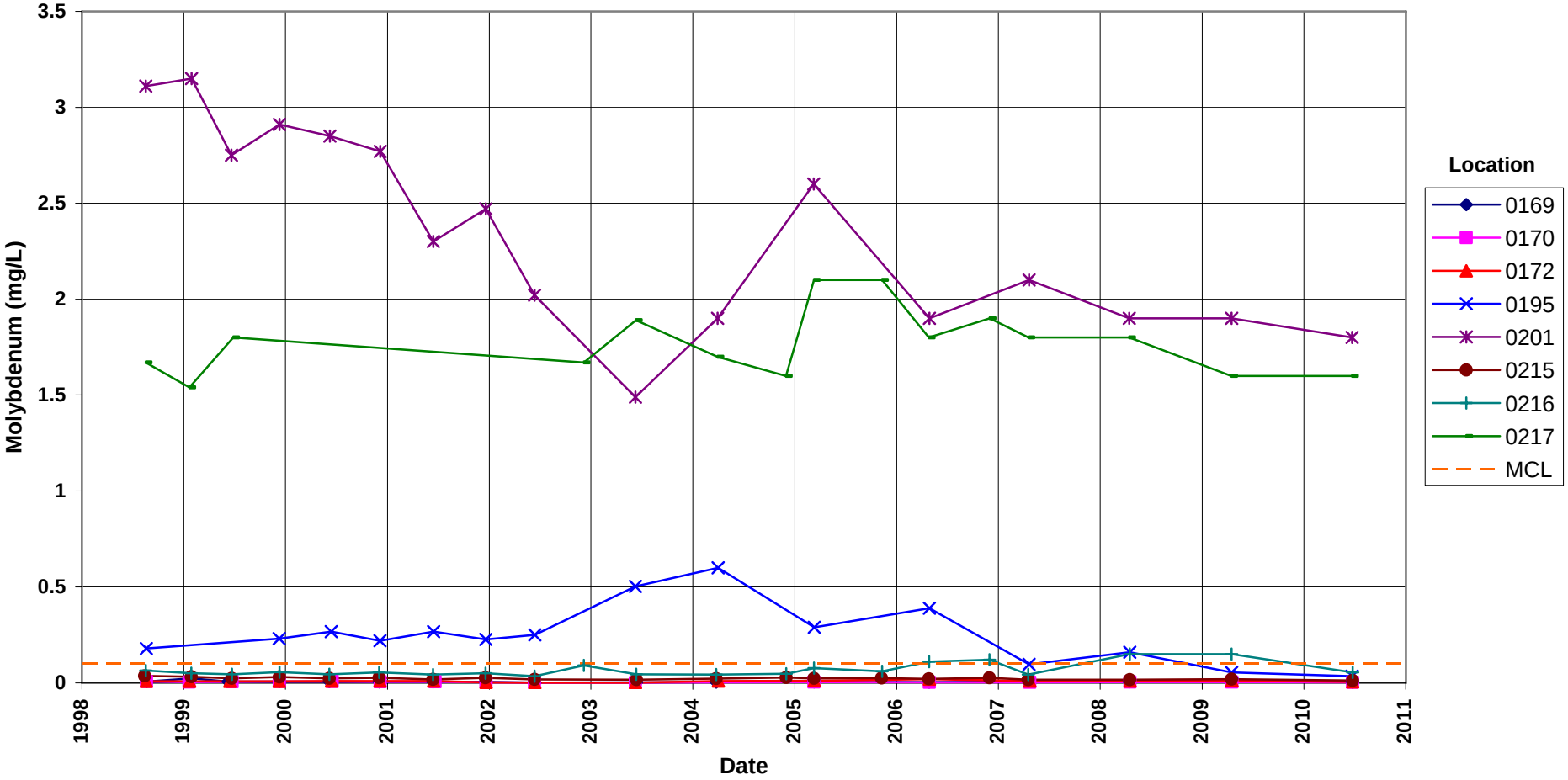
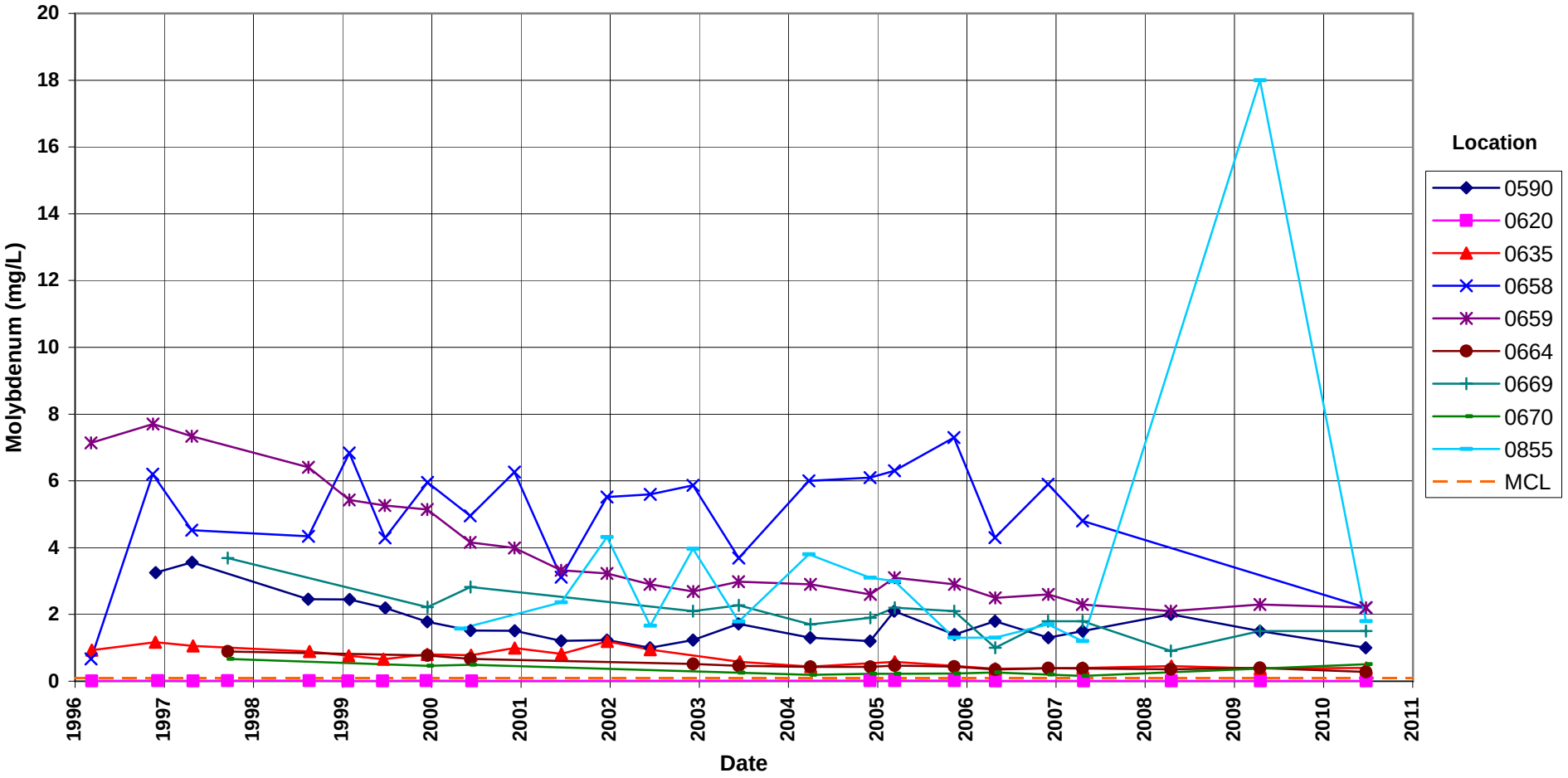
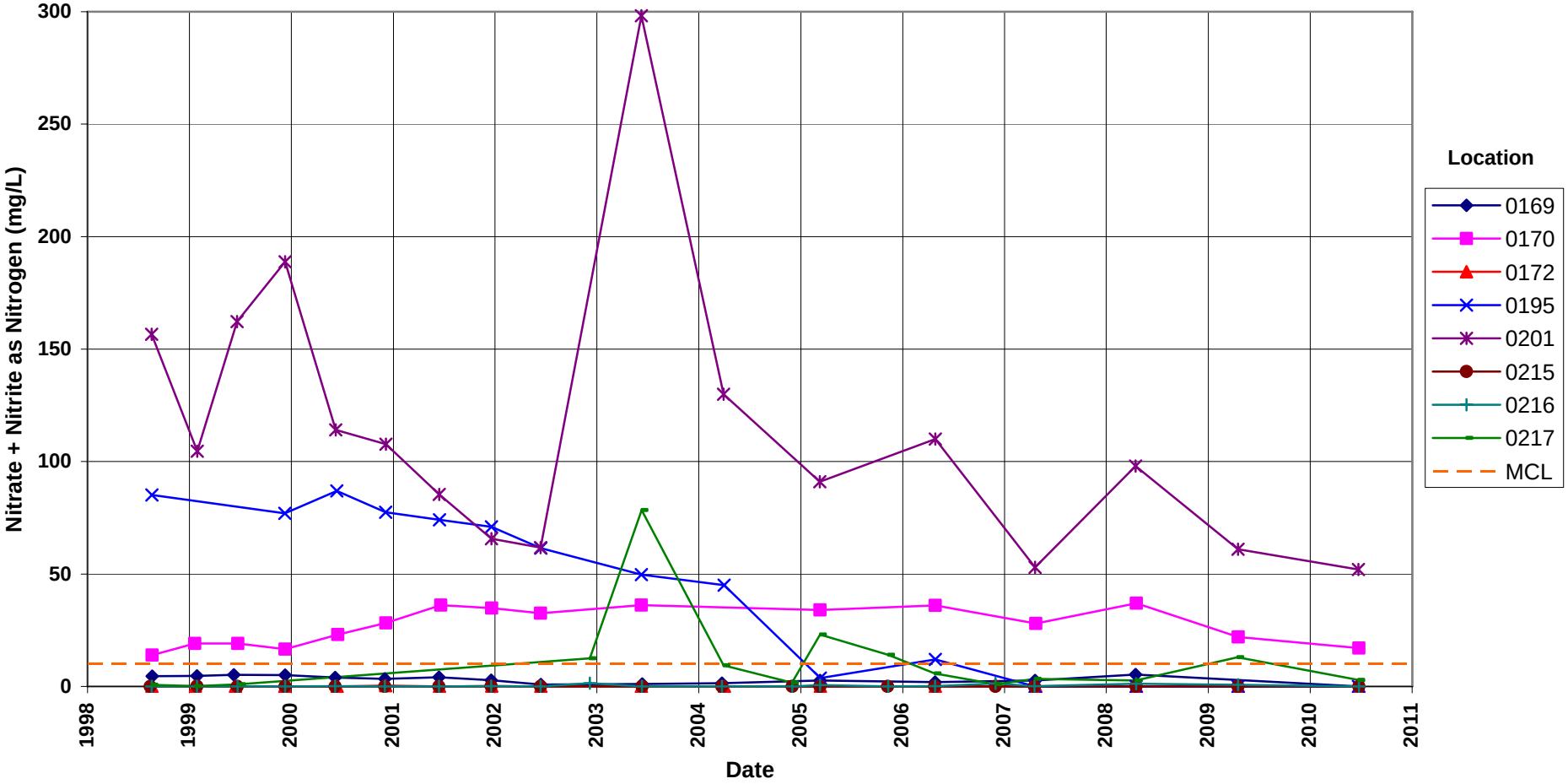
Rifle New Processing Site
Molybdenum Concentration
Maximum Contaminant Level (MCL) - 0.1 mg/L



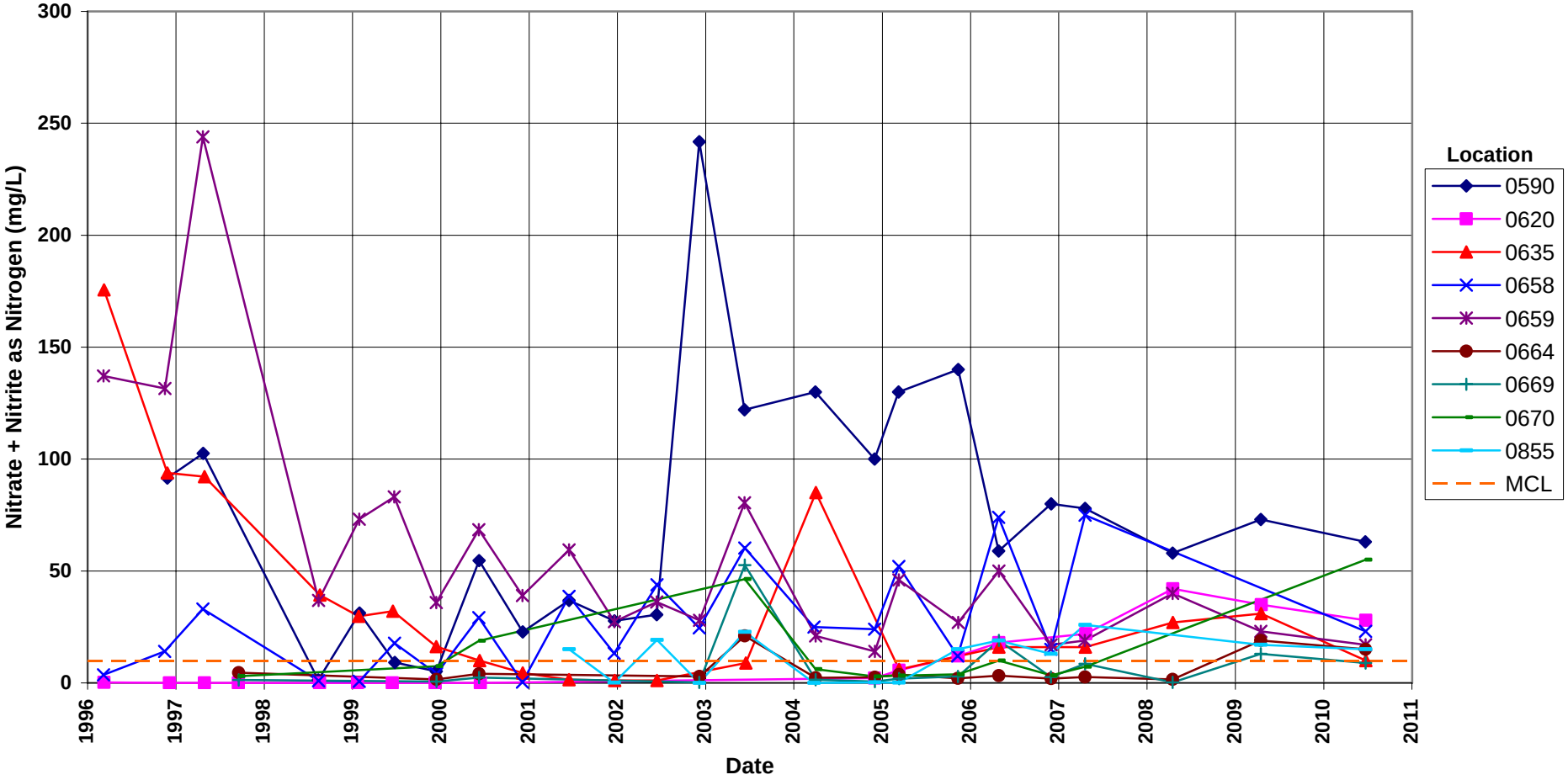
Rifle New Processing Site
Molybdenum Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



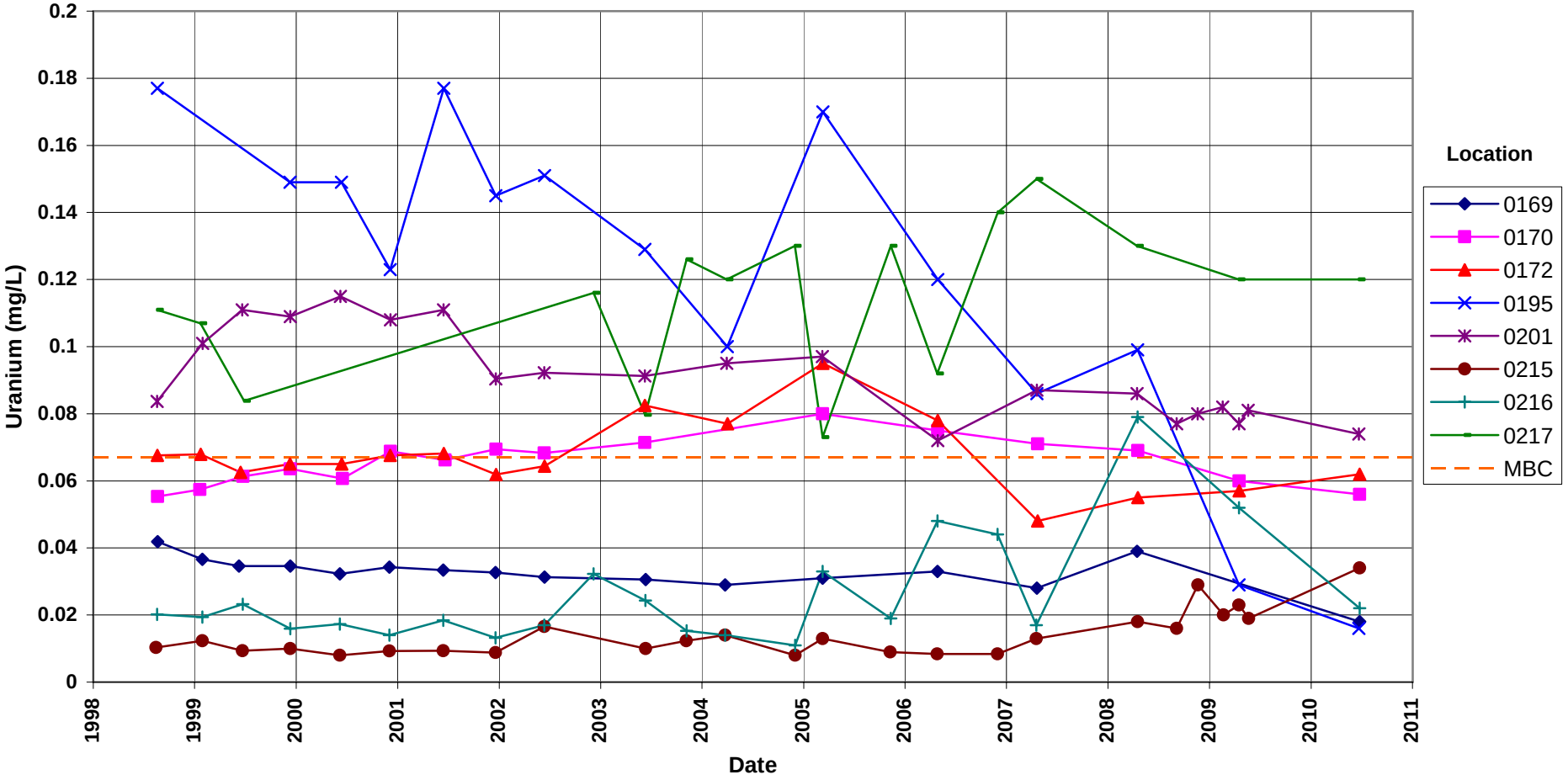
Rifle New Processing Site
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L



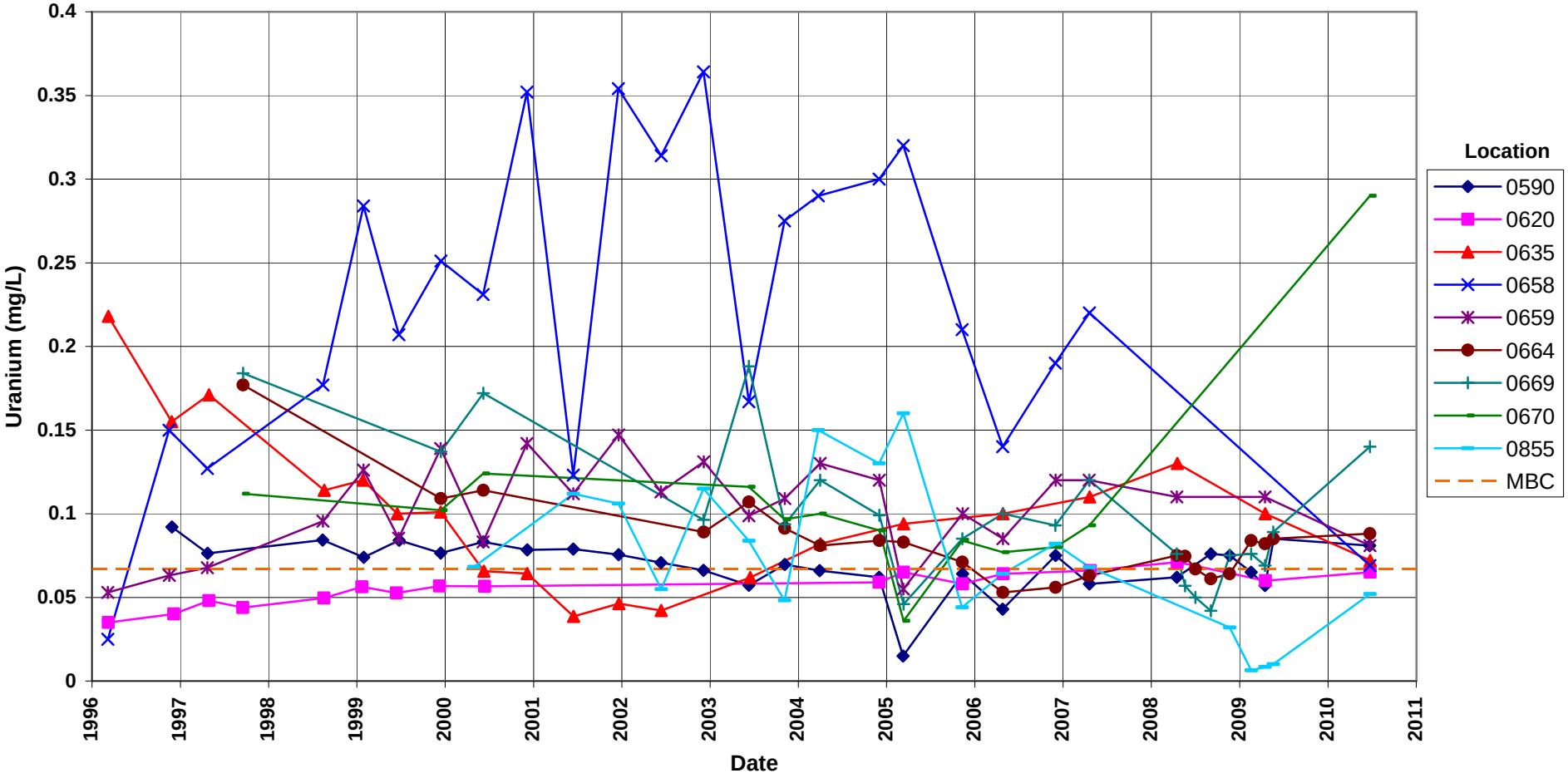
Rifle New Processing Site
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L



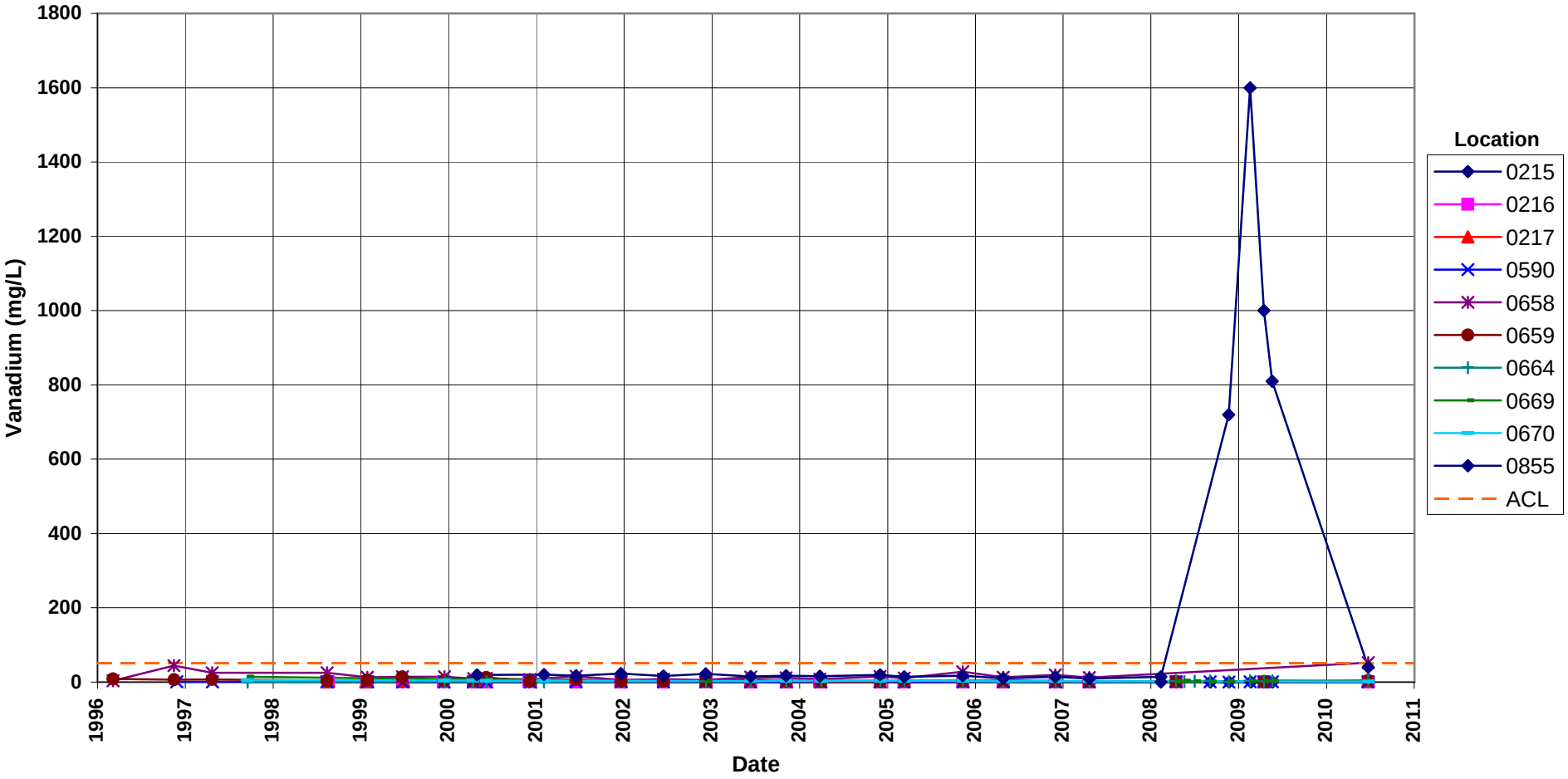
Rifle New Processing Site
Uranium Concentration
Maximum Background Concentration (MBC) = 0.067 mg/L



Rifle New Processing Site
Uranium Concentration
Maximum Background Concentration (MBC) = 0.067 mg/L



Rifle New Processing Site
Vanadium Concentration
Proposed Alternate Concentration Limit (ACL) = 50.0 mg/L



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Attachment 3
Sampling and Analysis Work Order

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Stoller

established 1959

Task Order LM00-501
Control Number 10-0624

May 24, 2010

U.S. Department of Energy
Office of Legacy Management
ATTN: Richard Bush
Site Manager
2597 B ¾ Road
Grand Junction, CO 81503

SUBJECT: Contract No. DE-AM01-07LM00060, Stoller
June 2010 Environmental Sampling at Rifle, Colorado

REFERENCE: Task Order LM00-501-02-116-402, Rifle, CO, Processing Sites

Dear Mr. Bush:

The purpose of this letter is to inform you of the upcoming sampling event at Rifle, Colorado. Enclosed are the maps and tables specifying sample locations and analytes for monitoring at the Rifle New and Old Processing sites. Water quality data will be collected at this site as part of the routine environmental sampling currently scheduled to begin the week of June 21, 2010.

The following lists show the monitoring wells and surface water locations scheduled to be sampled during this event.

Monitoring Wells*

New Rifle

169 Al	195 Al	215 Al	590 Al	658 Al	664 Al	670 Al
170 Al	201 Al	216 Al	620 Al	659 Al	669 Al	855 Al
172 Al	210 Al	217 Al	635 Al			

Old Rifle

292A Al	305 Al	309 Al	310 Al	655 Al	656 Al	658 Al
304 Al						

ERSP Wells

B-04 Al	LQ-107 Al	LQ-108 Al

*NOTE: Al = alluvium

The S.M. Stoller Corporation 2597 B¾ Road Grand Junction, CO 81503 (970) 248-6000 Fax: (970) 248-6040

Surface Locations

New Rifle

320	322	323	324	452	453	575

Old Rifle

294	395	396	398	741

All samples will be collected as directed in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*. Access agreements are being reviewed and are expected to be complete by the beginning of fieldwork.

Please contact me at (970) 248-6375 if you have any questions or concerns.

Sincerely,

Richard Dayvault
Site Lead

RD/lcg/lb

Enclosures (3)

cc: (electronic)
Cheri Bahrke, Stoller
Richard Dayvault, Stoller
Steve Donivan, Stoller
Bev Gallagher, Stoller
Lauren Goodknight, Stoller
EDD Delivery
rc-grand.junction

The S.M. Stoller Corporation 2597 B¾ Road Grand Junction, CO 81503 (970) 248-6000 Fax: (970) 248-6040

Sampling Frequencies for Locations at Rifle, Colorado

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
Monitoring Wells						
New Rifle						
169			X			
170			X			
172			X			
195			X			
201			X			Data logger
210			X			
215			X			
216			X			
217			X			
590			X			Data logger
620			X			
635			X			
658			X			
659			X			
664			X			
669			X			
670			X			
855			X			
Old Rifle						
292A		X				GCAP
304		X				GCAP
305		X				GCAP
309		X				GCAP
310		X				GCAP; data logger
655		X				GCAP; data logger
656		X				GCAP
658		X				Background well
ERSP Wells						
B-04		X				
LQ-107		X				
LQ-108		X				
Surface Locations						
New Rifle						
320			X			Wetland Pond
322			X			Colorado River
323			X			Gravel pit pond
324			X			Colorado River downgradient
452			X			Wetland Pond
453			X			Wetland Pond
575			X			Gravel pit pond
Old Rifle						
294		X				
395		X				
396		X				GCAP
398		X				GCAP
741		X				

Semi-annual sampling conducted for Old Rifle in June and November; annual sampling conducted for New Rifle in June

Constituent Sampling Breakdown

Site	Rifle						
Analyte	**Groundwater**		**Surface Water**		**Req'd Detection Limit (mg/L)**	**Analytical Method**	**Line Item Code**
Approx. No. Samples/yr	35		15				
Field Measurements							
Alkalinity	X		X				
Dissolved Oxygen							
Redox Potential	X		X				
pH	X		X				
Specific Conductance	X		X				
Turbidity	X						
Temperature	X		X				
Laboratory Measurements	**RFO*	**RFN*	*RFO*	*RFN*			
Aluminum	X		X		0.2	SW-846 6010	LMM-01
Ammonia as N (NH3-N)	X	X	X	X	0.1	EPA 350.1	WCH-A-005
Arsenic	X		X		0.0001	SW-846 6020	LMM-02
Barium	X		X		0.02	SW-846 6010	LMM-01
Boron	X		X		0.01	SW-846 6010	LMM-01
Bromide	X		X		0.5	SW-846 9056	MIS-A-038
Calcium	X		X		5	SW-846 6010	LMM-01
Chloride	X		X		0.5	SW-846 9056	MIS-A-039
Dissolved Organic Carbon	X		X		1	SM 5310 B,C,D	WCH-A-024
Iron	X		X		0.1	SW-846 6010	LMM-01
Lead							
Magnesium	X		X		5	SW-846 6010	LMM-01
Manganese	X		X		0.005	SW-846 6010	LMM-01
Molybdenum	X	X	X	X	0.003	SW-846 6020	LMM-02
Nickel							
Nitrate + Nitrite as N (NO3+NO2)-N	X	X	X	X	0.05	EPA 353.1	WCH-A-022
Potassium	X		X		5	SW-846 6010	LMM-01
Selenium	X		X		0.0001	SW-846 6020	LMM-02
Silica	X		X		0.2	SW-846 6010	LMM-01
Sodium	X		X		5	SW-846 6010	LMM-01
Strontium	X		X		0.2	SW-846 6010	LMM-01
Sulfate	X		X		0.5	SW-846 9056	MIS-A-044
Sulfide	X		X		2	EPA 376.2	WCH-A-038
Total Dissolved Solids							
Uranium	X	X	X	X	0.0001	SW-846 6020	LMM-02
Vanadium	X	0215, 0216, 0217, 0590, 0658, 0659, 0664, 0669, 0670, and 0855 only	X	X	0.0003	SW-846 6020	LMM-02
Zinc							
Total No. of Analytes	23	5	23	5			

*RFN = New Rifle; *RFO = Old Rifle

Note: All analyte samples are considered unfiltered unless stated otherwise. All private well samples are to be unfiltered. The total number of analytes does not include field parameters.

Attachment 4
Trip Report

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Stoller established 1959
Grand Junction Office

Memorandum

Control Number N/A

DATE: July 14, 2010

TO: Richard Dayvault

FROM: Dan Sellers

SUBJECT: Rifle (Old & New) Processing Sites Trip Report

Site: New and Old Rifle Sites, CO, and ERSP support

Dates of Sampling Event: June 21 thru June 25, 2010

Team Members: David Atkinson and Dan Sellers

Number of Locations Sampled:

Old Rifle: 11 monitoring wells (includes 3 ERSP wells) and 5 surface locations were sampled at the Old Rifle site.

New Rifle: 17 monitoring wells and 7 surface locations were sampled at the New Rile Site

Locations Not Sampled/Reason: None.

Quality Control Sample Cross Reference: The following are the false identifications assigned to the quality control samples:

False ID	True ID	Sample Type	Associated Matrix	Ticket Number
2927	RFO01-B-04	Old Rifle Duplicate	Groundwater	IHW 127
2948	RFN01-0664	New Rifle Duplicate	Groundwater	IHW 157
2949	NA	Equipment Blank	Surface water	IHW 158

RIN Number Assigned: RIN 10063154.

Well Inspection Summary: Well inspections were conducted at all sampled wells; all wells were in good condition. Well 0915 may have a broken screen or well casing.

Equipment: All wells were sampled using the low-flow procedure. All samples from wells were collected using a peristaltic pump and dedicated downhole tubing except well RFN01–0170, which had a dedicated bladder pump and dedicated tubing. Surface water samples were collected using a peristaltic pump, non-dedicated Flex tubing, and a stainless steel inlet weight.
Water Level Measurements: Water levels were collected at all sampled wells.

Location Specific Information: Well 0195 is obscured by tall weeds and cattails. Due to drawdown, RFN01-0669 is now a Category II well.

Field Variance: Well RFN01–0669 was filtered due to turbidity not meeting the <10 NTU criteria. A field test of ferrous iron was conducted on all Old Rifle sample locations.

Institutional Controls: All gates were appropriately closed and locked during the sampling event.

Fences, Gates, Locks: All were in good condition.
Signs: No missing or vandalized signs were observed.
Trespassing/Site Disturbances: N/A

Site Issues:

Disposal Cell/Drainage Structure Integrity: N/A.
Vegetation/Noxious Weed Concerns: N/A.
Maintenance Requirements: N/A.
Safety Issues: None.

Sample Shipment: Samples for Old Rifle were shipped to ALS Laboratory Group on June 23, 2010. New Rifle samples were shipped June 28, 2010.

Sampling/Analysis:

Old Rifle: Sample analytes included metals (Al, As, B, Ba, Ca, Fe, Mg, Mn, Mo, K, Se, Si, Na, Sr, U, V), isotopic uranium, anions (Cl, Br, SO_4), sulfide, nitrate plus nitrite as N and ammonia as N, and total organic carbon.

New Rifle: Sample analytes included metals (Mo, U, and V at selected locations); and nitrate plus nitrite as N, and ammonia as N.

Site Specific Information: Subcontractor personnel for Williams Production RMT Company (Williams) collected split samples and recorded water levels at the following New Rifle site: RFN01–0620 and RFN01–0172 on June 24, 2010. These samples were collected in response to a request made by the Colorado Oil and Gas Conservation Commission to confirm aquifer gradient and determine water quality. Williams has been requested to share with DOE–LM all measurements in and analyses of water samples from the above listed wells when results from the laboratory are received.

Corrective Action Taken: Need to investigate well RFN01–0195 with downhole camera to determine if screen is broken.

(DLS/lcg)

cc: (electronic)
Richard Bush, LM–50
Steve Donivan, Stoller
Cheri Bahrke, Stoller
EDD Delivery