



Department of Energy
Office of Legacy Management

WM-60

APR 10 2006

Mr. Don Aragon, Director
Wind River Environmental Quality Commission
Shoshone-Arapaho Tribes
P.O. Box 217
Ft. Washakie, WY 82514

Subject: Data Validation Package for Riverton, Wyoming, Processing Site

Dear Mr. Aragon:

Enclosed is a copy of the Data Validation Package (DVP) for the Riverton, Wyoming, processing site. This DVP represents analyses of ground water and surface water samples that were collected in October 2005.

This event involved sampling 16 monitor wells, 9 surface water locations, and 9 domestic wells at the Riverton, Wyoming, Processing site. Sampling and analysis was conducted as specified in the *Ground Water and Surface Water Sampling and Analysis Plan for the U. S. Department of Energy Office of Legacy Management Sites* (April 2005)

Results from this sampling event do not indicate any unexpected movement of contaminated ground water. Concentrations of molybdenum and uranium in samples collected from semi-confined aquifer monitor wells and confined aquifer domestic wells were below their respective Uranium Mill Tailings Remedial Action (UMTRA) ground water standard. Although concentrations of molybdenum and uranium in the surficial aquifer currently exceed their respective UMTRA ground water standard, concentrations continue to trend downward as shown in the time versus concentration graphs, which are included in the Data Presentation section. Ground water modeling predicts that natural flushing of the surficial aquifer will reduce concentrations below standards within 100 years. The Environmental Protection Agency ground water standards for molybdenum and uranium were exceeded in samples collected from surficial aquifer monitor wells listed in Table 1.

Surface water results were compared to benchmark values for molybdenum (0.01 milligrams per liter [mg/L]) and uranium (0.012 mg/L) derived from historical data at surface water location 0794, which is on the Little Wind River upstream of the site and represents background conditions (see sample location map). Molybdenum and uranium concentrations from Little Wind River locations 0796, 0811, and 0812 were below their respective benchmark value, which indicates minimal site-related impact on the water quality of the Little Wind River. In addition,

Mr. Don Aragon

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molybdenum and uranium concentrations from surface water locations 0810 (constructed wetlands), 0822 (west side irrigation ditch), and 0823 (gravel pit pond) were below their respective benchmark values, which indicate minimal site-related impact to these surface water features.

The benchmark value for uranium was exceeded in the sample collected from the Oxbow Lake (location 0747). The Oxbow Lake receives discharge of contaminated ground water and elevated concentrations are expected. The sample collected at the ditch that discharges from the Peak Sulfur plant (0749) had elevated concentrations of sulfate (2,250 mg/L). The elevated sulfate concentration from the Peak Sulfur ditch has affected the sulfate concentration downstream in the west side irrigation ditch (901 mg/L at location 0822).

Water level data collected from this event show that the ground water in the surficial aquifer at the Riverton site continues to flow to the southeast.

Should you have any questions, please contact me at (970) 248-6197.

Sincerely,


Tracy B. Plessinger
Site Manager

Enclosure

cc w/enclosure:

J. Aram, Ziontz, Chestnut, Varnell, Berley, and Slonim
B. Crocker, Baldwin and Crocker
J. Erickson, Department of Environmental Quality/Wyoming
J. Redman, Northern Arapaho Utility Organization
W. Von Till, Nuclear Regulatory Commission
Riverton Branch Library

cc w/o enclosure:

S. Campbell, Stoller
Project File RVT 410.02 (D. Roberts)

tbp/riverton/rivdvp2.doc

Data Validation Package

October 2005
Riverton, Wyoming, Processing Site
Data Validation Package

January 2006



U.S. Department of Energy
Office of Legacy Management

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Sampling Event Summary

Site: Riverton, Wyoming, Processing Site

Sampling Period: October 10-13, 2005

The *Long-Term Management Plan (LTMP) for the Riverton, Wyoming, Processing Site* (in progress) requires semiannual monitoring to evaluate contaminant plume movement and assess the progress of the natural flushing compliance strategy. This event involved sampling 16 monitor wells, 9 surface water locations, and 9 domestic wells at the Riverton, Wyoming, Processing Site. Water levels were measured at all sampled monitor wells and 22 additional monitor wells that were not sampled; water level data also was downloaded from data loggers at four monitor wells. Sampling and analysis was conducted as specified in LTMP and the *Ground Water and Surface Water Sampling and Analysis Plan for the U. S. Department of Energy Office of Legacy Management Sites* (April 2005).

Results from this sampling event do not indicate any unexpected movement of contaminated ground water. Concentrations of molybdenum and uranium in samples collected from semi-confined aquifer monitor wells and confined aquifer domestic wells were below their respective Uranium Mill Tailings Remedial Action (UMTRA) ground water standard. Although concentrations of molybdenum and uranium in the surficial aquifer currently exceed their respective UMTRA ground water standard, concentrations continue to trend downward as shown in the time versus concentration graphs, which are included in the Data Presentation section. Ground water modeling predicts that natural flushing of the surficial aquifer will reduce concentrations below standards within 100 years. U.S. The UMTRA ground water standards for molybdenum and uranium were exceeded in samples collected from surficial aquifer monitor wells listed in Table 1.

Surface water results were compared to benchmark values for molybdenum (0.01 milligrams per liter [mg/L]) and uranium (0.012 mg/L) derived from historical data at surface water location 0794, which is on the Little Wind River upstream of the site and represents background conditions (see sample location map). Molybdenum and uranium concentrations from Little Wind River locations 0796, 0811, and 0812 were below their respective benchmark values, which indicate minimal site-related impact on the water quality of the Little Wind River. In addition, molybdenum and uranium concentrations from surface water locations 0810 (constructed wetlands), 0822 (west side irrigation ditch), and 0823 (gravel pit pond) were below their respective benchmark values, which indicate minimal site-related impact to these surface water features.

The benchmark values for molybdenum and uranium were exceeded in the samples collected from the Oxbow Lake (location 0747). Oxbow Lake receives discharge of contaminated ground water and elevated concentrations are expected. The sample collected at the ditch that discharges from the Peak Sulfur plant (0749) had elevated concentrations of sulfate (2,250 mg/L).

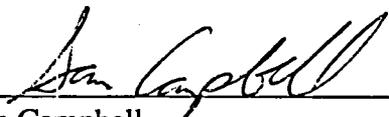
The elevated sulfate concentration from the Peak Sulfur ditch has affected the sulfate concentration downstream in the west side irrigation ditch (901 mg/L at location 0822).

Water level data collected from this event show that the ground water in the surficial aquifer at the Riverton site continues to flow to the southeast (see figure in the static water level data section).

Table 1. Riverton Wells with Samples that Exceeded UMTRA Groundwater Standards in June 2005

Analyte	Standard ^a	Location	Concentration
Molybdenum	0.1	0707	0.745
		0716	0.163
		0718	0.134
Uranium	0.044	0707	0.808
		0716	0.308
		0718	0.256

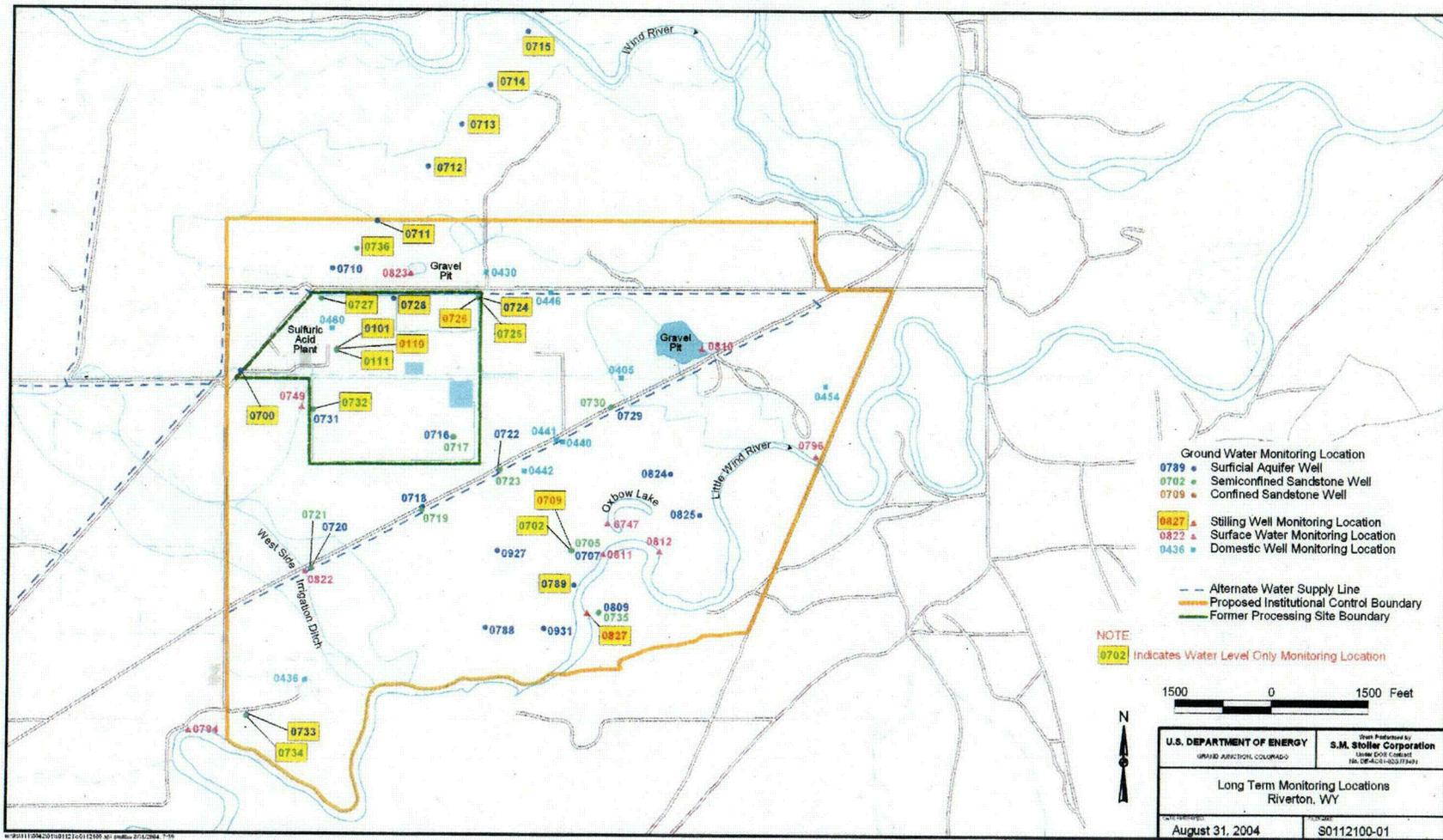
^a Standards are listed in 40 CFR 192.02 Table 1 to Subpart A; concentrations are in mg/L.



Sam Campbell
Site Lead, S.M. Stoller

1-24-06

Date



Sample Locations, Riverton, Wyoming, Processing Site

001

Data Assessment Summary

Water Sampling Field Activities Verification Checklist

Project	<u>Riverton, Wyoming</u>	Date(s) of Water Sampling	<u>October 10-13, 2005</u>
Date(s) of Verification	<u>December 27, 2005</u>	Name of Verifier	<u>Steve Donivari</u>

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures? List other documents, SOP's, instructions.	Yes	Work Order Letter dated September 14, 2005
	No	Monitor wells 0824 and 0825 are proposed locations that have not been installed yet. Domestic wells 0440 and 0441 (Westlake residence) were not sampled because owner permission was not obtained. Monitor well 0722, which was located in the highway right-of-way, was hit by heavy equipment and destroyed.
2. Were the sampling locations specified in the planning documents sampled?		
3. Was a pre-trip calibration conducted as specified in the above named documents?	Yes	
4. Was an operational check of the field equipment conducted twice daily? Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, Ec, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the Category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well: Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4 hour delay between pump installation and sampling?	NA	

Water Sampling Field Activities Verification Checklist (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	
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number?	Yes	
Was the true identity of the samples recorded on the Quality Assurance Sample Log?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members?	Yes	
18. Was all other pertinent information documented on the field data sheets?	Yes	
19. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment

General Information

Report Number (RIN): 05100235
Sample Event: October 10-13, 2005
Site(s): Riverton, Wyoming
Laboratory: General Engineering Laboratories
Work Order No.: 148119, 148123
Analysis: Metals and Radiochemistry
Validator: Steve Donovan
Review Date: December 27, 2005

This validation was performed according to the *Environmental Procedures Catalog* (STO 6), "Standard Practice for Validation of Laboratory Data," GT-9(P) (2004). 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 2.

Table 2. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Manganese, Mn	GJO-17	SW-846 3005A	SW-846 6020A
Molybdenum, Mo	GJO-15	SW-846 3005A	SW-846 6020A
Radium-226	ASP-A-016	EPA 903.1(m)	EPA 903.1(m)
Radium-228	GPC-A-020	EPA 904.0 (m)	EPA 904.0 (m)
Sulfate, SO ₄	MIS-A-044	SW-846 9056	SW-846 9056
Uranium, U	GJO-01	SW-846 3005A	SW-846 6020A

Data Qualifier Summary

Analytical results were qualified as listed in Table 3. Refer to the sections below for an explanation of the data qualifiers applied.

Table 3. Data Qualifier Summary

Sample Number	Location	Analyte(s)	Flag	Reason
148119020	0822	Ra-226	J	Less than 3 times the MDC

Sample Shipping/Receiving

General Engineering Laboratories in Charleston, South Carolina, received 38 water samples on October 18, 2005, accompanied by a Chain of Custody (COC) form. The COC form was checked to confirm that all of the samples were listed on the form with sample collection dates and times, and that signatures and dates were present indicating sample relinquishment and receipt. The

sample submittal documents including the COC form, the Sample Submittal form, and the sample tickets had no errors or omissions.

Preservation and Holding Times

The sample shipment was received cool and intact with the temperature within the iced cooler of 3.0 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses and all samples were analyzed within the applicable holding times.

Laboratory Instrument Calibration

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for all analytes. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear curve. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed correctly in accordance with the cited methods.

Method SW-846 6020A

Calibrations for manganese, molybdenum, and uranium were performed on October 28, 2005. The initial calibrations were performed using two calibration standards resulting in calibration curves where the absolute values of the curve intercepts were less than three times the method detection limit (MDL). Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks (CCVs) were made at the required frequency resulting in eight CCVs. All initial and continuing calibration verification results were within the acceptance range. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curves near the practical quantitation limit with the results within the acceptance range. The mass calibration and resolution was checked at the beginning of each analytical run in accordance with the procedure. Internal standard recoveries were stable and within acceptance ranges.

Method SW-846 9056

Initial calibrations were performed for sulfate using six calibration standards on October 3, 2005, and October 25, 2005. The calibration curve r^2 values were greater than 0.995 and intercepts less than three times the MDL. Initial calibration and calibration check standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 15 CCVs. 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 three 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 two sigma total propagated uncertainty (TPU).

Radium-226

Emanation cell efficiency calibrations were performed on September 23, 2005. Daily efficiency calibration and background checks were performed on October 28, 2005. All calibration data met the acceptance criteria. All chemical tracer recoveries were within the acceptance criteria.

Radium-228

Detector efficiency calibrations were performed on April 22, 2005. Daily efficiency calibration and background checks were performed on November 3, 2005. All calibration data met the acceptance criteria. All chemical tracer recoveries were within the acceptance criteria.

Method and Calibration Blanks

All method, initial, and continuing calibration blank results were below the practical quantitation limits for manganese, molybdenum, sulfate, and uranium. In cases where blank concentration exceeded the instrument detection limit, the associated sample results are qualified with a "U" flag (not detected) when the sample result is greater than the MDL but less than five times the blank concentration.

The radium-226 and radium-228 method blank results were below the minimum detectable concentration.

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 met the acceptance criteria.

Matrix Spike Analysis

Matrix spike and matrix spike duplicate samples (MS/MSD) were analyzed for manganese, molybdenum, sulfate, and uranium as a measure of method performance in the sample matrix. The MS/MSD analyses resulted in acceptable recovery and precision for all analytes.

Laboratory Replicate Analysis

The laboratory replicate sample results demonstrate acceptable laboratory precision. The relative percent difference (RPD) values for the laboratory replicate samples and matrix spike duplicate sample results for non-radiochemical analytes were less than 20 percent. The radiochemical relative error ratio for all laboratory replicate samples was less than three.

Laboratory Control Sample

Laboratory control samples (LCS) were analyzed at the correct frequency to provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. The LCS results were acceptable for all analysis categories.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for manganese, molybdenum, and uranium to monitor chemical or physical interferences in the sample matrix. The serial dilution results for manganese and molybdenum were not evaluated because the concentration of the undiluted sample was less than 100 times the method detection limit. All of the serial dilution results met the acceptance criteria.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of uranium to reduce interferences. The required detection limits were 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 revised EDD file arrived on November 16, 2005, and the data loaded into SEEPro on December 3, 2005. 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 all and only the requested data are 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.

General Data Validation Worksheet

RIN: 05100235 Lab Code: GEN Validator: Steve Donovan Validation Date: 12/27/2005
 Site: RIVERTON Analysis Type: Metals General Chem Rad Organics
 # of Samples: 38 Matrix: WATER Requested Analysis Completed: Yes

Chain of Custody
 Present: OK Signed: OK Dated: OK

Sample
 Integrity: OK Preservation: OK Temperature: OK

Exceptions

Method	Analyte	Location	Ticket	Collection Date	Preparation Date	Analysis Date	Dilution Factor	Holding Time Met	Detection Limit Met
EPA 904 0 Modified	Radium-228	0822	NDV 635	10/11/2005		11/03/2005	1	Yes	No

Comments: _____
 All samples were analyzed within the applicable holding times.

**GRAND JUNCTION SITE
Inorganics Data Validation Worksheet**

RIN: 05100235 Lab Code: GEN Date Due: 11/15/2005
 Matrix: Water Site Code: RVT Date Completed: 11/15/2005

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R ²	ICV	CCV	ICB	CCB						
Sulfate	10/03/2005	0	0.9998	OK	OK	OK	OK						
Sulfate	10/21/2005				OK		OK	100.0					
Sulfate	10/26/2005	0	0.9989	OK	OK	OK	OK	96.0	97.0		1.00		
Sulfate	10/28/2005				OK		OK		100.0	102.0	1.00		

Comments: _____

GRAND JUNCTION SITE Metals Data Validation Worksheet

RIN: 05100235 Lab Code: GEN Date Due: 11/15/2005
 Matrix: Water Site Code: RVT Date Completed: 11/15/2005

Analyte	Date Analyzed	CALIBRATION						Method	LCS %R	MS %R	MSD %R	MS/MSD RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R ²	ICV	CCV	ICB	CCB								
Manganese	10/28/2005			OK	OK	OK	OK	112.0	96.2		0.2	100.0	11.3	105.0	
Manganese	10/28/2005			OK	OK	OK	OK	97.9	98.7		0.6	94.6			
Molybdenum	10/28/2005			OK	OK	OK	OK	111.0	108.0		2.1	109.0	14.9	95.4	
Molybdenum	10/28/2005			OK	OK	OK	OK	101.0	107.0		0.3	101.0			
Uranium	10/28/2005			OK	OK	OK	OK	118.0	110.0		1.1	104.0	7.0	108.0	
Uranium	10/28/2005			OK	OK	OK	OK	98.4	98.5			87.6			

Comments: _____

GRAND JUNCTION SITE
Radiochemistry Data Validation Worksheet

RIN: 05100235 Lab Code: GEN Date Due: 11/15/2005
Matrix: Water Site Code: RVT Date Completed: 11/15/2005

Sample	Analyte	Date Analyzed	Result	Flag	Tracer %R	LCS %R	MS %R	Duplicate
0822	Radium-228	11/03/2005			83.0			
LCS	Radium-226	10/28/2005				96.0		
LCS	Radium-228	11/03/2005			79.3	103.0		
MS	Radium-226	10/28/2005				89.0		
MS	Radium-228	11/03/2005			87.8	103.0	93.0	

Comments: _____

Sampling Quality Control Assessment

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

Sampling Protocol

Results from all monitor wells were qualified with an "F" flag in the database indicating that the wells were purged and sampled using the low-flow method.

The drawdown specification in the low-flow procedure was not obtained at wells 0705, 0719, 0730, and 0731 because of the low yield of these wells. Therefore, results from these wells were qualified with a "Q" flag in the database indicating that the data is qualitative because of the sampling technique.

Equipment Blank Assessment

Two equipment blanks were collected for the locations sampled using non-dedicated equipment. The equipment blanks were analyzed for the same constituents as the Riverton environmental samples. Analyte concentrations in the equipment blanks were below their respective detection limits (or required detection limit for one molybdenum result) and are acceptable.

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. Duplicate samples were collected from wells 0716 and 0747. The duplicate results from location 0716 met the EPA recommended laboratory duplicate criteria of having a relative percent difference (RPD) of less than 20 percent for results that are greater than five times the practical quantitation limit and are acceptable. The duplicate sample from location 0747 was collected and submitted unfiltered to compare filtered and unfiltered results. The RPD values for this location were less than 20 percent for molybdenum, sulfate, and uranium and 23 percent for manganese.

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 1-24-06
Steve Donivan Date

Data Validation Lead: Steve Donivan 1-24-06
Steve Donivan Date

Attachment 1
Assessment of Anomalous Data

Minimums and Maximums Report

Minimums and Maximums Report

The Minimums and Maximums Report is generated by a data validation application (DataVal) used to query the SEEPro database. DataVal compares the new data set with historical data and lists all new data that fall outside the historical data range. Values listed in the report are further screened and the results are considered valid if:

- (1) Identified low concentrations are the result of low detection limits.
- (2) The concentration detected is within 50 percent of historical minimum or maximum values.
- (3) There were fewer than five historical samples for comparison.

There were no results listed on the Minimums and Maximums Report that did not meet these criteria.

The manganese concentration at location 0788 that had been previously noted as anomalously high returned to values between the historical low and high values.

Data Validation Minimums and Maximums Report - No Field Parameters

Laboratory: GENERAL ENGINEERING (Charleston, SC)

RIN: 05100235

Comparison: History Begin Date: 1/1/1995

Report Date: 12/27/2005

Site Code	Location Code	Sample Date	Analyte	Current Qualifiers			Historical Maximum Qualifiers			Historical Minimum Qualifiers			Count	
				Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect
RVT01	0707	10/13/2005	Manganese	1.49		F	4.05			1.5		F	12	0
RVT01	0707	10/13/2005	Uranium	0.808		F	1.97			0.809		F	12	0
RVT01	0710	10/12/2005	Sulfate	62.4		F	830			77		F	12	0
RVT01	0716	10/12/2005	Molybdenum	0.163		F	0.217			0.17		F	12	0
RVT01	0716	10/12/2005	Molybdenum	0.16		F	0.217			0.17		F	12	0
RVT01	0717	10/12/2005	Molybdenum	0.0062		F	0.0106	N	J	0.0068		F	11	1
RVT01	0717	10/12/2005	Sulfate	666		F	773		F	692			11	0
RVT01	0718	10/13/2005	Manganese	1.26		F	3.18			1.29		F	11	0
RVT01	0729	10/13/2005	Sulfate	71.3		F	248			86		F	6	0
RVT01	0729	10/13/2005	Uranium	0.007		F	0.0186			0.0073		F	6	0
RVT01	0731	10/12/2005	Molybdenum	0.0453		FQ	0.12		FJ	0.0477			13	0
RVT01	0788	10/13/2005	Sulfate	761		F	1890	I		850		F	6	0
RVT01	0788	10/13/2005	Uranium	0.0372		F	0.064			0.041		F	6	0

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.		

Attachment 2
Data Presentation

Ground Water Quality Data

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0405 (WELL)

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	-	29			#		
Manganese	mg/L	10/11/2005	N001	-	0.0035	B		#	0.001	
Molybdenum	mg/L	10/11/2005	N001	-	0.0049			#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	-	90.9			#		
pH	s.u.	10/11/2005	N001	-	9.23			#		
Specific Conductance	umhos /cm	10/11/2005	N001	-	937			#		
Sulfate	mg/L	10/11/2005	N001	-	339			#	1.43	
Temperature	C	10/11/2005	N001	-	11.22			#		
Turbidity	NTU	10/11/2005	N001	-	3.12			#		
Uranium	mg/L	10/11/2005	N001	-	0.00005	U		#	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0422 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	-	135			#		
Manganese	mg/L	10/11/2005	N001	-	0.0024	B		#	0.001	
Molybdenum	mg/L	10/11/2005	N001	-	0.0018			#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	-	122			#		
pH	s.u.	10/11/2005	N001	-	7.76			#		
Specific Conductance	umhos/cm	10/11/2005	N001	-	397			#		
Sulfate	mg/L	10/11/2005	N001	-	61.4			#	0.114	
Temperature	C	10/11/2005	N001	-	24.58			#		
Turbidity	NTU	10/11/2005	N001	-	1.13			#		
Uranium	mg/L	10/11/2005	N001	-	0.0021			#	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0430 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	-	169		#		
Manganese	mg/L	10/11/2005	N001	-	0.0081		#	0.001	
Molybdenum	mg/L	10/11/2005	N001	-	0.0024		#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	-	153		#		
pH	s.u.	10/11/2005	N001	-	8.79		#		
Specific Conductance	umhos/cm	10/11/2005	N001	-	735		#		
Sulfate	mg/L	10/11/2005	N001	-	184		#	0.57	
Temperature	C	10/11/2005	N001	-	16.24		#		
Turbidity	NTU	10/11/2005	N001	-	2.19		#		
Uranium	mg/L	10/11/2005	N001	-	0.00005	U	#	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0436 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	-	157			#		
Manganese	mg/L	10/11/2005	N001	-	0.0075			#	0.001	
Molybdenum	mg/L	10/11/2005	N001	-	0.004			#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	-	65.1			#		
pH	s.u.	10/11/2005	N001	-	8.81			#		
Specific Conductance	umhos /cm	10/11/2005	N001	-	825			#		
Sulfate	mg/L	10/11/2005	N001	-	216			#	1.14	
Temperature	C	10/11/2005	N001	-	15.7			#		
Turbidity	NTU	10/11/2005	N001	-	3.39			#		
Uranium	mg/L	10/11/2005	N001	-	0.00015	B		#	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 1/20/2006
 Location: 0446 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID			Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/10/2005	N001	370 - 410	163		#		
Manganese	mg/L	10/10/2005	N001	370 - 410	0.005	U	#	.005	
Molybdenum	mg/L	10/10/2005	N001	370 - 410	0.0025		#	.0005	
Oxidation Reduction Potential	mV	10/10/2005	N001	370 - 410	162.4		#		
pH	s.u.	10/10/2005	N001	370 - 410	8.42		#		
Specific Conductance	umhos /cm	10/10/2005	N001	370 - 410	643		#		
Sulfate	mg/L	10/10/2005	N001	370 - 410	136		#	.57	
Temperature	C	10/10/2005	N001	370 - 410	13.28		#		
Turbidity	NTU	10/10/2005	N001	370 - 410	1.8		#		
Uranium	mg/L	10/10/2005	N001	370 - 410	0.00025	U	#	.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 12/27/2005

Location: 0454 (WELL) 2 Businesses @this location - 789 Truck Stop, P.O. Box 827, Riverton, WY 82501; 789 Bingo and Casino, P.O.Box 1989, Riverton, WY 82501

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	-	135			#		
Manganese	mg/L	10/11/2005	N001	-	0.0051	B		#	0.005	
Molybdenum	mg/L	10/11/2005	N001	-	0.0016	B		#	0.0005	
Oxidation Reduction Potential	mV	10/11/2005	N001	-	152			#		
pH	s.u.	10/11/2005	N001	-	8.59			#		
Specific Conductance	umhos /cm	10/11/2005	N001	-	1224			#		
Sulfate	mg/L	10/11/2005	N001	-	441			#	1.43	
Temperature	C	10/11/2005	N001	-	12.64			#		
Turbidity	NTU	10/11/2005	N001	-	1.05			#		
Uranium	mg/L	10/11/2005	N001	-	0.00025	U		#	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0460 (WELL) Koch Sulfuric Acid Plant

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	-	174			#		
Manganese	mg/L	10/11/2005	N001	-	0.0114	B		#	0.005	
Molybdenum	mg/L	10/11/2005	N001	-	0.0024	B		#	0.0005	
Oxidation Reduction Potential	mV	10/11/2005	N001	-	133.4			#		
pH	s.u.	10/11/2005	N001	-	8.84			#		
Specific Conductance	umhos /cm	10/11/2005	N001	-	679			#		
Sulfate	mg/L	10/11/2005	N001	-	156			#	0.57	
Temperature	C	10/11/2005	N001	-	19.42			#		
Turbidity	NTU	10/11/2005	N001	-	3.71			#		
Uranium	mg/L	10/11/2005	N001	-	0.00025	U		#	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 12/27/2005

Location: 0705 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	N001	37.3 - 61.8	58		FQ #		
Manganese	mg/L	10/13/2005	N001	37.3 - 61.8	0.005	U	FQ #	0.005	
Molybdenum	mg/L	10/13/2005	N001	37.3 - 61.8	0.0027		FQ #	0.0005	
Oxidation Reduction Potential	mV	10/13/2005	N001	37.3 - 61.8	83.7		FQ #		
pH	s.u.	10/13/2005	N001	37.3 - 61.8	8.42		FQ #		
Specific Conductance	umhos/cm	10/13/2005	N001	37.3 - 61.8	1202		FQ #		
Sulfate	mg/L	10/13/2005	N001	37.3 - 61.8	422		FQ #	2.28	
Temperature	C	10/13/2005	N001	37.3 - 61.8	9.86		FQ #		
Turbidity	NTU	10/13/2005	N001	37.3 - 61.8	0.96		FQ #		
Uranium	mg/L	10/13/2005	N001	37.3 - 61.8	0.00025	U	FQ #	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0707 (WELL)

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	N001	9.1 - 23.3	333		F	#		
Manganese	mg/L	10/13/2005	N001	9.1 - 23.3	1.49		F	#	0.005	
Molybdenum	mg/L	10/13/2005	N001	9.1 - 23.3	0.745		F	#	0.0005	
Oxidation Reduction Potential	mV	10/13/2005	N001	9.1 - 23.3	94		F	#		
pH	s.u.	10/13/2005	N001	9.1 - 23.3	7.01		F	#		
Specific Conductance	umhos /cm	10/13/2005	N001	9.1 - 23.3	4091		F	#		
Sulfate	mg/L	10/13/2005	N001	9.1 - 23.3	2210		F	#	5.7	
Temperature	C	10/13/2005	N001	9.1 - 23.3	12.13		F	#		
Turbidity	NTU	10/13/2005	N001	9.1 - 23.3	0.92		F	#		
Uranium	mg/L	10/13/2005	N001	9.1 - 23.3	0.808		F	#	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0710 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/12/2005	N001	9.8 - 26.8	170		F #		
Manganese	mg/L	10/12/2005	N001	9.8 - 26.8	0.0183		F #	0.001	
Molybdenum	mg/L	10/12/2005	N001	9.8 - 26.8	0.002		F #	0.0001	
Oxidation Reduction Potential	mV	10/12/2005	N001	9.8 - 26.8	131		F #		
pH	s.u.	10/12/2005	N001	9.8 - 26.8	7.59		F #		
Specific Conductance	umhos/cm	10/12/2005	N001	9.8 - 26.8	434		F #		
Sulfate	mg/L	10/12/2005	N001	9.8 - 26.8	62.4		F #	0.114	
Temperature	C	10/12/2005	N001	9.8 - 26.8	11.24		F #		
Turbidity	NTU	10/12/2005	N001	9.8 - 26.8	0.89		F #		
Uranium	mg/L	10/12/2005	N001	9.8 - 26.8	0.0025		F #	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0716 (WELL)

Parameter	Units	Sample		Depth Range (F/BLS)	Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID			Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/12/2005	N001	9.78 - 14.78	289		F #		
Manganese	mg/L	10/12/2005	N001	9.78 - 14.78	0.598		F #	0.005	
Manganese	mg/L	10/12/2005	N002	9.78 - 14.78	0.605		F #	0.005	
Molybdenum	mg/L	10/12/2005	N001	9.78 - 14.78	0.16		F #	0.0005	
Molybdenum	mg/L	10/12/2005	N002	9.78 - 14.78	0.163		F #	0.0005	
Oxidation Reduction Potential	mV	10/12/2005	N001	9.78 - 14.78	47		F #		
pH	s.u.	10/12/2005	N001	9.78 - 14.78	7.15		F #		
Specific Conductance	umhos/cm	10/12/2005	N001	9.78 - 14.78	1405		F #		
Sulfate	mg/L	10/12/2005	N001	9.78 - 14.78	466		F #	1.14	
Sulfate	mg/L	10/12/2005	N002	9.78 - 14.78	457		F #	1.43	
Temperature	C	10/12/2005	N001	9.78 - 14.78	14.6		F #		
Turbidity	NTU	10/12/2005	N001	9.78 - 14.78	2.68		F #		
Uranium	mg/L	10/12/2005	N001	9.78 - 14.78	0.3		F #	0.00025	
Uranium	mg/L	10/12/2005	N002	9.78 - 14.78	0.308		F #	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0717 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/12/2005	N001	45.1 - 55.1	112		F #		
Manganese	mg/L	10/12/2005	N001	45.1 - 55.1	0.161		F #	0.005	
Molybdenum	mg/L	10/12/2005	N001	45.1 - 55.1	0.0062		F #	0.0005	
Oxidation Reduction Potential	mV	10/12/2005	N001	45.1 - 55.1	-138		F #		
pH	s.u.	10/12/2005	N001	45.1 - 55.1	7.79		F #		
Specific Conductance	umhos/cm	10/12/2005	N001	45.1 - 55.1	1823		F #		
Sulfate	mg/L	10/12/2005	N001	45.1 - 55.1	666		F #	2.85	
Temperature	C	10/12/2005	N001	45.1 - 55.1	12.3		F #		
Turbidity	NTU	10/12/2005	N001	45.1 - 55.1	4.17		F #		
Uranium	mg/L	10/12/2005	N001	45.1 - 55.1	0.00025	U	F #	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 12/27/2005

Location: 0718 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	N001	18.24 - 23.24	384		F #		
Manganese	mg/L	10/13/2005	N001	18.24 - 23.24	1.26		F #	0.001	
Molybdenum	mg/L	10/13/2005	N001	18.24 - 23.24	0.134		F #	0.0001	
Oxidation Reduction Potential	mV	10/13/2005	N001	18.24 - 23.24	-62		F #		
pH	s.u.	10/13/2005	N001	18.24 - 23.24	7.08		F #		
Specific Conductance	umhos/cm	10/13/2005	N001	18.24 - 23.24	4208		F #		
Sulfate	mg/L	10/13/2005	N001	18.24 - 23.24	2060		F #	28.5	
Temperature	C	10/13/2005	N001	18.24 - 23.24	15.23		F #		
Turbidity	NTU	10/13/2005	N001	18.24 - 23.24	1.74		F #		
Uranium	mg/L	10/13/2005	N001	18.24 - 23.24	0.256		F #	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0719 (WELL)

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	N001	38.47 - 48.47	122		FQ	#		
Manganese	mg/L	10/13/2005	N001	38.47 - 48.47	0.171		FQ	#	0.001	
Molybdenum	mg/L	10/13/2005	N001	38.47 - 48.47	0.0131		FQ	#	0.0001	
Oxidation Reduction Potential	mV	10/13/2005	N001	38.47 - 48.47	-227		FQ	#		
pH	s.u.	10/13/2005	N001	38.47 - 48.47	7.65		FQ	#		
Specific Conductance	umhos /cm	10/13/2005	N001	38.47 - 48.47	1108		FQ	#		
Sulfate	mg/L	10/13/2005	N001	38.47 - 48.47	397		FQ	#	5.7	
Temperature	C	10/13/2005	N001	38.47 - 48.47	14.21		FQ	#		
Turbidity	NTU	10/13/2005	N001	38.47 - 48.47	6.21		FQ	#		
Uranium	mg/L	10/13/2005	N001	38.47 - 48.47	0.00087		FQ	#	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0720 (WELL)

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID			Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	7.94 - 12.94	209	F	#		
Manganese	mg/L	10/11/2005	N001	7.94 - 12.94	0.0058	F	#	0.001	
Molybdenum	mg/L	10/11/2005	N001	7.94 - 12.94	0.002	F	#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	7.94 - 12.94	149	F	#		
pH	s.u.	10/11/2005	N001	7.94 - 12.94	7.37	F	#		
Specific Conductance	umhos /cm	10/11/2005	N001	7.94 - 12.94	590	F	#		
Sulfate	mg/L	10/11/2005	N001	7.94 - 12.94	105	F	#	0.285	
Temperature	C	10/11/2005	N001	7.94 - 12.94	14.19	F	#		
Turbidity	NTU	10/11/2005	N001	7.94 - 12.94	0.67	F	#		
Uranium	mg/L	10/11/2005	N001	7.94 - 12.94	0.0041	F	#	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 12/27/2005

Location: 0721 (WELL)

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	44.43 - 54.43	97		F	#		
Manganese	mg/L	10/11/2005	N001	44.43 - 54.43	0.0031	B	F	#	0.001	
Molybdenum	mg/L	10/11/2005	N001	44.43 - 54.43	0.0028		F	#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	44.43 - 54.43	-59		F	#		
pH	s.u.	10/11/2005	N001	44.43 - 54.43	8.85		F	#		
Specific Conductance	umhos /cm	10/11/2005	N001	44.43 - 54.43	853		F	#		
Sulfate	mg/L	10/11/2005	N001	44.43 - 54.43	265		F	#	1.14	
Temperature	C	10/11/2005	N001	44.43 - 54.43	11.99		F	#		
Turbidity	NTU	10/11/2005	N001	44.43 - 54.43	0.82		F	#		
Uranium	mg/L	10/11/2005	N001	44.43 - 54.43	0.000096	B	F	#	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0723 (WELL)

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	N001	45.99 - 55.99	403		F	#		
Manganese	mg/L	10/13/2005	N001	45.99 - 55.99	0.611		F	#	0.001	
Molybdenum	mg/L	10/13/2005	N001	45.99 - 55.99	0.00035	B	F	#	0.0001	
Oxidation Reduction Potential	mV	10/13/2005	N001	45.99 - 55.99	-111		F	#		
pH	s.u.	10/13/2005	N001	45.99 - 55.99	7.02		F	#		
Specific Conductance	umhos /cm	10/13/2005	N001	45.99 - 55.99	3987		F	#		
Sulfate	mg/L	10/13/2005	N001	45.99 - 55.99	1940		F	#	28.5	
Temperature	C	10/13/2005	N001	45.99 - 55.99	14.39		F	#		
Turbidity	NTU	10/13/2005	N001	45.99 - 55.99	2.55		F	#		
Uranium	mg/L	10/13/2005	N001	45.99 - 55.99	0.00012	B	F	#	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0729 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	N001	14.71 - 19.71	291		F #		
Manganese	mg/L	10/13/2005	N001	14.71 - 19.71	0.005	U	F #	0.005	
Molybdenum	mg/L	10/13/2005	N001	14.71 - 19.71	0.0037		F #	0.0005	
Oxidation Reduction Potential	mV	10/13/2005	N001	14.71 - 19.71	5		F #		
pH	s.u.	10/13/2005	N001	14.71 - 19.71	7.16		F #		
Specific Conductance	umhos/cm	10/13/2005	N001	14.71 - 19.71	680		F #		
Sulfate	mg/L	10/13/2005	N001	14.71 - 19.71	71.3		F #	0.285	
Temperature	C	10/13/2005	N001	14.71 - 19.71	15.7		F #		
Turbidity	NTU	10/13/2005	N001	14.71 - 19.71	2.78		F #		
Uranium	mg/L	10/13/2005	N001	14.71 - 19.71	0.007		F #	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0730 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	N001	38.62 - 48.62	256		FQ	#		
Manganese	mg/L	10/13/2005	N001	38.62 - 48.62	0.0822		FQ	#	0.001	
Molybdenum	mg/L	10/13/2005	N001	38.62 - 48.62	0.003		FQ	#	0.0001	
Oxidation Reduction Potential	mV	10/13/2005	N001	38.62 - 48.62	-177		FQ	#		
pH	s.u.	10/13/2005	N001	38.62 - 48.62	7.46		FQ	#		
Specific Conductance	umhos/cm	10/13/2005	N001	38.62 - 48.62	966		FQ	#		
Sulfate	mg/L	10/13/2005	N001	38.62 - 48.62	188		FQ	#	2.85	
Temperature	C	10/13/2005	N001	38.62 - 48.62	14.42		FQ	#		
Turbidity	NTU	10/13/2005	N001	38.62 - 48.62	3.92		FQ	#		
Uranium	mg/L	10/13/2005	N001	38.62 - 48.62	0.0075		FQ	#	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0731 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/12/2005	N001	2 - 11.4	634		FQ #		
Manganese	mg/L	10/12/2005	N001	2 - 11.4	0.247		FQ #	0.005	
Molybdenum	mg/L	10/12/2005	N001	2 - 11.4	0.0453		FQ #	0.0005	
Oxidation Reduction Potential	mV	10/12/2005	N001	2 - 11.4	115		FQ #		
pH	s.u.	10/12/2005	N001	2 - 11.4	8.08		FQ #		
Specific Conductance	umhos/cm	10/12/2005	N001	2 - 11.4	4812		FQ #		
Sulfate	mg/L	10/12/2005	N001	2 - 11.4	2040		FQ #	5.7	
Temperature	C	10/12/2005	N001	2 - 11.4	14.26		FQ #		
Turbidity	NTU	10/12/2005	N001	2 - 11.4	2.48		FQ #		
Uranium	mg/L	10/12/2005	N001	2 - 11.4	0.0051		FQ #	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0735 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft)		Result	Qualifiers			Detection Limit	Uncertainty
				BLS			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/12/2005	N001	-4906.66	-4891.66	60		F	#		
Manganese	mg/L	10/12/2005	N001	-4906.66	-4891.66	0.0216	B	F	#	0.005	
Molybdenum	mg/L	10/12/2005	N001	-4906.66	-4891.66	0.0025	B	F	#	0.0005	
Oxidation Reduction Potential	mV	10/12/2005	N001	-4906.66	-4891.66	89		F	#		
pH	s.u.	10/12/2005	N001	-4906.66	-4891.66	7.73		F	#		
Specific Conductance	umhos/cm	10/12/2005	N001	-4906.66	-4891.66	1480		F	#		
Sulfate	mg/L	10/12/2005	N001	-4906.66	-4891.66	545		F	#	2.28	
Temperature	C	10/12/2005	N001	-4906.66	-4891.66	16.46		F	#		
Turbidity	NTU	10/12/2005	N001	-4906.66	-4891.66	1.18		F	#		
Uranium	mg/L	10/12/2005	N001	-4906.66	-4891.66	0.00057	B	F	#	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0788 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	N001	1.41 - 13.41	376		F #		
Manganese	mg/L	10/13/2005	N001	1.41 - 13.41	0.357		F #	0.005	
Molybdenum	mg/L	10/13/2005	N001	1.41 - 13.41	0.032		F #	0.0005	
Oxidation Reduction Potential	mV	10/13/2005	N001	1.41 - 13.41	42		F #		
pH	s.u.	10/13/2005	N001	1.41 - 13.41	7.4		F #		
Specific Conductance	umhos/cm	10/13/2005	N001	1.41 - 13.41	2096		F #		
Sulfate	mg/L	10/13/2005	N001	1.41 - 13.41	761		F #	2.85	
Temperature	C	10/13/2005	N001	1.41 - 13.41	11.66		F #		
Turbidity	NTU	10/13/2005	N001	1.41 - 13.41	1.47		F #		
Uranium	mg/L	10/13/2005	N001	1.41 - 13.41	0.0372		F #	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0809 (WELL)

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/12/2005	N001	10.5 - 19.4	205		F	#		
Manganese	mg/L	10/12/2005	N001	10.5 - 19.4	0.502		F	#	0.005	
Molybdenum	mg/L	10/12/2005	N001	10.5 - 19.4	0.0016	B	F	#	0.0005	
Oxidation Reduction Potential	mV	10/12/2005	N001	10.5 - 19.4	76.4		F	#		
pH	s.u.	10/12/2005	N001	10.5 - 19.4	7.45		F	#		
Specific Conductance	umhos /cm	10/12/2005	N001	10.5 - 19.4	947		F	#		
Sulfate	mg/L	10/12/2005	N001	10.5 - 19.4	312		F	#	1.14	
Temperature	C	10/12/2005	N001	10.5 - 19.4	17.11		F	#		
Turbidity	NTU	10/12/2005	N001	10.5 - 19.4	4.56		F	#		
Uranium	mg/L	10/12/2005	N001	10.5 - 19.4	0.0051		F	#	0.00025	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0828 (WELL)

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	-	146			#		
Manganese	mg/L	10/11/2005	N001	-	0.0049	B		#	0.001	
Molybdenum	mg/L	10/11/2005	N001	-	0.0041			#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	-	116.8			#		
pH	s.u.	10/11/2005	N001	-	8.83			#		
Specific Conductance	umhos/cm	10/11/2005	N001	-	817			#		
Sulfate	mg/L	10/11/2005	N001	-	215			#	1.14	
Temperature	C	10/11/2005	N001	-	15.69			#		
Turbidity	NTU	10/11/2005	N001	-	0.97			#		
Uranium	mg/L	10/11/2005	N001	-	0.00014	B		#	0.00005	

Ground Water Quality Data by Location (USEE100) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0951 (WELL)

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	-	102			#		
Manganese	mg/L	10/11/2005	N001	-	0.0062			#	0.001	
Molybdenum	mg/L	10/11/2005	N001	-	0.0024			#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	-	43			#		
pH	s.u.	10/11/2005	N001	-	8.83			#		
Specific Conductance	umhos /cm	10/11/2005	N001	-	847			#		
Sulfate	mg/L	10/11/2005	N001	-	259			#	1.14	
Temperature	C	10/11/2005	N001	-	12.56			#		
Turbidity	NTU	10/11/2005	N001	-	4.1			#		
Uranium	mg/L	10/11/2005	N001	-	0.00005	U		#	0.00005	

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.

Surface Water Quality Data

Surface Water Quality Data by Location (USEE102) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0747 (surface location)

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	0001	311			#		
Manganese	mg/L	10/13/2005	0001	0.455			#	0.001	
Manganese	mg/L	10/13/2005	N002	0.574			#	0.001	
Molybdenum	mg/L	10/13/2005	0001	0.0233			#	0.0001	
Molybdenum	mg/L	10/13/2005	N002	0.0234			#	0.0001	
Oxidation Reduction Potential	mV	10/13/2005	N001	-14.8			#		
pH	s.u.	10/13/2005	N001	7.62			#		
Specific Conductance	umhos /cm	10/13/2005	N001	1320			#		
Sulfate	mg/L	10/13/2005	0001	422			#	5.7	
Sulfate	mg/L	10/13/2005	N002	424			#	5.7	
Temperature	C	10/13/2005	N001	15.96			#		
Turbidity	NTU	10/13/2005	N001	46.6			#		
Uranium	mg/L	10/13/2005	0001	0.251			#	0.00005	
Uranium	mg/L	10/13/2005	N002	0.25			#	0.00005	

Surface Water Quality Data by Location (USEE102) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0749 (surface location)

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/12/2005	0001	437		#		
Manganese	mg/L	10/12/2005	0001	0.0256		#	0.005	
Molybdenum	mg/L	10/12/2005	0001	0.0121		#	0.0005	
Oxidation Reduction Potential	mV	10/12/2005	N001	131.2		#		
pH	s.u.	10/12/2005	N001	8.21		#		
Specific Conductance	umhos /cm	10/12/2005	N001	4938		#		
Sulfate	mg/L	10/12/2005	0001	2250		#	5.7	
Temperature	C	10/12/2005	N001	17.4		#		
Turbidity	NTU	10/12/2005	N001	20		#		
Uranium	mg/L	10/12/2005	0001	0.00025	U	#	0.00025	

Surface Water Quality Data by Location (USEE102) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0794 (surface location)

Parameter	Units	Sample		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID		Lab	Data QA		
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	176		#		
Manganese	mg/L	10/11/2005	N001	0.0334		#	0.001	
Molybdenum	mg/L	10/11/2005	N001	0.0015		#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	186.3		#		
pH	s.u.	10/11/2005	N001	8.1		#		
Specific Conductance	umhos/cm	10/11/2005	N001	853		#		
Sulfate	mg/L	10/11/2005	N001	274		#	1.14	
Temperature	C	10/11/2005	N001	9.46		#		
Turbidity	NTU	10/11/2005	N001	8.14		#		
Uranium	mg/L	10/11/2005	N001	0.0079		#	0.00005	

Surface Water Quality Data by Location (USEE102) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0796 (surface location)

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	169			#		
Manganese	mg/L	10/11/2005	N001	0.0327			#	0.005	
Molybdenum	mg/L	10/11/2005	N001	0.0014	B		#	0.0005	
Oxidation Reduction Potential	mV	10/11/2005	N001	186			#		
pH	s.u.	10/11/2005	N001	8.4			#		
Specific Conductance	umhos /cm	10/11/2005	N001	1074			#		
Sulfate	mg/L	10/11/2005	N001	268			#	1.14	
Temperature	C	10/11/2005	N001	6.13			#		
Turbidity	NTU	10/11/2005	N001	9.19			#		
Uranium	mg/L	10/11/2005	N001	0.0054			#	0.00025	

Surface Water Quality Data by Location (USEE102) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0810 (surface location)

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	298			#		
Manganese	mg/L	10/11/2005	N001	0.0732			#	0.005	
Molybdenum	mg/L	10/11/2005	N001	0.0021	B		#	0.0005	
Oxidation Reduction Potential	mV	10/11/2005	N001	191			#		
pH	s.u.	10/11/2005	N001	8.8			#		
Specific Conductance	umhos /cm	10/11/2005	N001	1452			#		
Sulfate	mg/L	10/11/2005	N001	376			#	1.43	
Temperature	C	10/11/2005	N001	7.67			#		
Turbidity	NTU	10/11/2005	N001	9.49			#		
Uranium	mg/L	10/11/2005	N001	0.007			#	0.00025	

Surface Water Quality Data by Location (USEE102) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0811 (surface location)

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	N001	76			#		
Manganese	mg/L	10/13/2005	N001	0.0531			#	0.001	
Molybdenum	mg/L	10/13/2005	N001	0.0017			#	0.0001	
Oxidation Reduction Potential	mV	10/13/2005	N001	-47.3			#		
pH	s.u.	10/13/2005	N001	8.59			#		
Specific Conductance	umhos/cm	10/13/2005	N001	907			#		
Sulfate	mg/L	10/13/2005	N001	281			#	2.85	
Temperature	C	10/13/2005	N001	13.27			#		
Turbidity	NTU	10/13/2005	N001	9.4			#		
Uranium	mg/L	10/13/2005	N001	0.007			#	0.00005	

Surface Water Quality Data by Location (USEE102) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0812 (surface location)

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/13/2005	N001	181			#		
Manganese	mg/L	10/13/2005	N001	0.0403			#	0.001	
Molybdenum	mg/L	10/13/2005	N001	0.0015			#	0.0001	
Oxidation Reduction Potential	mV	10/13/2005	N001	-74			#		
pH	s.u.	10/13/2005	N001	8.61			#		
Specific Conductance	umhos /cm	10/13/2005	N001	922			#		
Sulfate	mg/L	10/13/2005	N001	281			#	2.85	
Temperature	C	10/13/2005	N001	13.03			#		
Turbidity	NTU	10/13/2005	N001	8.21			#		
Uranium	mg/L	10/13/2005	N001	0.0072			#	0.00005	

Surface Water Quality Data by Location (USEE102) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0822 (surface location)

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	0001	336			#		
Manganese	mg/L	10/11/2005	0001	0.0459			#	0.001	
Molybdenum	mg/L	10/11/2005	0001	0.0059			#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	31.4			#		
pH	s.u.	10/11/2005	N001	8.21			#		
Radium-226	pCi/L	10/11/2005	0001	1.22		J	#	0.669	0.555
Radium-228	pCi/L	10/11/2005	0001	1.52	U		#	1.52	0.603
Specific Conductance	umhos /cm	10/11/2005	N001	2344			#		
Sulfate	mg/L	10/11/2005	0001	901			#	2.85	
Temperature	C	10/11/2005	N001	12.07			#		
Turbidity	NTU	10/11/2005	N001	11.8			#		
Uranium	mg/L	10/11/2005	0001	0.0094			#	0.00005	

Surface Water Quality Data by Location (USEE102) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005
 Location: 0823 (surface location)

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/11/2005	N001	107			#		
Manganese	mg/L	10/11/2005	N001	0.0342			#	0.001	
Molybdenum	mg/L	10/11/2005	N001	0.0047			#	0.0001	
Oxidation Reduction Potential	mV	10/11/2005	N001	199			#		
pH	s.u.	10/11/2005	N001	8.32			#		
Specific Conductance	umhos /cm	10/11/2005	N001	1383			#		
Sulfate	mg/L	10/11/2005	N001	509			#	2.28	
Temperature	C	10/11/2005	N001	9.37			#		
Turbidity	NTU	10/11/2005	N001	8.75			#		
Uranium	mg/L	10/11/2005	N001	0.0078			#	0.00005	

QA QUAL FIER:

Validated according to quality assurance guidelines.

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

Equipment Blank Data

BLANKS REPORT

LAB CODE: GEN, GENERAL ENGINEERING (Charleston, SC)

RIN: 05100235

Report Date: 12/27/2005

Parameter	Site Code	Location ID	Sample Date	Sample ID	Units	Result	Qualifiers		Detection Limit	Uncertainty	Sample Type
							Lab	Data			
Manganese	RVT01	0999	10/12/2005	N001	mg/L	0.005	U		0.005		E
Manganese	RVT01	0999	10/13/2005	N001	mg/L	0.005	U		0.005		E
Molybdenum	RVT01	0999	10/12/2005	N001	mg/L	0.0005	U		0.0005		E
Molybdenum	RVT01	0999	10/13/2005	N001	mg/L	0.00081	B		0.0005		E
Sulfate	RVT01	0999	10/12/2005	N001	mg/L	0.057	U		0.057		E
Sulfate	RVT01	0999	10/13/2005	N001	mg/L	0.057	U		0.057		E
Uranium	RVT01	0999	10/12/2005	N001	mg/L	0.00025	U		0.00025		E
Uranium	RVT01	0999	10/13/2005	N001	mg/L	0.00025	U		0.00025		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.
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.

SAMPLE TYPES:

E Equipment Blank.

Static Water Level Data

STATIC WATER LEVELS (USEE700) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005

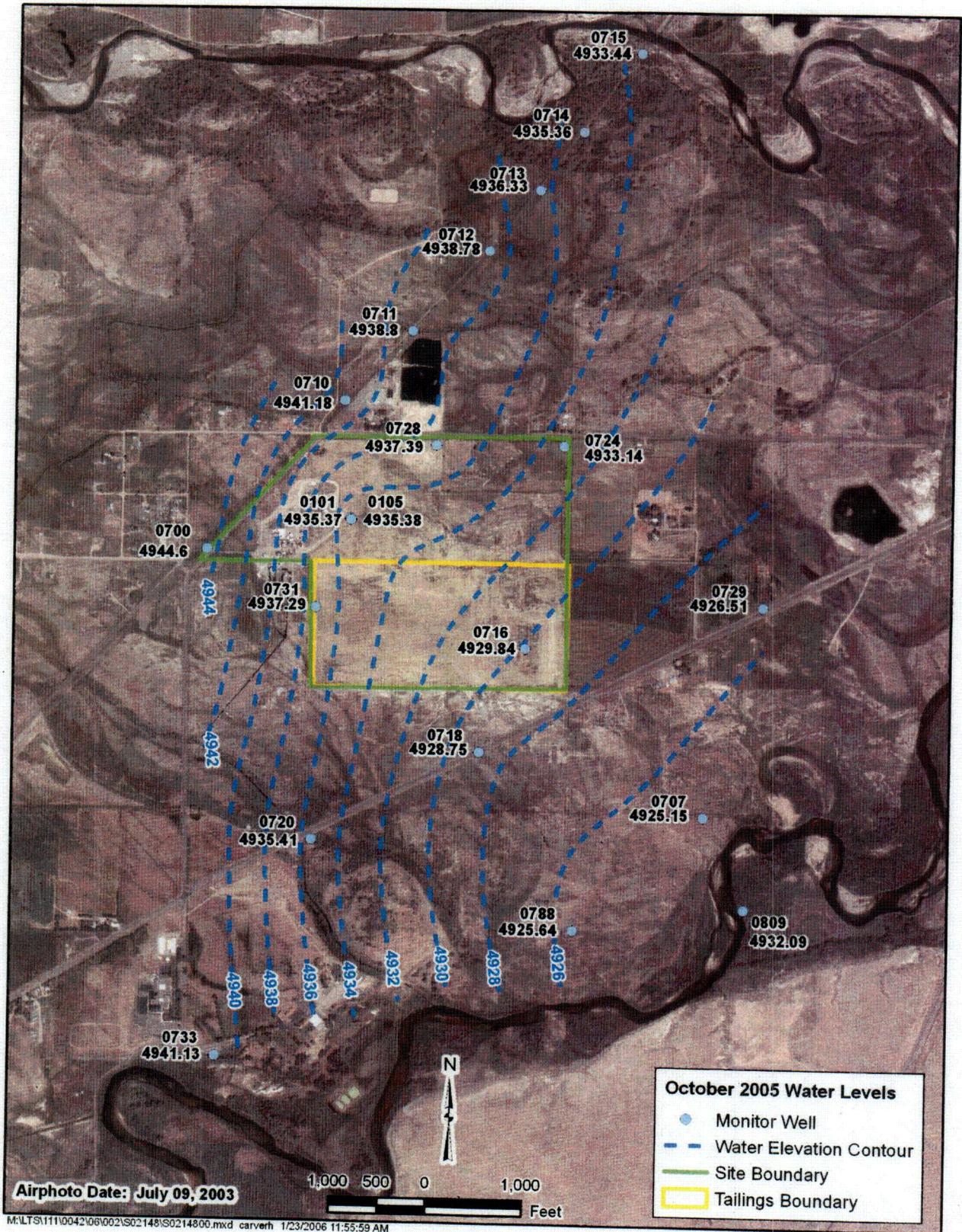
Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0101	O	4946.58	10/12/2005	09:17:00	11.21	4935.37	
0105	O	4946.79	10/12/2005	09:22:00	11.41	4935.38	
0110	O	4946.44	10/12/2005	09:15:00	12.8	4933.64	
0111	O	4946.87	10/12/2005	09:20:00	10.75	4936.12	
0700	U	4951.38	10/12/2005	10:10:00	6.78	4944.6	
0702	D	4931	10/13/2005	09:36:00	6.7	4924.3	
0705	D	4930.8	10/13/2005	10:10:00	6.79	4924.01	
0707	D	4931	10/13/2005	09:54:00	5.85	4925.15	
0707	D	4931	10/13/2005	10:50:00	5.83	4925.17	
0709	D	4930.7	10/13/2005	09:34:00	2.697	4928	
0710	U	4947.9	10/12/2005	08:17:00	6.72	4941.18	
0711	U	4944.5	10/12/2005	08:53:00	5.7	4938.8	
0712	U	4944.5	10/12/2005	08:40:00	5.72	4938.78	
0713	U	4942.7	10/12/2005	08:36:00	6.37	4936.33	
0714	U	4942.1	10/12/2005	08:35:00	6.74	4935.36	
0715	U	4939.4	10/12/2005	08:30:00	5.96	4933.44	
0716	O	4939.12	10/12/2005	10:28:00	9.28	4929.84	
0717	O	4938.8	10/12/2005	10:53:00	8.89	4929.91	
0718	D	4937.6	10/13/2005	14:18:00	8.85	4928.75	
0719	D	4937.55	10/13/2005	14:00:00	8.39	4929.16	
0720	C	4940.46	10/11/2005	15:20:00	5.05	4935.41	
0721	C	4940.47	10/11/2005	15:42:00	8.41	4932.06	
0723	D	4936.01	10/13/2005	16:53:00	8.1	4927.91	
0724	U	4941.36	10/12/2005	09:54:00	8.22	4933.14	
0725	U	4941.66	10/12/2005	10:00:00	8.51	4933.15	
0726	U	4942	10/12/2005	09:52:00	7.45	4934.55	
0727	U	4951.69	10/12/2005	09:08:00	11.14	4940.55	

STATIC WATER LEVELS (USEE700) FOR SITE RVT01, Riverton Processing Site
 REPORT DATE: 12/27/2005

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0728	U	4946.01	10/12/2005	09:00:00	8.62	4937.39	
0729	D	4932.75	10/13/2005	12:57:00	6.24	4926.51	
0730	D	4933.08	10/13/2005	13:22:00	6.93	4926.15	
0731	U	4945.48	10/12/2005	09:52:00	8.19	4937.29	
0732	U	4945.07	10/12/2005	09:27:00	9.06	4936.01	
0733	U	4946.76	10/11/2005	12:53:00	5.63	4941.13	
0734	U	4946.08	10/11/2005	12:55:00	6.71	4939.37	
0735	D	4934.16	10/12/2005	14:15:00	10.17	4923.99	
0736	U	4946	10/11/2005	10:36:00	7.83	4938.17	
0787	D	4932.41	10/13/2005	09:15:00	9.32	4923.09	
0788	C	4935.09	10/13/2005	09:28:00	9.45	4925.64	
0809		4932.09	10/12/2005	13:30:00	7.8	4924.29	

FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWN GRADIENT O ON SITE
 U UPGRADIENT

WATER LEVEL FLAGS: D Dry

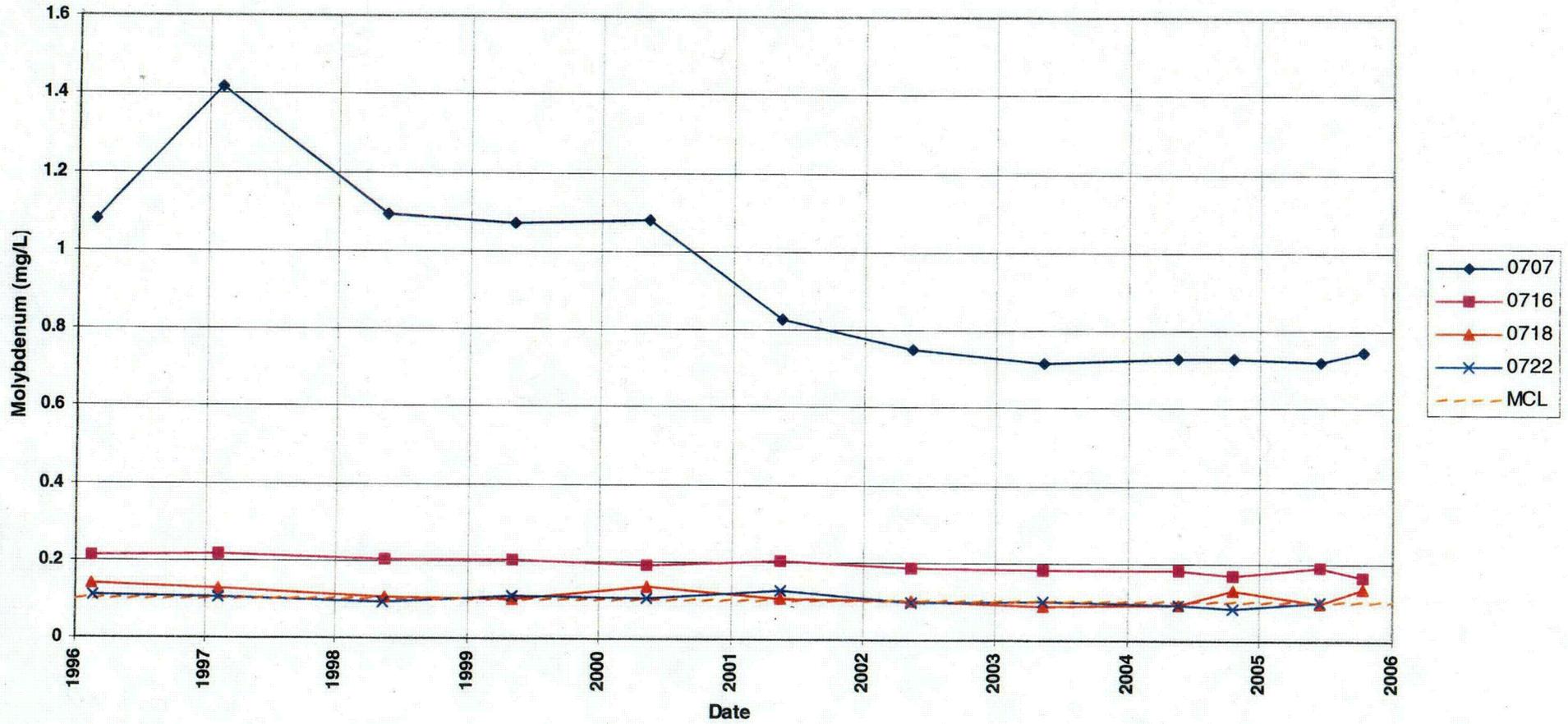


October 2005 Water Levels

COZ

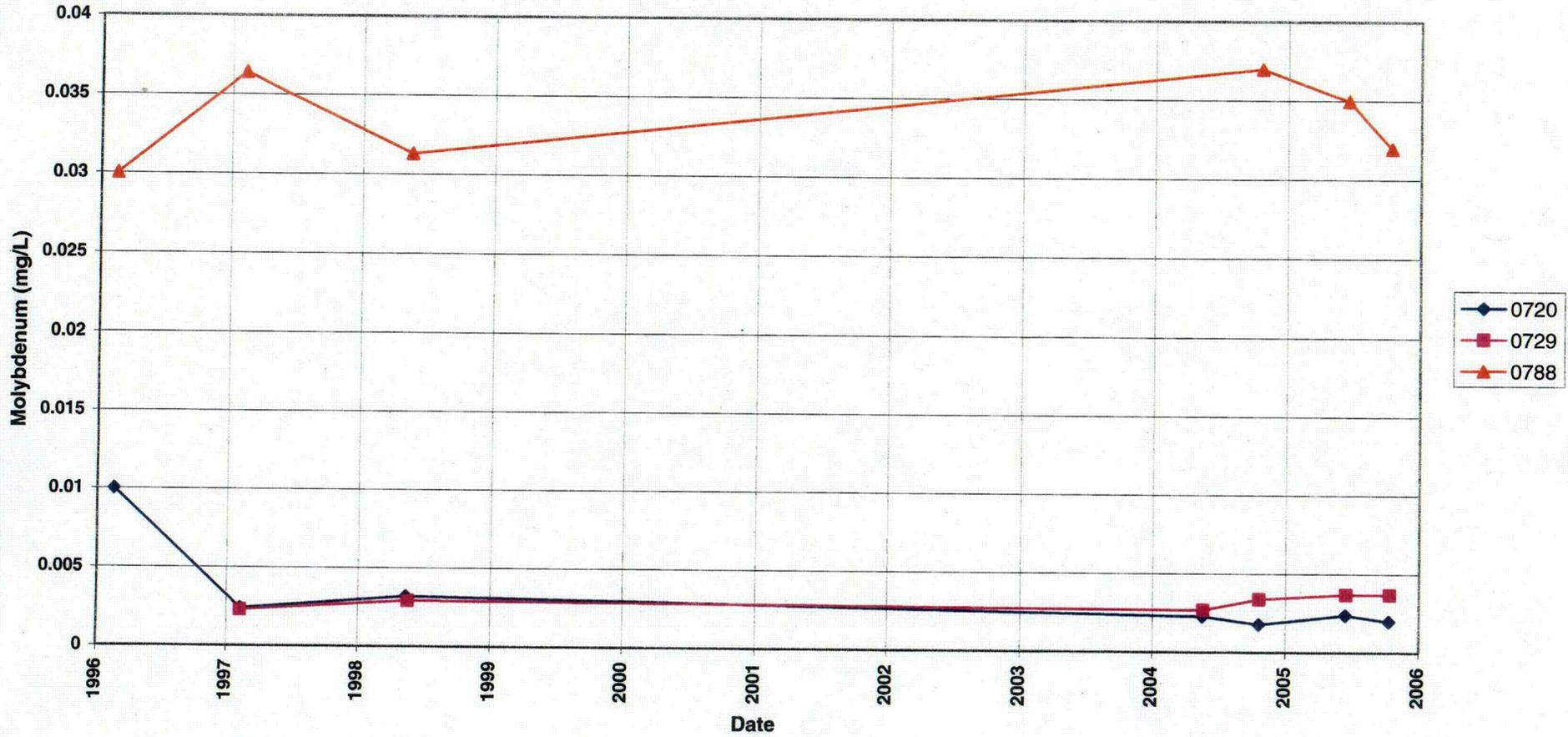
Time Versus Concentration Graphs

Riverton Processing Site
Plume Wells
Molybdenum Concentration
MCL = 0.1 mg/L



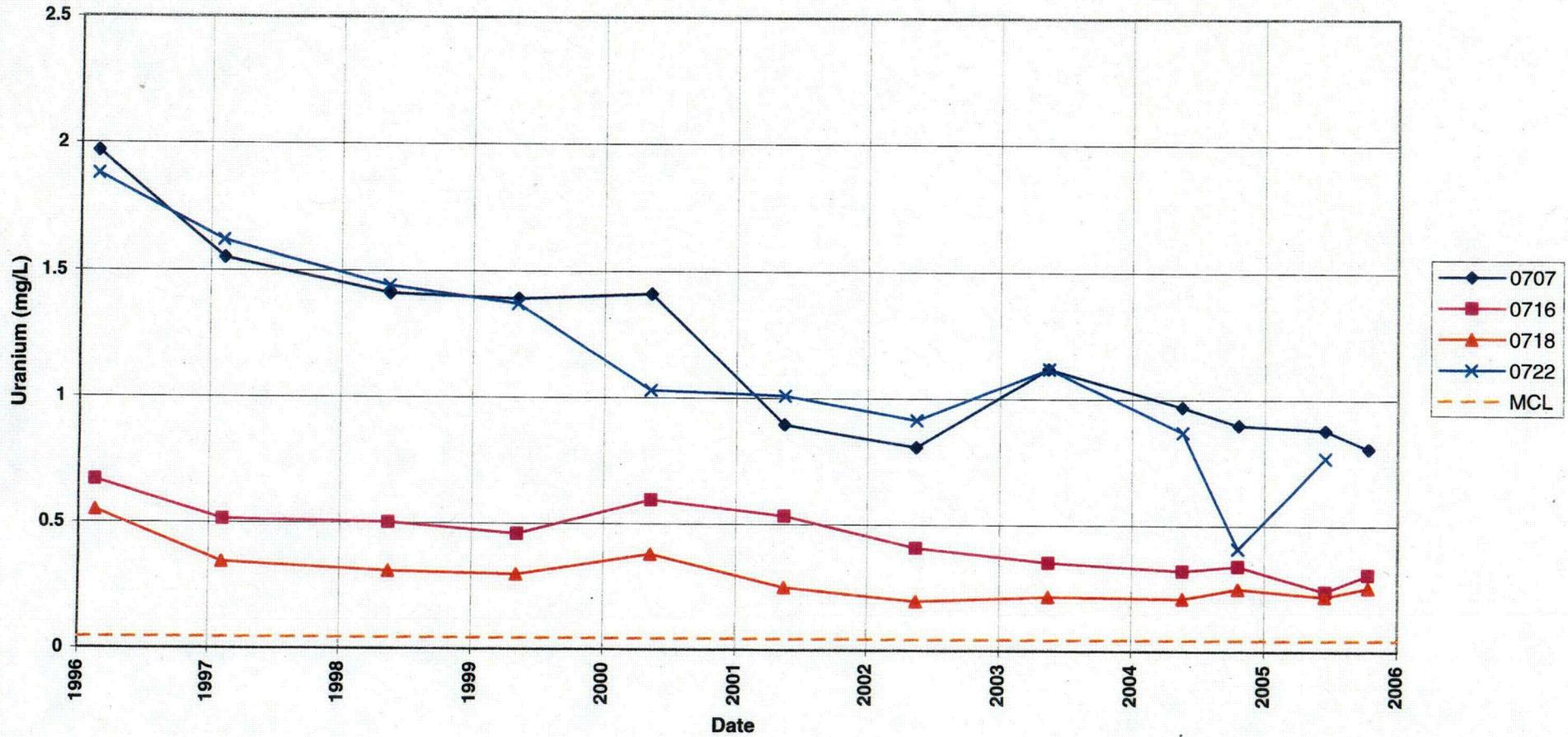
CO3

Riverton Processing Site
Edge of Plume Wells
Molybdenum Concentration
MCL = 0.1 mg/L



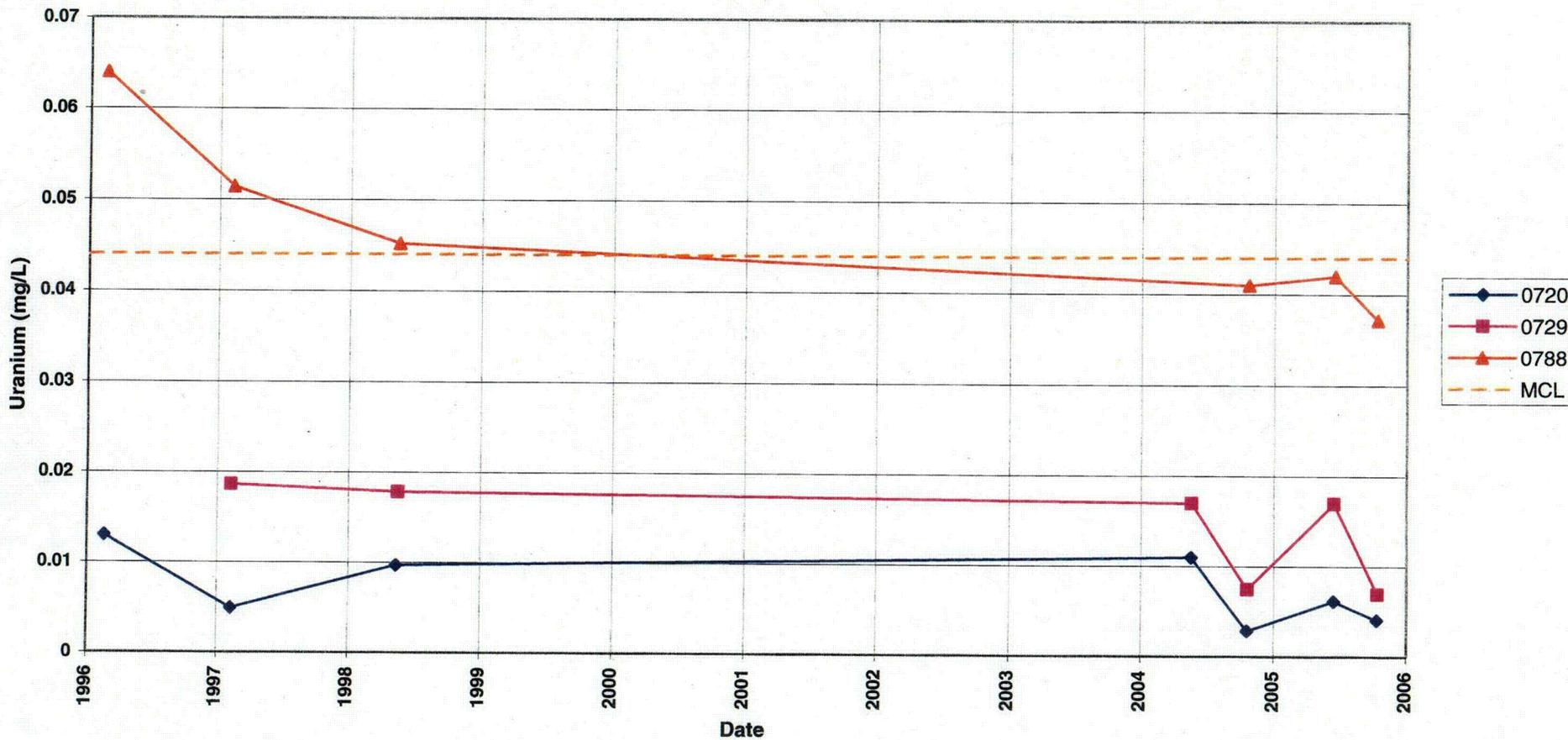
C04

Riverton Processing Site
Plume Wells
Uranium Concentration
MCL = 0.044 mg/L



C05

Riverton Processing Site
Edge of Plume Wells
Uranium Concentration
MCL = 0.044 mg/L



C06

Attachment 3
Sampling and Analysis Work Order

Stoller

established 1959

Task Order ST06-102
Control Number 1000-T05-2189

September 14, 2005

Ms. Tracy Plessinger
Site Manager, LM-50
U.S. Department of Energy
Office of Legacy Management
2597 B ¾ Road
Grand Junction, CO 81503

SUBJECT: Contract No. DE-AC01-02GJ79491, Stoller
October 2005 Environmental Sampling at Riverton, Wyoming

Reference: FY 2006 LM Task Order No. ST06-102-24

Dear Ms. Plessinger:

The purpose of this letter is to inform you of the upcoming sampling event at Riverton, Wyoming. Enclosed are the map and tables specifying sample locations and analytes for ground water and surface water monitoring. Water quality data will be collected from monitor wells, domestic wells, and surface locations at this site as part of the routine environmental sampling currently scheduled to begin the week of October 10, 2005.

The following lists show the monitor wells (with zone of completion), surface locations, and domestic wells scheduled to be sampled during this event.

Monitor Wells (filtered)*

705 Se	716 Sf	719 Se	722 Sf	730 Se	788 Sf	824
707 Sf	717 Se	720 Sf	723 Se	731 Sf	809 Sf	825
710 Sf	718 Sf	721 Se	729 Sf	735 Se		

*NOTE: Se = Semi-confined sandstone; Sf = surficial

Surface Locations (filtered)

747	794	810	811	812	822	823
749	796					

Domestic Wells

405	436	441	446	460	828	951
422	430	440	454			

QA/QC samples will be collected as directed in the *Sampling and Analysis Plan for GJO Projects*. Access agreements are being reviewed and are expected to be complete by the beginning of fieldwork.

If you have any questions, please call me at extension 6588 or Sam Campbell at extension 6654.

Sincerely,

Signature on original

Clay Carpenter
Project Manager

CC/lcg/at
Enclosures (3)

cc: C. I. Bahrke, Stoller
S. E. Campbell, Stoller (e)
S. E. Donivan, Stoller (e)
L. C. Goodknight, Stoller (e)
K. E. Miller, Stoller
D. G. Traub, Stoller (e)

cc w/o enclosures:
Correspondence Control File (Thru V. Creagar)

Constituent Sampling Breakdown

Site	Riverton	
	Ground Water	Surface Water
Analyte		
Approx. No. Samples/yr	60	18
<i>Field Measurements</i>		
Alkalinity	X	X
Dissolved Oxygen		
Redox Potential	X	X
pH	X	X
Specific Conductance	X	X
Turbidity	X	X
Temperature	X	X
<i>Laboratory Measurements</i>		
Aluminum		
Ammonia as N (NH ₃ -N)		
Antimony		
Arsenic		
Barium		
Bromide		
Cadmium		
Calcium		
Chloride		
Chromium		
Cobalt		
Copper		
Fluoride		
Gamma Spec		
Gross Alpha		
Gross Beta		
Iron		
Lead		
Lead-210		
Magnesium		
Manganese	X	X
Molybdenum	X	X
Nickel		
Nickel-63		
Nitrate + Nitrite as N (NO ₃ +NO ₂)-N		
Nitrite		
PCBs		
Phosphate		
Polonium-210		
Potassium		
Radium-226		0822 only
Radium-228		0822 only
Selenium		

Analyte	Ground Water	Surface Water
Silica		
Sodium		
Strontium		
Sulfate	X	X
Sulfide		
Thallium		
Thorium-230		
Tin		
Total Dissolved Solids		
Total Organic Carbon		
Total Suspended Solids		
Uranium	X	X
Uranium-234, -238		
Vanadium		
Zinc		
Total Analytes	4	6

Attachment 4
Trip Report

Memorandum

Control Number N/A

DATE: November 3, 2005
TO: Sam E. Campbell
FROM: Sam E. Campbell
SUBJECT: Trip Report

Site: Riverton, Wyoming, Processing Site.

Dates of Sampling Event: October 10 to October 14, 2005.

Team Members: Sam Campbell, Emile Bettez, and Dan Sellers.

Number of Locations Sampled: 16 monitor wells, 9 surface water locations, and 9 domestic wells.

Locations Not Sampled/Reason: Several locations listed on the sampling and analysis work order were not sampled for the following reasons. Monitor wells 0824 and 0825 are proposed locations that have not been installed yet. Domestic wells 0440 and 0441 (Westlake residence) were not sampled because owner permission was not obtained. Monitor well 0722, which was located in the highway right-of-way, was hit by heavy equipment and destroyed.

Location Specific Information: Water level well 0712, which was not located during the last sampling event, was located using a GPS unit.

Domestic well location 0446 (Britt Givens residence) was recently connected to the alternate water supply system; therefore, monitoring of this well is no longer required.

Monitor wells 0705, 0719, 0730, and 0731 were purged and sampled using Category II criteria; all other monitor wells were purged and sampled using Category I criteria.

With the exception of surface water locations 0747, 0749, and 0822, all samples were collected unfiltered. The duplicate sample at location 0747 was filtered to compare filtered and unfiltered results.

Monitor well 0722 was destroyed by heavy equipment. The protective casing and associated concrete was excavated to determine if the well could be salvaged. After excavation, it was determined that the well could not be salvaged because the PVC casing was snapped approximately 4 feet below ground surface, the well was filled with soil and rock, and the

annular seal had been compromised.

A GPS unit was used to collect horizontal survey coordinates for domestic wells 0405, 0422, 0430, 0446, and 0951.

Monitor wells 0718 and 0719, located in the highway right-of-way were buried by backfill. The wells were found and excavated; integrity of the wells was not affected.

Field Variance: None.

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

False ID	True ID	Sample Type	Ticket Number
2223	NA	Equipment Blank	NDV-639
2224	0716	Duplicate	NDV-644
2225	NA	Equipment Blank	NDV-649
2226	0747	Duplicate	NDV-481

Requisition Numbers Assigned: All samples were assigned to report identification number (RIN) 05100235.

Water Level Measurements: Water levels were measured at all sampled monitor wells and 22 additional monitor wells. A stilling well, location 0827, was installed south of the Little Wind River adjacent to monitor well 0735. Data loggers were downloaded from 5 locations, and data loggers were installed in monitor well 0702 and the stilling well (0827).

Well Inspection Summary: The surface grout/concrete pads at monitor wells 0713, 0714, and 0715 were broken; monitor well 0722 was destroyed. All other wells were in good condition.

Equipment: All equipment functioned properly.

Regulatory: Don Detimore of the Wyoming Department of Transportation (DOT) was contacted regarding protection of monitor wells in the highway right-of-way. Mr. Detimore stated that DOT has not conducted grading activities since the highway was widened several years ago and mowing activities are confined to a narrow strip adjacent to the road; therefore, it is likely DOT did not damage the well. The monitor well damage may have occurred when QWEST was burying fiber optic line in the area. Mr. Detimore requested a map that shows the location of our monitor wells in the highway right-of way.

Dean Goggles was contacted to coordinate sampling activities with WREQC. Mr. Goggles stated they had a busy week scheduled with other activities, and they would not be splitting samples with us during this event.

Site Issues: There was no flow of river water into the Oxbow Lake from the Little Wind River during this sampling event. Warning signs installed around the Oxbow Lake were in good shape.

Access Issues: None.

Corrective Action Required/Taken: The sampling and analysis work order needs to be amended by deleting location 0446 and by adding data logger download locations (0702, 0707, 0709, 0735, 0789, 0809, and 0827) and water level only locations.

Stilling well location 0827 needs to be updated in the database as an actual location. An elevation survey was conducted to determine the elevation of the top of the stilling well relative to well 0735. The stilling well measured at 1.61 feet lower than well 0735.

New concrete is needed around monitor wells 0713, 0714, and 0715.

New dedicated tubing with a weight at the end needs to be installed in monitor well 0705.

A monitor well map should be e-mailed to Don Detimore (don.detimore@dot.state.wy.us). Mr. Detimore's phone number is (307) 332-4151.

Monitor well 0722 needs to be designated as decommissioned in the database. This well was critical to the long-term monitoring network and needs to be replaced.

(SEC/lcg)

cc: T. B. Plessinger, DOE (e)
C. I. Bahrke, Stoller (e)
S. E. Donovan, Stoller (e)
K. E. Miller, Stoller