DOE–LM/1442–2007

Verification Monitoring Report for the Riverton, Wyoming, Processing Site Update for 2006

March 2007

U.S. Department of Energy

Office of Legacy Management

Work Performed Under DOE Contract No. DE–AC01–02GJ79491
for the U.S. Department of Energy Office of Legacy Management.

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Work Performed by S.M. Stoller Corporation under DOE Contract No. DE–AC01–02GJ79491
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1.0 Introduction

The compliance strategy for the Riverton, Wyoming, Processing Site (Riverton site) is natural flushing in conjunction with institutional controls (ICs) and continued monitoring (DOE 1998a). Monitoring during the natural flushing period is referred to as verification monitoring because the purpose of the monitoring is to verify that the natural flushing strategy is progressing as predicted and to verify that ICs are in place and functioning as intended. Data collected during verification monitoring are reported annually in a Verification Monitoring Report. The first verification monitoring report for the Riverton site was issued in 2001. This report entitled *Verification Monitoring Report, Riverton, Wyoming UMTRA Project Site* (DOE 2001), provided a summary of site conditions and evaluated monitoring data collected from 1996 to 2001. Annual updates to the original report provide evaluations of data collected during each subsequent year (DOE 2002, DOE 2003, DOE 2004, DOE 2006).

The purpose of this report is to present and evaluate the data collected during 2006 and to provide an annual update on the progress of the natural flushing compliance strategy. This update is based on results from two routine ground water and surface water sampling events conducted at the Riverton site during June and November 2006. Results from three nonroutine sampling events of the alternate water supply system also are presented in this report.

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2.0 Site Conditions

2.1 Hydrogeology

The Riverton site is located on an alluvial terrace between the Wind River and the Little Wind River approximately 2.3 miles southwest of the town of Riverton, Wyoming (Figure 2–1). Ground water occurs in three aquifers beneath the site: (1) surficial unconfined aquifer (surficial aquifer), (2) middle semiconfined aquifer, and (3) deeper confined aquifer (DOE 1998b). The surficial aquifer consists of approximately 20 feet of unconsolidated alluvial material, and the semiconfined and confined aquifers are composed of shales and sandstones of the upper units of the Eocene Wind River Formation, which is over 500 feet thick in the vicinity of the site. Ground water in the surficial aquifer flows to the southeast. Depth to ground water in the surficial aquifer is generally less than 10 feet (ft) below land surface.

2.2 Water Quality

Shallow ground water beneath and downgradient from the site was contaminated as a result of uranium processing activities from 1958 through 1963 (DOE 1998b). Constituents of potential concern (COPC) in the ground water beneath the Riverton site are manganese, molybdenum, sulfate, and uranium. COPCs were selected using a screening process that compared constituent concentrations with appropriate maximum concentration limits (MCLs), and evaluated potential human health risks and ecological risks. The COPC selection process is detailed in the *Environmental Assessment of Ground Water Compliance at the Riverton, Wyoming, Uranium Mill Tailings Site* (DOE 1998c). Uranium and molybdenum were selected as indicator constituents for compliance monitoring in the *Final Ground Water Compliance Action Plan for the Riverton, Wyoming, Title I UMTRA Project Site* (GCAP) (DOE 1998a). These constituents were selected as indicator constituents because they are sufficiently distributed to form significant aqueous plumes in the uppermost aquifer in the vicinity of the site. The MCLs for uranium and molybdenum are 0.044 milligrams per liter (mg/L) and 0.10 mg/L, respectively.

2.3 Surface Remediation Activities

Uranium mill tailings and other contaminated materials were removed from the Riverton processing site during 1988−1989 and encapsulated at the Umetco Gas Hills East disposal site (Figure 2–1).

2.4 Institutional Controls

To be protective of human health and the environment during the natural flushing period, ICs are required to control exposure to contaminated ground water. An institutional control boundary has been established at the Riverton site (Figure 2–2), delineating the area that requires protection. The IC boundary was set to encompass the area of current ground water contamination and a surrounding buffer zone to account for potential future plume migration.

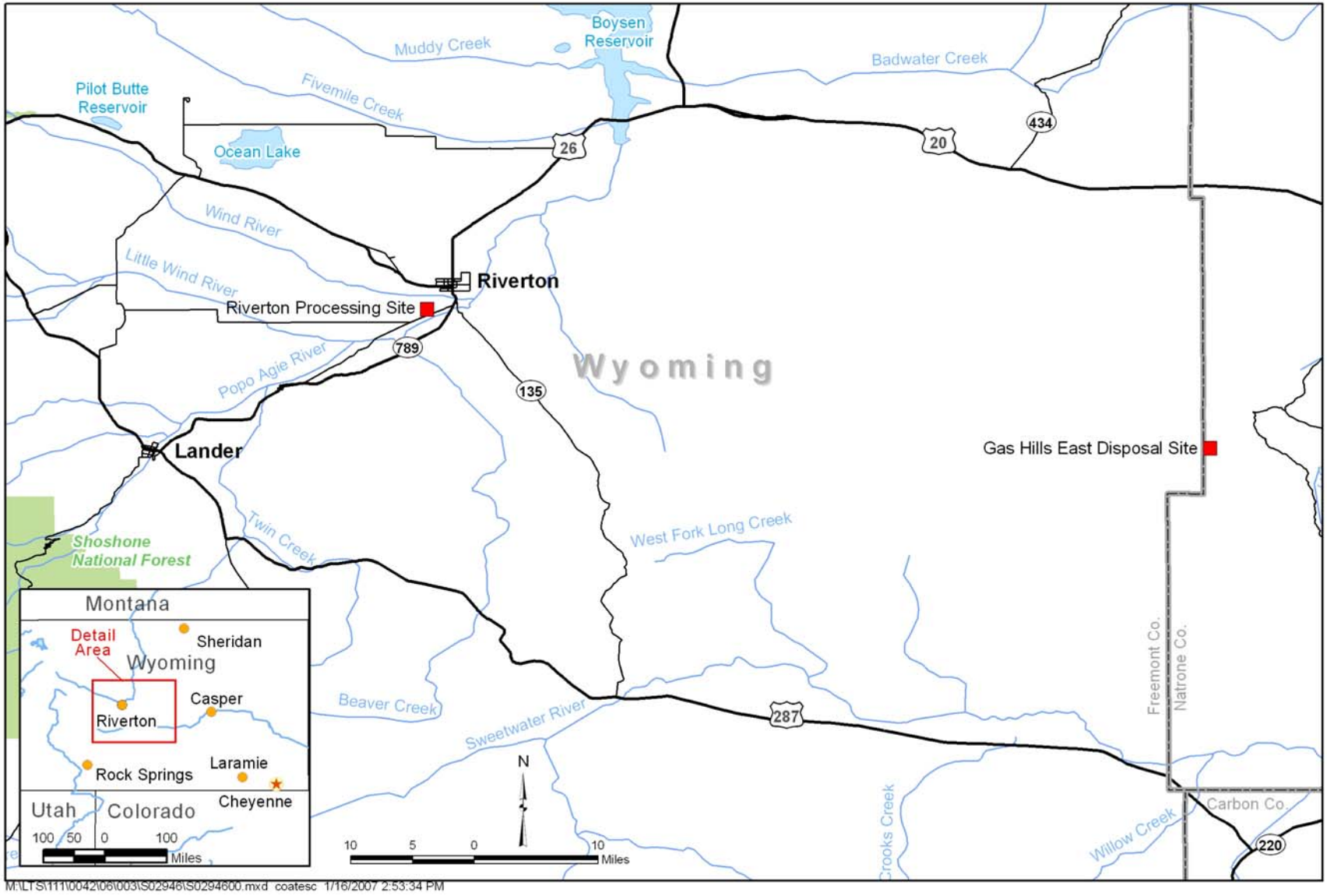

Figure 2–1. Site Location Map

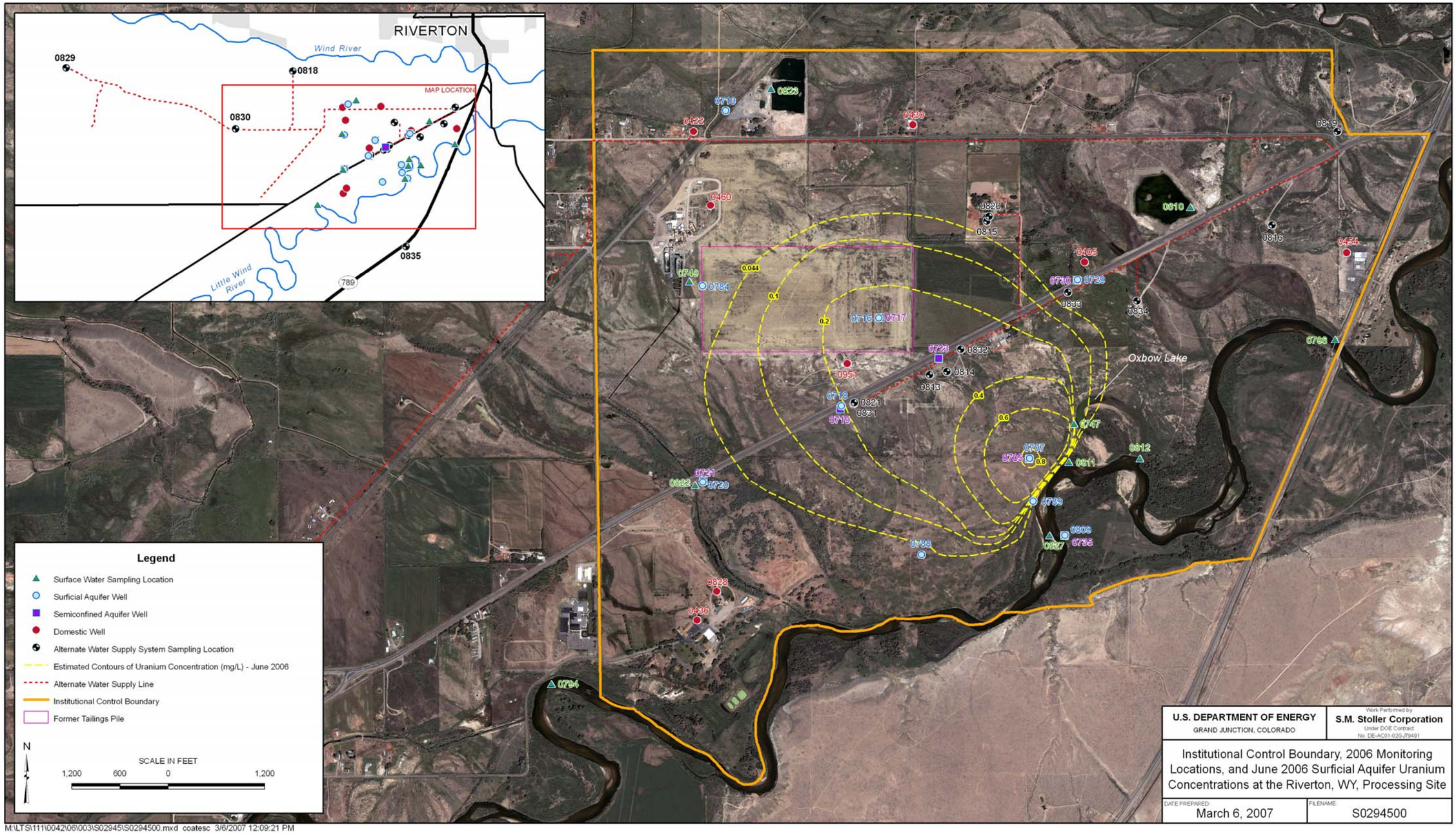

Figure 2–2. Institutional Control Boundary, 2006 Monitoring Locations, and June 2006 Surficial Aquifer Uranium Concentrations at the Riverton, WY, Processing Site

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Cooperative efforts among the U. S. Department of Energy (DOE), the Northern Arapaho and Eastern Shoshone Tribes, and the State of Wyoming continue in order to obtain viable and enforceable ICs at the Riverton site, although all components have not been finalized. ICs in place prior to 2006 include the following components:

- An alternate water supply system funded by DOE and operated by Northern Arapaho Utility Organization supplies potable water to residents within the IC boundary to minimize use of ground water.
- Warning signs installed around the oxbow lake (Figure 2–2) explaining that the contaminated water is not safe for human consumption, with instructions not to drink, fish, or swim in the lake.

ICs finalized in 2006 include:

- A Tribal Ordinance places restrictions on well installation, prohibits surface impoundments, authorizes access to inspect and sample new wells, and provides notification to drilling contractors with Tribal permits of the ground water contamination within the IC boundary. Restrictions on well installation include a minimum depth of 150 ft below ground surface (approximately 50 feet below the top of the confined aquifer) and installation of surface casing through the contaminated upper aquifer.
- A DOE-provided notification of existing ground water contamination to area drilling contractors.

Other ICs that are in progress, but not finalized include:

- A Bureau of Indian Affairs-provided notification of existing ground water contamination to all residents on Tribal land within and adjacent to the IC boundary.
- A State of Wyoming Department of Environmental Quality notification of existing ground water contamination that will be provided to persons on privately-owned land applying for a gravel pit permit within the IC boundary.
- A Bureau of Indian Affairs-provided notification of existing ground water contamination that will be provided to persons on Tribal land applying for a surface impoundment within and adjacent to the IC boundary.
- The State of Wyoming State Engineer's Office will inform DOE when permit applications are received for wells or surface impoundments within or adjacent to the IC boundary, provide DOE with a copy of the application for comment, and incorporate comments on the permit, if approved.
- A notification of existing ground water contamination to property owners at the time of real estate transfers of lands within and adjacent to the IC boundary.
- A perpetual easement and covenant title restriction on the former millsite property owned by the State of Wyoming (Figure 4-4) that restricts land development and well drilling.

DOE funded an alternate drinking water supply system in 1998 to provide potable water to residents living within the IC area. However, elevated concentrations of radionuclides (primarily radium-226 and radium-228) above the Federal drinking water standard were identified in the system in 2002 (Babits 2003), and were confirmed with data collected during the May 2004 sampling event. In 2005, DOE funded an independent analysis of the alternate water supply

system to determine the source of the elevated radionuclides, to make recommendations of how to reduce the radionuclide concentrations to acceptable levels, and to determine the integrity and long-term viability of the system. Conclusions of the independent analysis included:

- The source of radionuclides in the system is from the source well, which has naturally occurring concentrations below Federal drinking water standards.
- Radionuclides in the system are being concentrated by sediment accumulation in stagnant portions of the system and/or by biofilm capture.
- A flushing program should be implemented as a first step to reduce the radionuclide concentrations.
- System components will require maintenance or replacement to provide the required 100-year lifespan; future growth will require system expansion.

3.0 Monitoring Program

The monitoring program was expanded in 2004 to include additional monitor wells and surface water locations for the purpose of enhancing delineation of contaminant plumes and improving the assessment of future contaminant plume movement. This expanded monitoring program continued in 2006 and consisted of 17 monitor wells, 8 domestic wells, 10 surface water locations, and 15 locations associated with the alternate water supply system, which are listed in Table 3–1 and shown in Figure 2–2.

Table 3–1. 2006 Sampling Network at the Riverton Site

Location ID	Description	Sampling Event	Rationale
DOE Monitor Wells			
0705	Semiconfined aquifer	June, November	Monitor semiconfined aquifer
0707	Surficial aquifer	June, November	Monitor centroid of plume
0710	Surficial aquifer	June, November	Background location
0716	Surficial aquifer	June, November	Monitor upgradient portion of plume
0717	Semiconfined aquifer	June, November	Monitor semiconfined aquifer
0718	Surficial aquifer	June, November	Monitor lateral plume movement
0719	Semiconfined aquifer	June, November	Monitor semiconfined aquifer
0720	Surficial aquifer	June, November	Monitor potential plume movement
0721	Semiconfined aquifer	June, November	Monitor semiconfined aquifer
0723	Semiconfined aquifer	June, November	Monitor semiconfined aquifer
0729	Surficial aquifer	June, November	Monitor potential plume movement
0730	Semiconfined aquifer	June, November	Monitor semiconfined aquifer
0735	Semiconfined aquifer	June, November	Monitor semiconfined aquifer
0784	Surficial aquifer	June, November	Monitor lateral plume movement
0788	Surficial aquifer	June, November	Monitor lateral plume movement
0789	Surficial aquifer	November	Monitor centroid of plume
0809	Surficial aquifer	June, November	Monitor potential plume migration south of river
Domestic Wells			
0405	Private residence	June, November	Verify low concentrations of COPCs
0422	Private residence	June, November	Verify low concentrations of COPCs
0430	Private residence	June, November	Verify low concentrations of COPCs
0436	St Stephens Mission	June, November	Verify low concentrations of COPCs
0454	789 Bingo/Truck Stop	June, November	Verify low concentrations of COPCs
0460	Peak Sulfur Plant	June, November	Verify low concentrations of COPCs
0828	St Stephens Mission	June, November	Verify low concentrations of COPCs
0951	Private residence	June, November	Verify low concentrations of COPCs
Surface Water			
0747	Oxbow lake	June, November	Impacted by ground water discharge
0749	Peak Sulfur ditch	June, November	Effluent from sulfur plant
0794	Little Wind River	June, November	Upstream of predicted plume discharge
0796	Little Wind River	June, November	Downstream of predicted plume discharge
0810	Pond – former gravel pit	June, November	Potential for impact – within IC boundary
0811	Little Wind River	June, November	Within area of predicted plume discharge
0812	Little Wind River	June, November	Within area of predicted plume discharge
0822	West side irrigation ditch	June, November	Potential for impact – within IC boundary
0823	Pond – former gravel pit	June, November	Upgradient of plume; within IC area

Table 3–1 (continued). 2006 Sampling Network at the Riverton Site

0827	Little Wind River stilling well	Continuous	Installed in October 2005, monitor water level in the Little Wind River.
Alternate Water Supply System			
0813	Tap	June	Verify low radium concentrations at house tap
0814	Tap	June	Verify low radium concentrations at house tap
0815	Tap	June	Verify low radium concentrations at house tap
0816	Tap	June	Verify low radium concentrations at house tap
0818	Hydrant	June/August	Determine effectiveness of flushing
0819	Hydrant	June/August	Determine effectiveness of flushing
0820	Hydrant	June/August	Determine effectiveness of flushing
0821	Hydrant	June/August	Determine effectiveness of flushing
0829	Hydrant	June	Determine effectiveness of flushing
0830	Hydrant	June	Determine effectiveness of flushing
0831	Soil	June	Determine impacts from the sulfuric acid plant
0832	Soil	June	Determine impacts from the sulfuric acid plant
0833	Soil	June	Determine impacts from the sulfuric acid plant
0834	Hydrant	June	Determine effectiveness of flushing
0835	Hydrant	August	Check radium concentrations in older portions of the water system

The long-term monitoring network will continue to expand in 2007 with installation of additional wells along the lateral edge of the plume. The final long-term monitoring network will be specified in the *Long-Term Management Plan for the Riverton, Wyoming, Processing Site* (in progress).

In addition to the long-term monitoring program, a flushing and monitoring program of the alternate water supply system (AWSS) was initiated in 2006 to determine if flushing could reduce elevated radionuclide concentrations in the system. An initial flush of the system was conducted in May to fine tune the flushing procedure and remove accumulated sediment and debris; no monitoring was associated with the initial flush. In June, the system was flushed and samples collected at hydrant and residential tap locations during the flushing period. In August, samples were collected at hydrant and tap locations without flushing to determine concentrations between flushing events. The August event included a sample on an older portion of the water system outside the IC boundary to check for radionuclide buildup in portions of the system remote from the area of ground water contamination. Soil sampling was also conducted adjacent to portions of the water line downgradient of the sulfuric acid plant to determine if historic acid leaks at the sulfuric acid plant have impacted soils adjacent to the line.

4.0 Results of 2006 Monitoring

4.1 Ground Water

4.1.1 Ground Water Quality

Results of the monitoring program to date show that concentrations of uranium and molybdenum in ground water in the surficial aquifer are still above their respective MCL; however, concentrations are decreasing, indicating that natural flushing is occurring in the surficial aquifer. Time-versus-concentration plots for uranium in wells located within contaminant plumes and wells bordering the contaminant plumes in the surficial aquifer are shown in Figure 4–1. The distribution of uranium in the surficial aquifer, based on June 2006 sampling results, is shown on Figure 2-2. The distribution of molybdenum in ground water in the surficial aquifer is similar to that of uranium. Time-versus-concentration plots for molybdenum in wells located within contaminant plumes and wells bordering contaminant plumes in the surficial aquifer are shown in Figure 4–2. Concentrations of uranium and molybdenum in ground water in the semiconfined aquifer that underlies the surficial aquifer are still significantly below corresponding MCLs, indicating no impact from site-related contamination in this unit (Figure 4–3). Ground water quality data by parameter for locations sampled during 2006 are provided in Appendix A. Surficial aquifer monitor well 0789 was sampled for the first time during November in order to better define the contaminant plume. The uranium concentration of 1.7 mg/L measured in the sample collected from this well was the highest in the monitoring network. This well was installed in 1995 and has never been sampled; therefore, redevelopment work will be conducted and the well resampled to determine if the measured uranium concentration reflects the actual concentration in the aquifer at this location or if the measured uranium concentration is an artifact of stagnation in the well.

4.1.2 Ground Water Flow

Water levels were measured at the majority of wells in the monitoring network in June and October in order to verify ground water flow direction and to assess vertical gradients throughout the IC area. A stilling well was installed in the Little Wind River in October 2005 to monitor river stage, and continuous water level measurements were collected via data loggers in seven wells. Water level data are included in Appendix B.

Assessment of horizontal ground water flow direction in the surficial aquifer is required to assure the monitoring network is adequate for assessing contaminant plume movement and to assure the IC boundary provides a sufficient buffer for contaminant plume movement. As shown in Figure 4–4 and Figure 4–5, ground water elevation contours for the surficial aquifer indicate a general flow direction to the southeast, which is consistent with historically measured flow directions and contaminant plume configurations.

Vertical gradients are used to assess the direction that ground water will flow vertically. Using the methods that have traditionally been applied to assess vertical flow, a negative gradient indicates potential for upward ground water flow, and a positive gradient indicates potential for downward ground water flow. Regardless of the direction indicated by gradient, vertical migration of ground water is expected to be relatively minor because of the low vertical hydraulic conductivities of the confining layers separating aquifers. Vertical gradients calculated

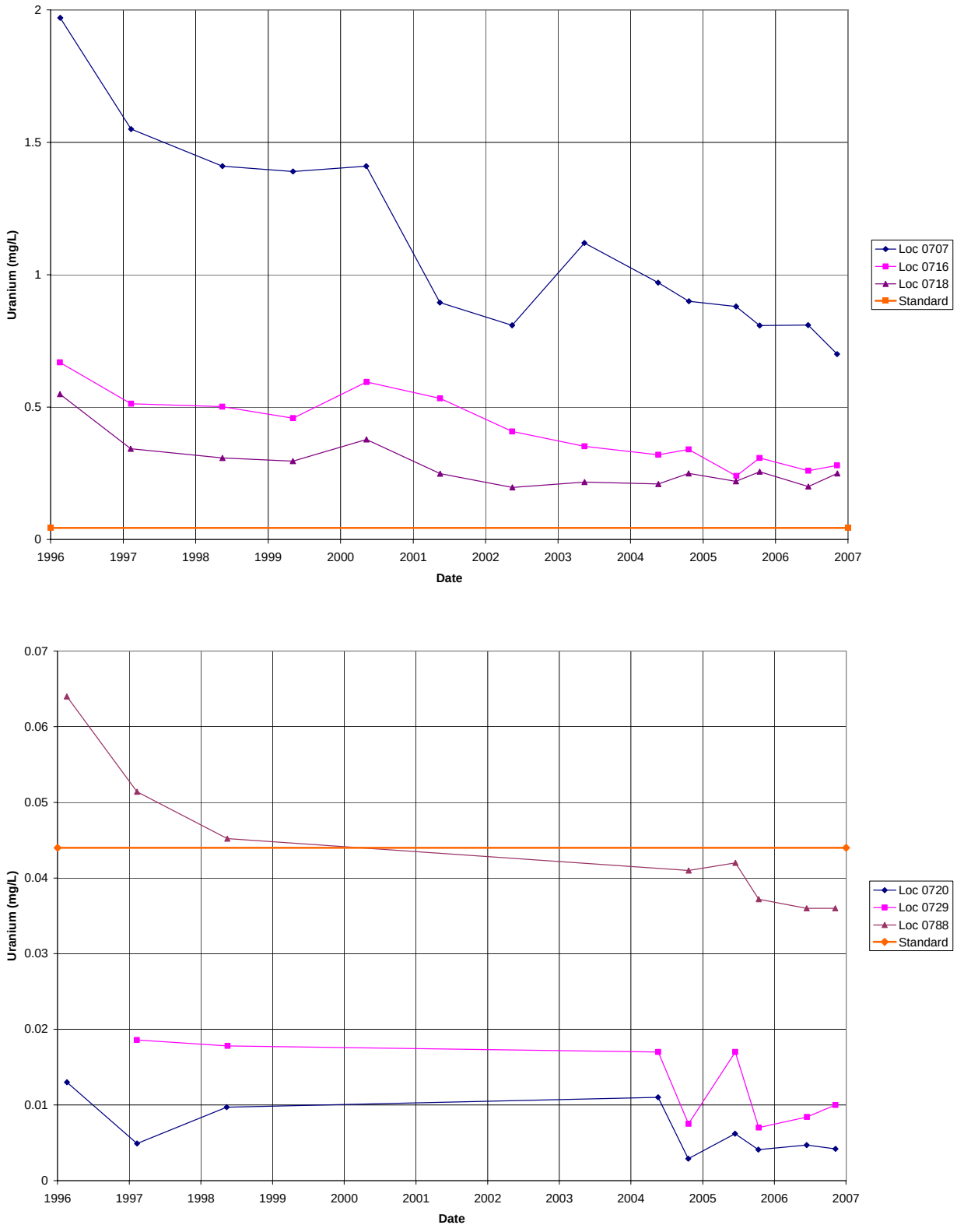


Figure 4–1. Riverton Processing Site Uranium Concentrations in Surficial Aquifer Wells

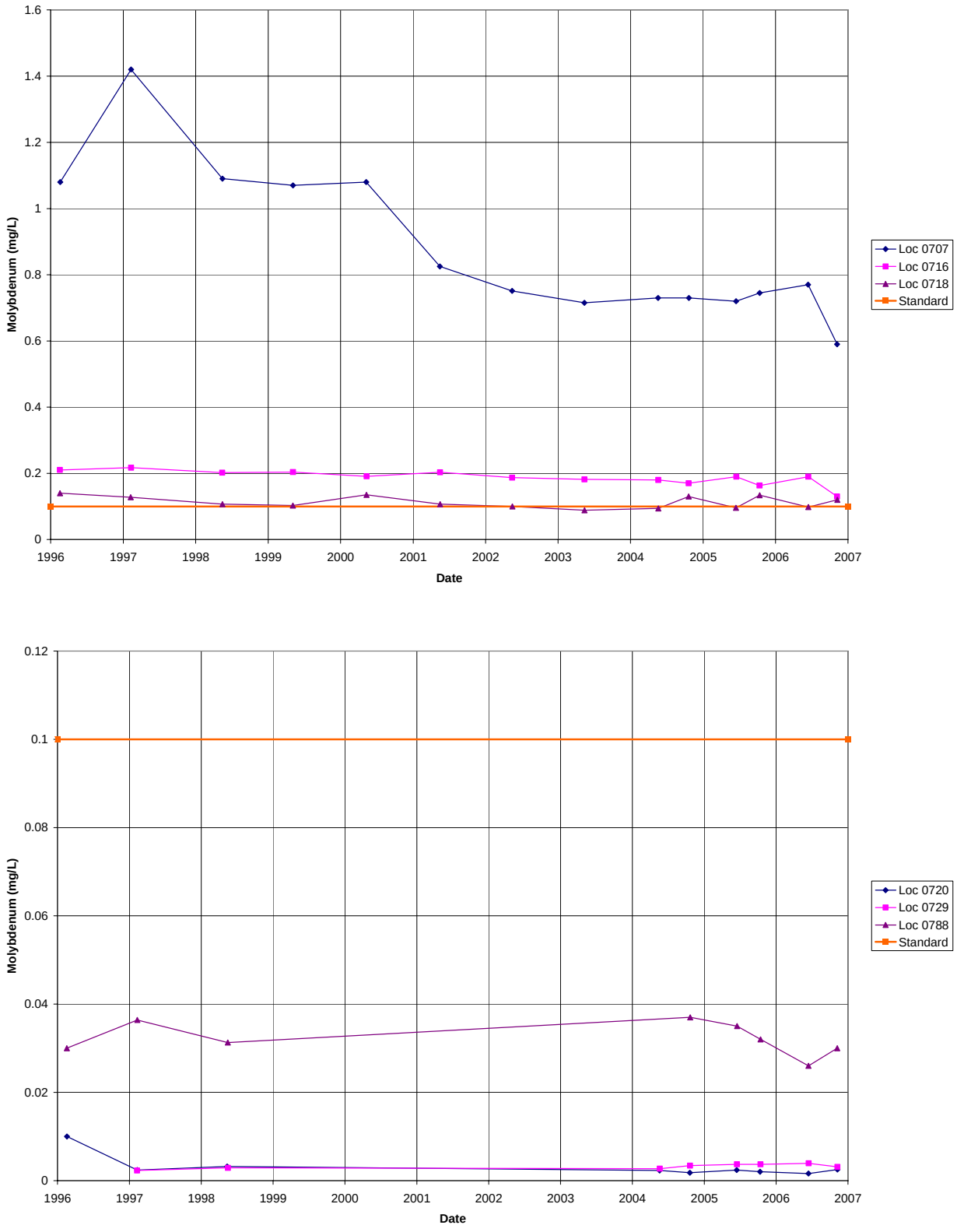


Figure 4–2. Riverton Processing Site Molybdenum Concentrations in Surficial Aquifer Wells

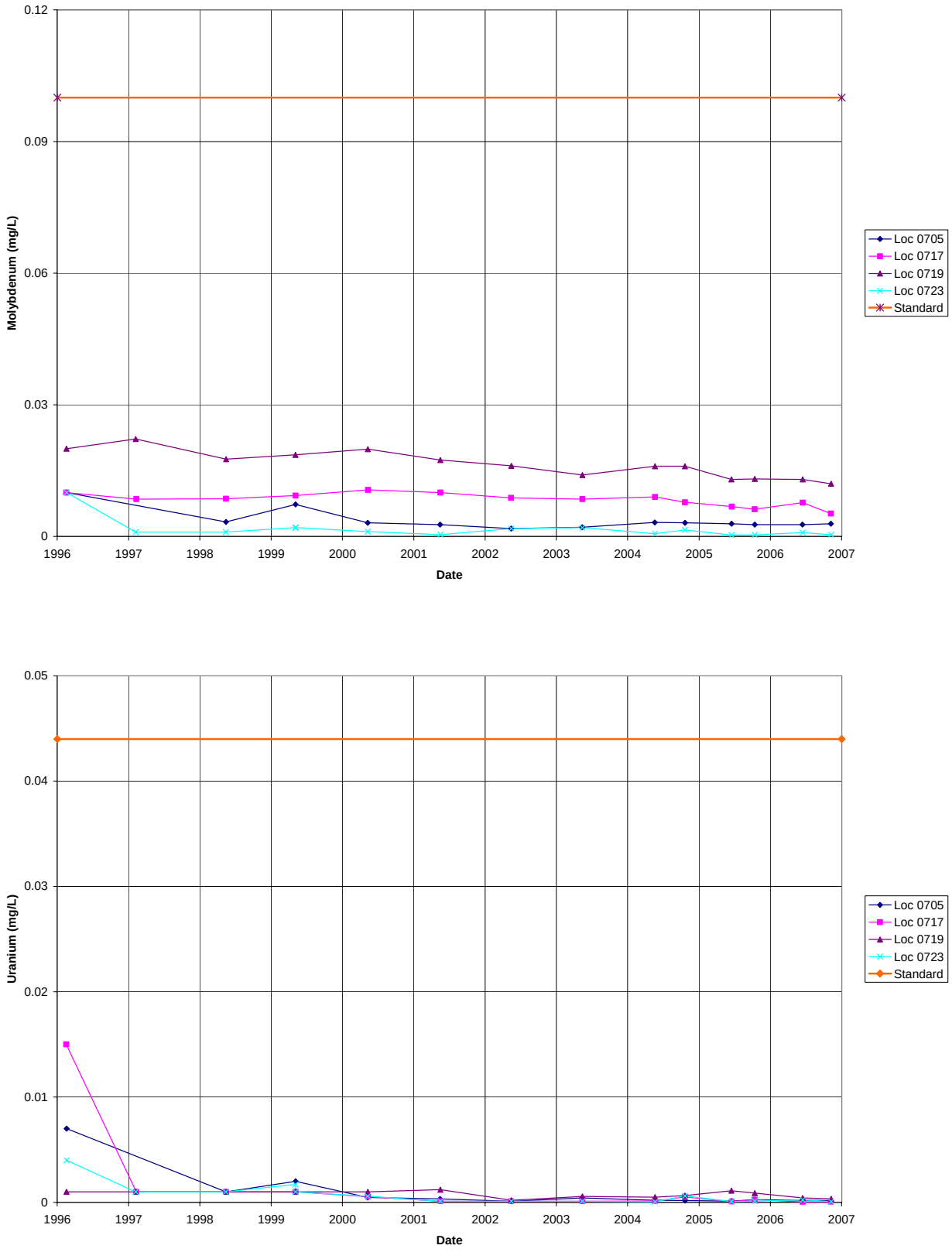


Figure 4–3. Riverton Processing Site Molybdenum and Uranium Concentrations in Semiconfined Aquifer Wells

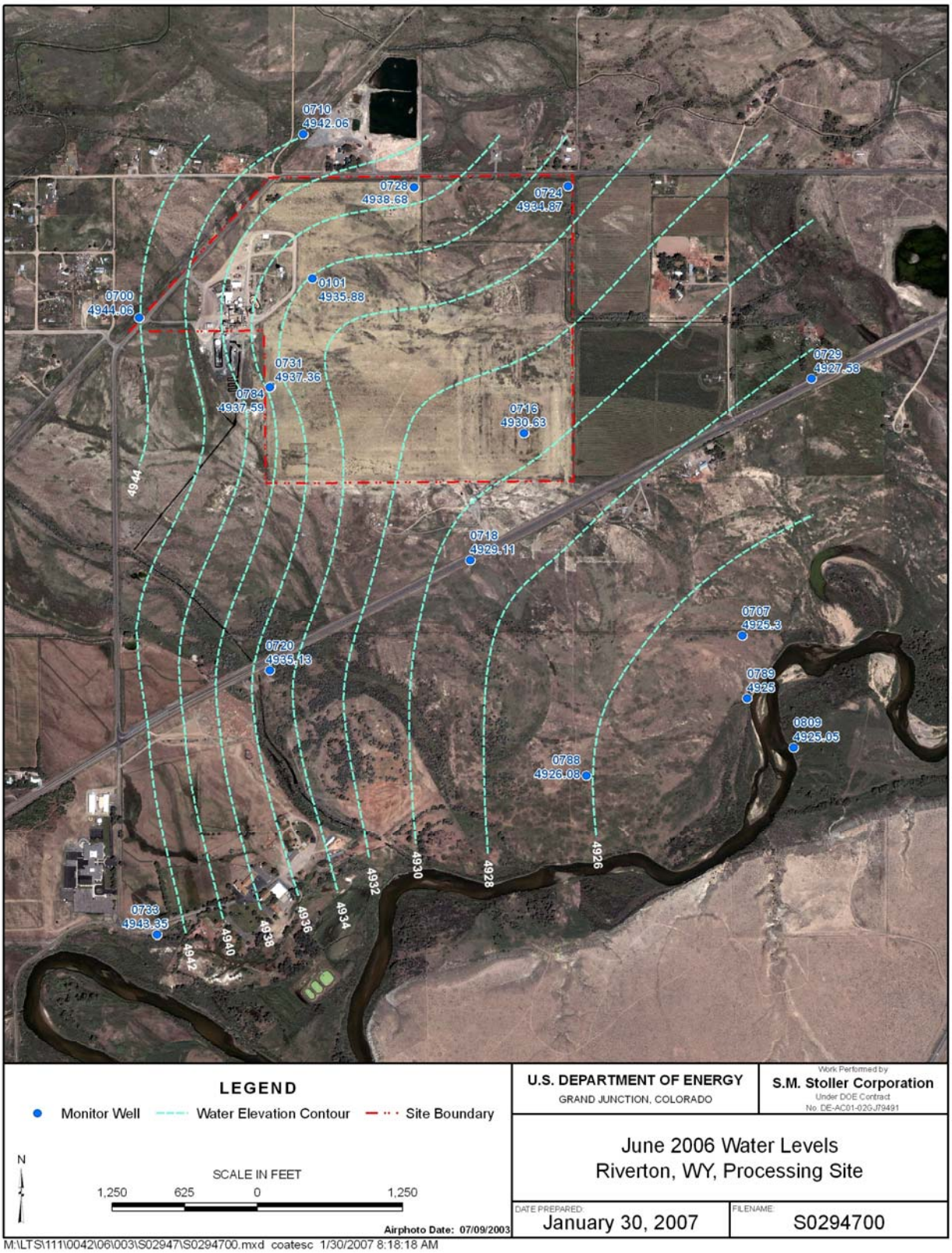


Figure 4–4. June 2006 Water Levels in the Surficial Aquifer

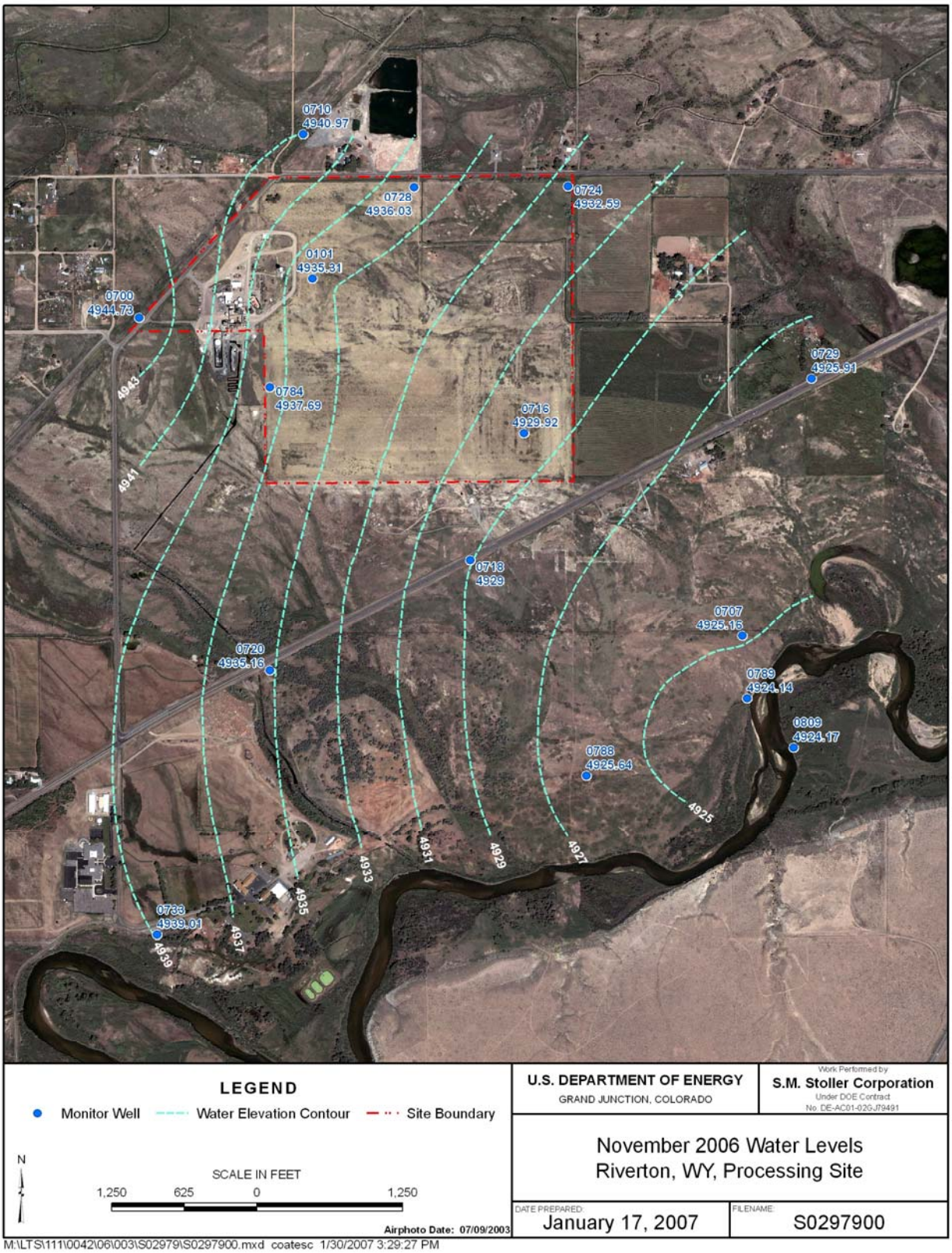


Figure 4–5. November 2006 Water Levels in the Surficial Aquifer

Table 4–1. Riverton Vertical Gradients

Well ID	Aquifer	Water Elevation June 2006	Water Elevation Nov 2006	Vertical Gradient[a] June 2006	Vertical Gradient Nov 2006
0724	Surficial	4934.87	4932.59		
0725	Semiconfined	4935.11	4932.57	-0.014	0.001
0726	Confined	4935.72	4934.81	-0.007	-0.019
0101	Surficial	4935.88	4935.31		
0111	Semiconfined	4937.21	4936.04	-0.049	-0.027
0110	Confined	4934.79	4933.59	0.021	0.033
0731/784[b]	Surficial	4937.36	4937.69		
0732	Semiconfined	4936.14	4936.10	0.046	0.060
0716	Surficial	4930.63	4929.92		
0717	Semiconfined	4930.12	4929.98	0.014	-0.002
0707	Surficial	4925.30	4925.16		
0705	Semiconfined	4924.61	4924.06	0.024	0.039
0709	Confined	4927.60	No data	-0.030	-
0718	Surficial	4929.11	4929.00		
0719	Semiconfined	4929.86	4929.38	-0.038	-0.019
0722	Surficial	No Data	No Data		
0723	Semiconfined	4929.93	4928.08	-	-
0720	Surficial	4935.13	4935.16		
0721	Semiconfined	4932.24	4932.18	0.080	0.083
0729	Surficial	4927.58	4925.91		
0730	Semiconfined	4927.02	4926.73	0.024	-0.036
0809	Surficial	4925.05	4924.17		
0735	Semiconfined	4924.62	4923.83	0.024	0.019

[a]Vertical gradient from the semiconfined aquifer is between the semiconfined aquifer and the surficial aquifer, and the vertical gradient from the confined aquifer is between the confined aquifer and the surficial aquifer. A negative value indicates an upward vertical gradient.
[b]Well 0731 in June and well 0784 in November.

from June and November data are shown in Table 4–1. General observations from Table 4–1 include:

(1) Vertical gradients in the confined aquifer are upward at two locations, as expected.

(2) The well cluster adjacent to the sulfuric acid plant indicates a downward vertical gradient in the confined aquifer, which is likely a reflection of continuous long-term pumping of the confined aquifer from the acid-plant production well.

(3) Vertical gradients in the semiconfined aquifer are variable, but tend to be downward near surface water features, and upward away from surface water features. Surface water is likely recharging the surficial aquifer causing a localized increase in heads in the surficial aquifer and a resulting downward vertical gradient.

4.2 Domestic Wells

All domestic wells sampled in 2006 are completed in the confined aquifer. Results from domestic wells did not indicate any impacts from the Riverton site. Concentrations of molybdenum and uranium in samples collected from domestic wells were one to three orders of magnitude below their respective standards. Data obtained from sampling of domestic wells in 2006 are provided in Appendix C.

4.3 Surface Water

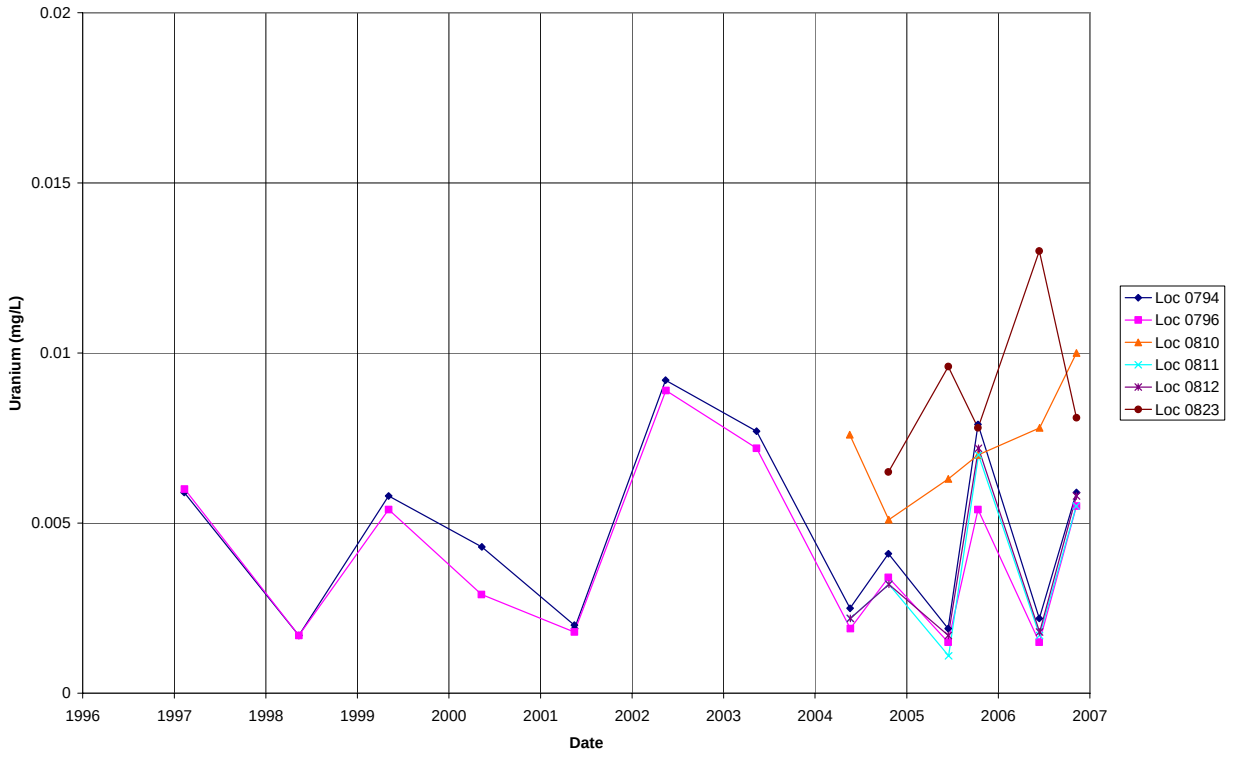
Samples were collected at four locations on the Little Wind River (Figure 2–2). Contaminated ground water likely discharges to the Little Wind River, but there is no evidence that it impacts surface water quality in the river. Uranium concentrations measured in samples collected from river locations adjacent to and downstream of the ground water plume (0811, 0812, and 0796) are essentially the same as the concentrations from river samples collected upstream of the ground water plume (0794).

Two ponds formed from ground water discharge into former gravel pits were sampled as part of the long-term monitoring network. These ponds are primarily used for recreation. Samples collected from these ponds (locations 0810 and 0823) and the west side irrigation ditch (0822) had concentrations of uranium within the range of background uranium concentrations in ground water (0.001 to 0.0156 mg/L), which indicates minimal impacts from the site. Uranium concentrations over time in river and pond locations are shown in Figure 4–6.

The sample collected at the ditch that carries discharge water from the Peak Sulfur plant (0749) had elevated concentrations of sulfate in 2006 (2,600 mg/L in November). The elevated sulfate concentrations in Peak Sulfur ditch water has affected sulfate concentrations farther downstream in the west side irrigation ditch (1,100 mg/L at location 0822 in November).

Concentrations of uranium have been and continue to be elevated (Figure 4–6) in surface water in the oxbow lake (location 0747), which was formed by a shift in the river path in 1994. Hydraulic and water quality data indicate that the oxbow lake is fed by the discharge of contaminated ground water; therefore, elevated concentrations are expected.

As shown in Figure 4–6, concentrations of uranium in the oxbow lake have been variable over time. This variability is attributed to surface inflow to the lake from the Little Wind River during high river stage, which causes a dilution of uranium concentrations. During the June 2006 sampling event, water was flowing from the river into the oxbow lake, as reflected by the historic low uranium concentration (0.063 mg/L). As future sampling events are conducted during low river stage (fall sampling event), contaminant concentration trends in the oxbow lake will be evaluated. Surface water quality data by parameter for locations sampled during 2006 are provided in Appendix D.



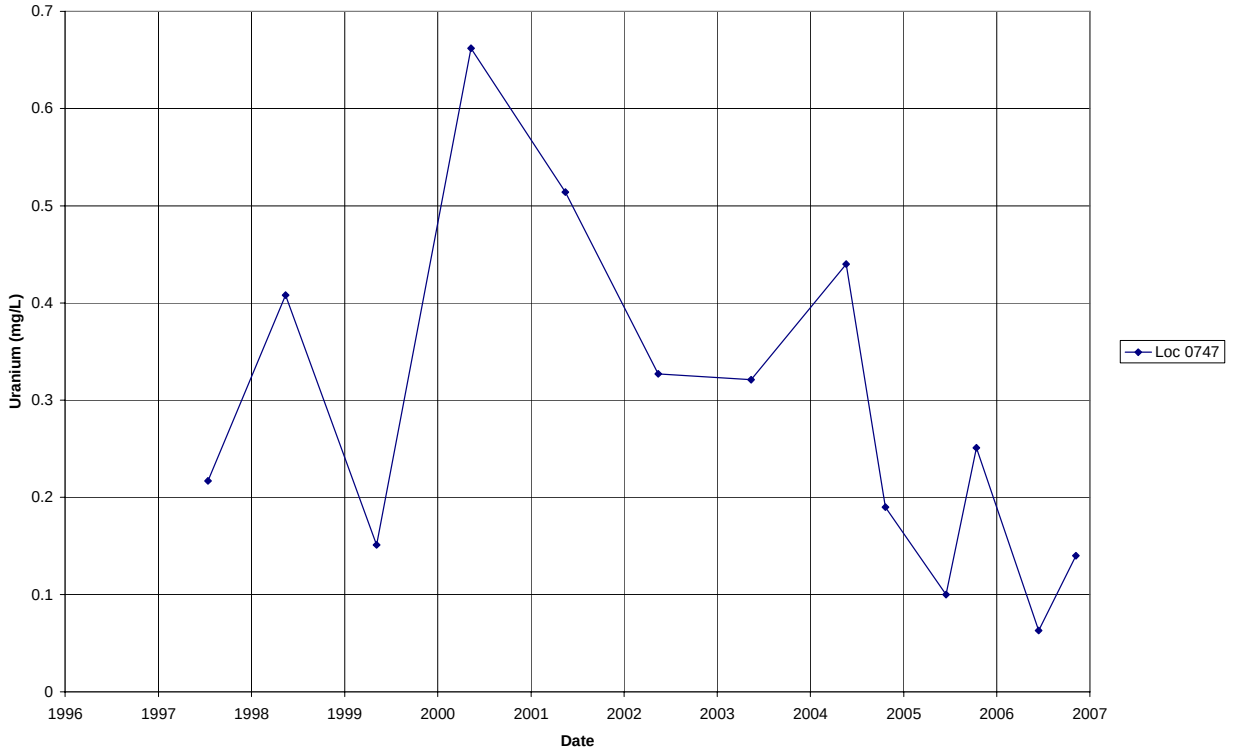


Figure 4–6. Riverton Processing Site Uranium Concentrations in Surface Water

4.4 Alternate Water Supply System

The flushing and monitoring program was initiated in 2006 as a collaborative effort among DOE, Wind River Environmental Quality Commission (WREQC), and the Northern Arapaho Utility Organization (NAUO). The purpose of the flushing and monitoring program is to determine if unidirectional flushing of the AWSS is effective in reducing radionuclide concentrations in the water system. Flushing of the AWSS was conducted by starting at the hydrant nearest to the tank and proceeding in one direction, flushing each hydrant on the water line until reaching the end of the system. This type of sequential flush in one direction or "unidirectional" was a recommendation from an independent engineering analysis (ASCG 2005) and the U.S. Environmental Protection Agency (EPA).

To date, monitoring results show the flushing program has been effective in reducing the radionuclide concentrations in the system. Monitoring to measure the effectiveness of the flushing program included collection and analysis of samples from flushing hydrants and residential taps, and measurement of flow from the hydrants during flushing. Before the flushing program started, six samples collected from flushing hydrants exceeded the radium-226 + radium-228 Federal drinking water standard of 5 picoCuries per liter (pCi/L), with concentrations up to 5 times the standard. After the start of the flushing program, results from all hydrant samples were below the standard (Figure 4–7). Uranium concentrations at all hydrants, prior to and after the flushing program started, were generally below the laboratory detection limit, which is approximately 300 times lower than the Federal drinking water standard. Data from sampling of the alternate water supply system is presented in Appendix E.

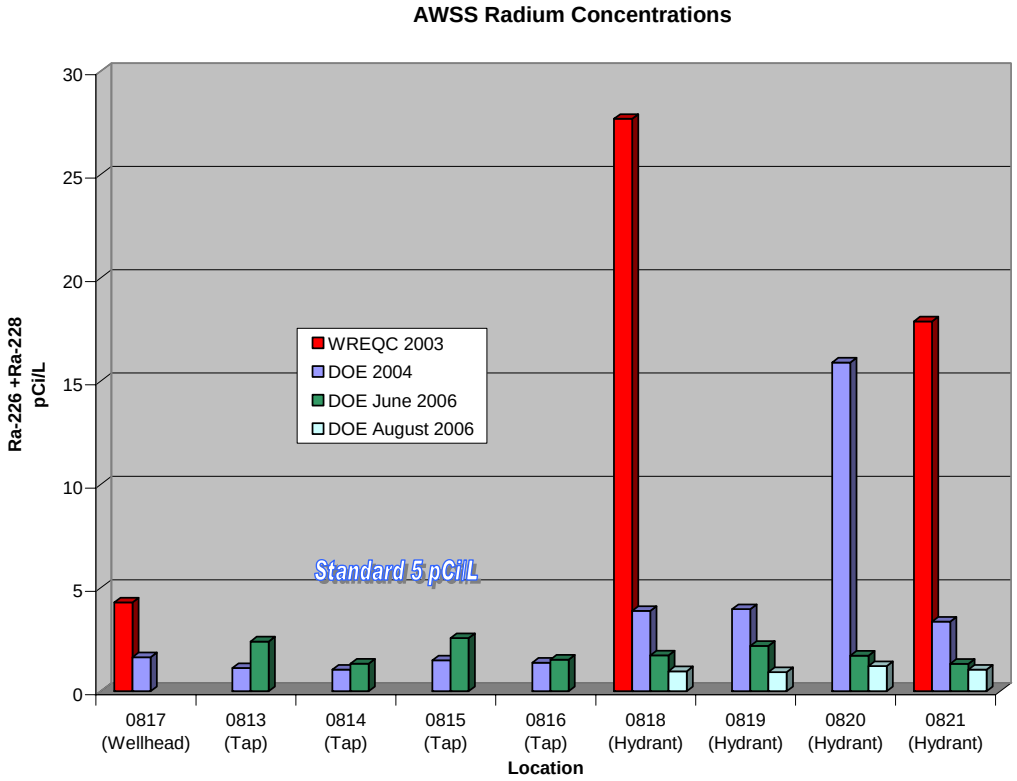


Figure 4–7. Radium Concentrations in the Alternate Water Supply System

Concentrations of radium-226, radium-228, uranium, and gross alpha in samples from residential taps have been below their respective Federal drinking water standard prior to and after the start of the flushing program.

Flow meters were installed at each hydrant during flushing to measure the volume of water flushed from the pipe. Volume measurements were made to make sure the calculated water volume contained within the pipe was flushed out; volume measurements were also used to calculate the velocity of the water moving through the pipe. Velocity data was used to determine if water movement within the pipeline was sufficient to remove sediment and debris and to scour biofilm from the inside of the pipe. According to the independent assessment (ASCG 2005), flushing velocities of 2 to 3 feet per second are needed to remove sediment and loosely attached particles, while flushing velocities of greater than 5 feet per second are required to scour and remove build-up of biofilm and material adhering to the wall of the pipe. Velocities measured during flushing ranged from 2.92 to 5.66 feet per second (Table 4–2) with an average velocity of 4.36 feet per second, which should remove sediment and loosely attached particles and, in sections of the pipeline, remove adhered material and biofilm.

Table 4–2. Flushing Flow Rates, Volumes, and Velocities in June 2006

Hydrant Location	Flushing Time (min)	Average Flow Rate (gpm)	Total Volume (gal)	Average Velocity (ft/sec)
0829	34	595.9	20,260	3.81
0830	63	630.2	39,700	2.92
0818	38	548.4	20,840	5.16
0819	104	460.0	43,200	2.94
0821	28	499.0	13,970	5.66
0820	6	496.0	3,150	5.63
0834	4	435	1,740	4.94

Soil sampling was also conducted adjacent to portions of the water line downgradient of the sulfuric acid plant to determine if historic acid leaks at the sulfuric acid plant have impacted the soils adjacent to the line. Measurements of pH were attempted at 0, 2, and 4 feet below ground surface at three locations (0831, 0832, and 0833 in Figure 2–2). Measurements ranged from 8.0 to 9.2 (Table 4–3), which indicate no impact to the soils adjacent to the water line from historic sulfuric acid spills at the plant.

Table 4–3. Ph Measurements in Soils Adjacent to the AWSS

Location	Depth (ft)	pH	Comments
0831	0	8.2	None
	2	8.6	None
	3.5	8.6	Auger refusal @ 3 feet, shovel to 3.5 feet
0832	0	8.2	None
	2	8.4	Auger refusal @ 9 inches, shovel to 2 feet
0833	0	8.0	None
	2	9.2	None
	4	8.7	None

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5.0 Natural Flushing Assessment

Ground water modeling has predicted that the alluvial aquifer will naturally flush contaminants to levels below applicable standards within the 100-year regulatory timeframe, which started with the approval of the GCAP in 1998. To assess the progress of natural flushing, comparison to hydrogeologic modeling predictions, trend analysis, and other quantitative techniques are applied to temporal plots of concentrations at individual wells.

Comparison of surficial aquifer concentrations of molybdenum and uranium as predicted by probabilistic hydrogeologic modeling (DOE 1998b) with actual concentrations measured in samples from monitor well 0707 (located near the center of the contaminant plumes) is shown in Figure 5–1. To date, concentrations of molybdenum and uranium in monitor well 0707 are tracking closely to model predictions, which show cleanup occurring well within the 100-year time frame.

Trend analysis using the Mann-Kendall test (Gilbert 1987) was performed to assess the temporal behavior of uranium concentrations. Uranium was selected as an indicator parameter because: (1) it is widespread throughout the surficial aquifer; (2) its concentration exceeded the standard in numerous wells in the monitoring network during 2006; (3) historical concentrations are up to two orders of magnitude above the standard; and (4) it was one of the constituents whose transport was modeled in previous investigations (DOE 1998b). The Mann-Kendall test determines if an upward trend, downward trend, or no trend exists. As shown in Table 5–1, the four wells that have recent uranium concentrations above the standard and that have more than 10 historical data points show downward trends.

Table 5–1. Assessment of Uranium Concentration Trends and Flushing Times in Wells at the Riverton Site

Well ID	Trend[a]	N[b]	Curve Type	Curve Correlation (r[c])	Estimated Completion (Years)
0707	Downward	13	Exponential	0.9137	50.7
0716	Downward	13	Exponential	0.9060	36.7
0718	Downward	13	Logarithmic	0.9035	146
0722[d]	Downward	11	Exponential	0.8588	34.3

[a]Data collected from 1996 to 2006. Well 0722 was destroyed in 2005 and, therefore, has no data for 2006.
[b]N=number of observations.
[c]r=Correlation coefficient – a value of 1 represents a perfect correlation.
[d]Well 0722 was located immediately adjacent to well 0723 in Figure 2-2.

To further assess the progress of natural flushing and estimate the pace with which it is occurring, additional data analysis was conducted. Curve–fitting techniques in Microsoft Excel computer software package were used to approximate actual uranium concentration data (Figure 5–2 and Figure 5–3). Each resulting curve was then extrapolated to the point where it intercepts the uranium standard, and the corresponding time provide an estimate of flushing time. As shown in Table 5–1, the number of years estimated to achieve compliance with the uranium standard ranges from 34.3 to 146. Although 146 years is longer than the 100-year regulatory limit, estimates will likely change as more data are collected. Correlation coefficients resulting from the curves fit to each well's data are listed in Table 5–1. These coefficients estimate how well the fitted curves match the data, with a perfect correlation equaling 1.

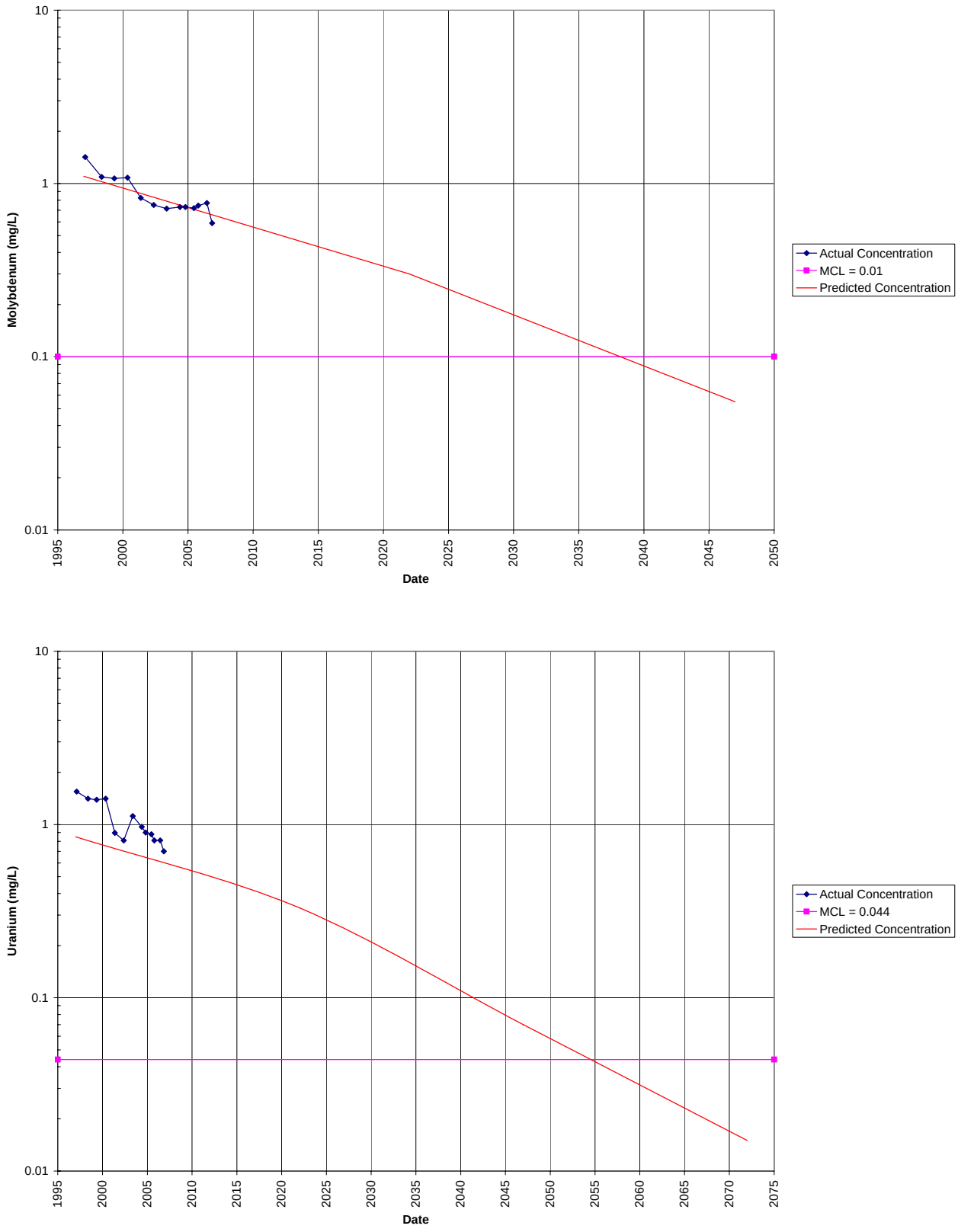
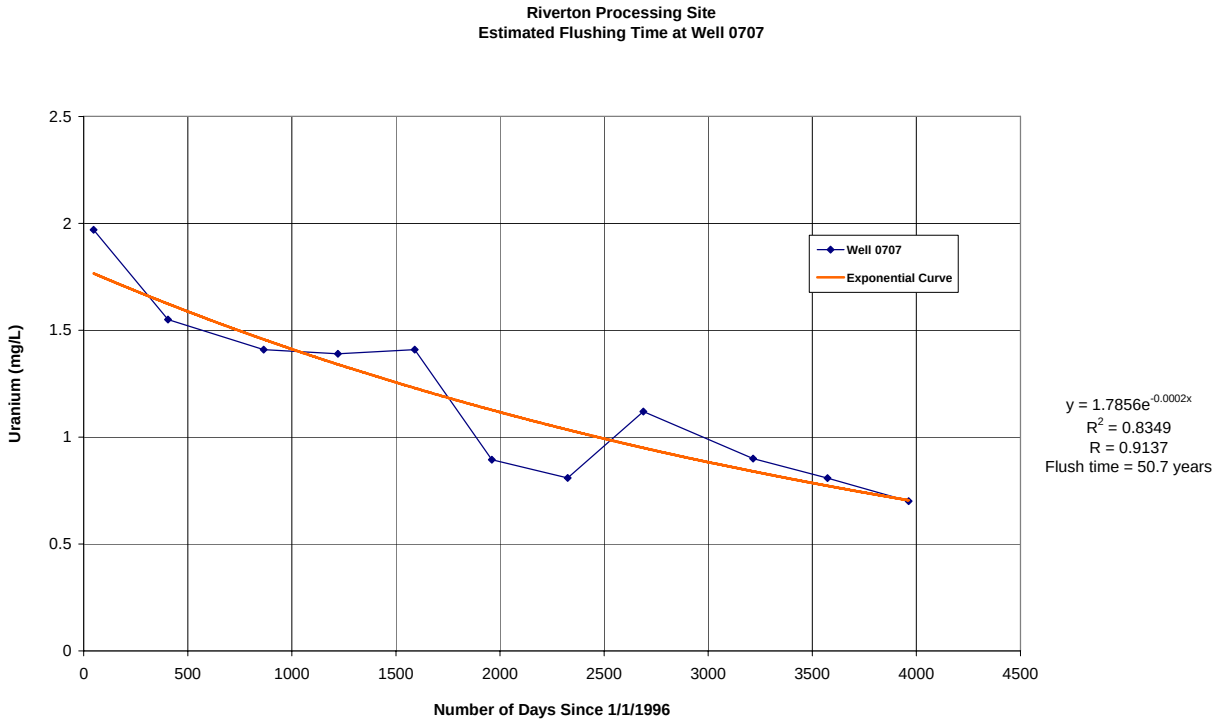


Figure 5–1. Predicted Versus Actual Contaminant Concentrations in Well 0707



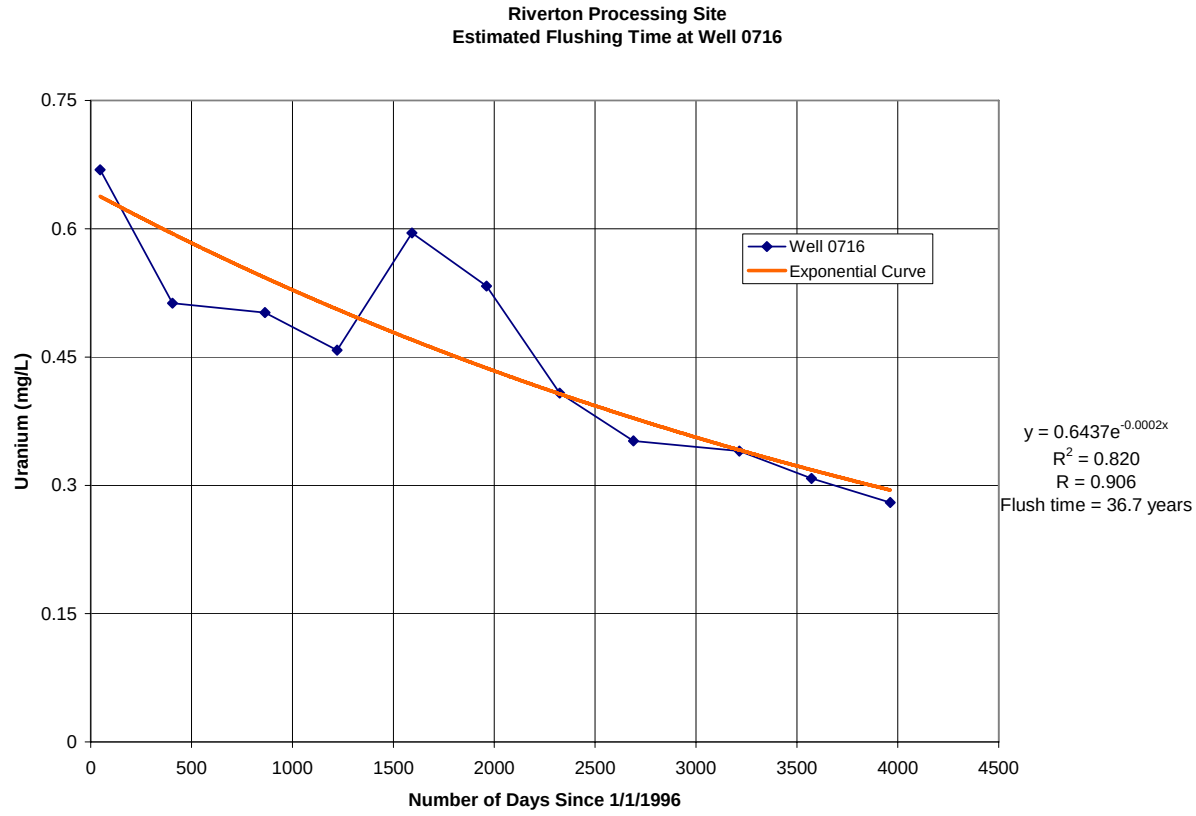
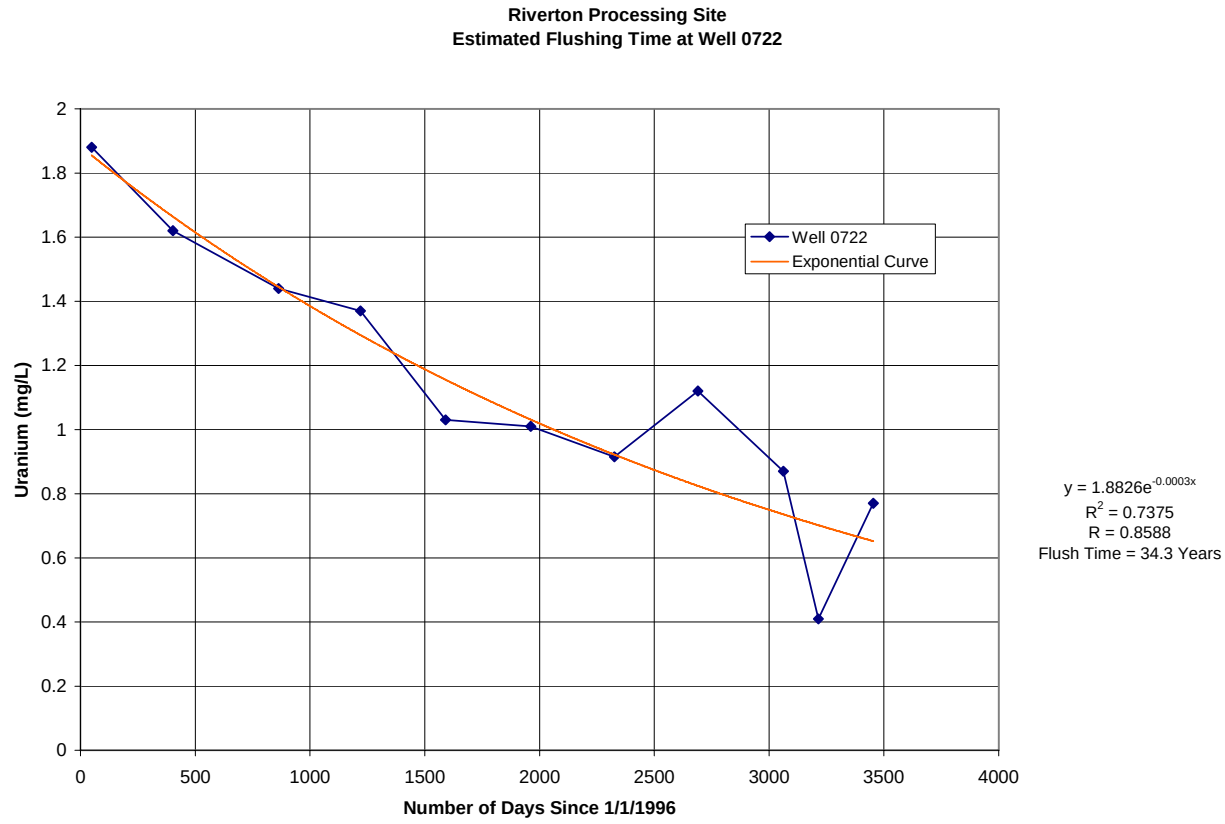


Figure 5–2. Estimated Flushing Time in Surficial Aquifer Wells 0707 and 0716



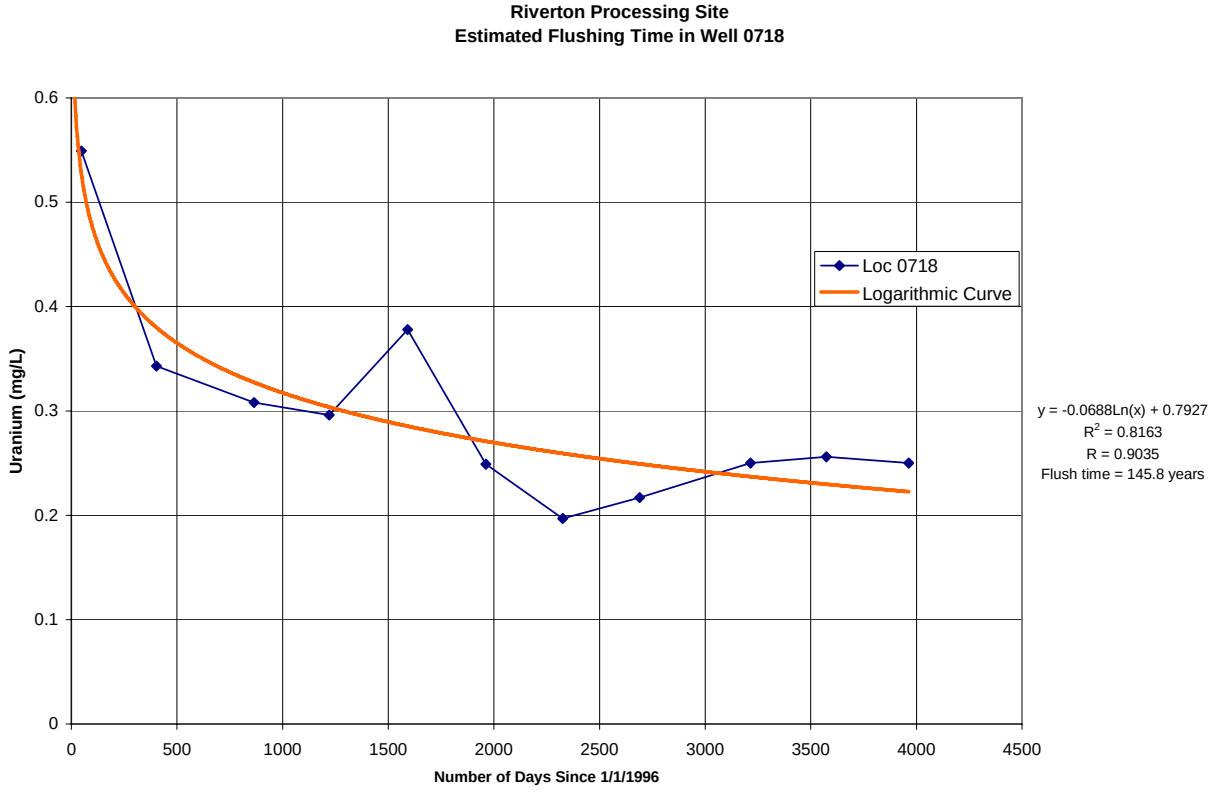


Figure 5–3. Estimated Flushing Time in Surficial Aquifer Wells 0718 and 0722

6.0 Conclusions

Uranium and molybdenum are the indicator constituents for compliance monitoring at the Riverton site (DOE 1998a). While concentrations of both uranium and molybdenum in ground water in the surficial aquifer are still above their respective MCLs, levels are generally decreasing and comparable to modeling predictions, indicating that natural flushing is occurring in the aquifer. Uranium concentrations in wells above the standard show a downward statistical trend, and curve extrapolation of uranium concentrations project a flushing time for most wells in less than 60 years. Data from one well projects a flushing time of more than 100 years. Surface water in the oxbow lake adjacent to the Little Wind River continues to be impacted as it is fed by discharge of shallow ground water from contaminant plumes, although concentrations are decreasing.

Verification monitoring of ground water and surface water from designated locations will continue on a semiannual basis, and the long-term monitoring program for the site will be specified in the *Long Term Maintenance Plan for the Riverton, Wyoming, Processing Site* (in progress).

End of current text

7.0 References

ASCG Inc., 2005. *Evaluation of the Alternate Supply System Riverton, Wyoming*, Project No. 500723, Lakewood, Colorado, July.

Babits, Steven, 2003. *Wind River Environmental Quality Commission UMTRA Program - Phase II Groundwater/Drinking Water Final Report*, prepared for Wind River Environmental Quality Commission and U.S. Environmental Protection Agency Region VIII, Lander, Wyoming, September.

Gilbert, Richard O., 1987. *Statistical Methods for Environmental Pollution Monitoring*, Van Nostrand Reinhold, New York, New York.

U.S. Department of Energy (DOE), 1998a. *Final Ground Water Compliance Action Plan for the Riverton, Wyoming, Title I UMTRA Project Site*, attached to letter from DOE to NRC of September 22, 1998, U.S. Department of Energy, Grand Junction Office.

———, 1998b. *Final Site Observational Work Plan for the UMTRA Project Site at Riverton, Wyoming*, U0013801, U.S. Department of Energy, Grand Junction Office, February.

———, 1998c. *Environmental Assessment of Ground Water Compliance at the Riverton, Wyoming, Uranium Mill Tailings Site*, DOE/EA-1261, Rev 0, U.S. Department of Energy, Grand Junction Office, September.

———, 2001. *Verification Monitoring Report, Riverton, Wyoming, UMTRA Project Site*, GJO-2001-255-TAR, September.

———, 2002. *Verification Monitoring Report for the Riverton, Wyoming, UMTRA Project Site, Update for 2002*, GJO-2002-352-TAC, August.

———, 2003. *Verification Monitoring Report for the Riverton, Wyoming, UMTRA Project Site, Update for 2003*, GJO-2003-461-TAC, U.S. Department of Energy, Grand Junction Office, July.

———, 2004. *Verification Monitoring Report for the Riverton, Wyoming, Processing Site, Update for 2004*, DOE-LM/GJ822-2005, U.S. Department of Energy, Grand Junction Office, April.

———, 2006. *Verification Monitoring Report for the Riverton, Wyoming, Processing Site, Update for 2005*, DOE-LM/GJ1127-2006, U.S. Department of Energy, Grand Junction Office, April.

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Appendix A

Ground Water Quality Data

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CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0705	WL	06/14/2006	0001	SE	D	65		FQ	#	-	-
	mg/L	0705	WL	11/07/2006	0001	SE	D	62		FQ	#	-	-
	mg/L	0707	WL	06/14/2006	0001	SF	D	368		F	#	-	-
	mg/L	0707	WL	11/07/2006	0001	SF	D	311		F	#	-	-
	mg/L	0710	WL	06/14/2006	N001	SF	U	304		F	#	-	-
	mg/L	0710	WL	11/07/2006	0001	SF	U	162		F	#	-	-
	mg/L	0716	WL	06/15/2006	N001	SF	O	534		F	#	-	-
	mg/L	0716	WL	11/07/2006	0001	SF	O	285		F	#	-	-
	mg/L	0717	WL	06/15/2006	N001	SE	O	215		F	#	-	-
	mg/L	0717	WL	11/07/2006	0001	SE	O	204		F	#	-	-
	mg/L	0718	WL	06/15/2006	0001	SF	D	399		F	#	-	-
	mg/L	0718	WL	11/08/2006	0001	SF	D	404		F	#	-	-
	mg/L	0719	WL	06/15/2006	0001	SE	D	106		FQ	#	-	-
	mg/L	0719	WL	11/08/2006	0001	SE	D	99		FQ	#	-	-
	mg/L	0720	WL	06/14/2006	N001	SF	C	242		F	#	-	-
	mg/L	0721	WL	06/14/2006	N001	SE	C	105		F	#	-	-
	mg/L	0721	WL	11/08/2006	0001	SE	C	95		F	#	-	-
	mg/L	0723	WL	06/15/2006	0001	SE	D	460		F	#	-	-
	mg/L	0723	WL	11/08/2006	0001	SE	D	367		F	#	-	-
	mg/L	0729	WL	06/15/2006	0001	SF	D	274		F	#	-	-
	mg/L	0729	WL	11/08/2006	0001	SF	D	390		F	#	-	-
	mg/L	0730	WL	06/15/2006	0001	SE	D	211		FQ	#	-	-
	mg/L	0730	WL	11/08/2006	0001	SE	D	408		F	#	-	-
	mg/L	0735	WL	06/13/2006	0001	SE	D	142		F	#	-	-
	mg/L	0735	WL	11/07/2006	0001	SE	D	161		F	#	-	-
	mg/L	0784	WL	06/15/2006	N001	SF	U	453		F	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0784	WL	11/07/2006	0001	SF	U	393		F	#	-	-
	mg/L	0788	WL	06/14/2006	0001	SF	C	385		F	#	-	-
	mg/L	0789	WL	11/07/2006	0001	SF	D	448		F	#	-	-
	mg/L	0809	WL	06/13/2006	0001	SF		158		F	#	-	-
	mg/L	0809	WL	11/07/2006	0001	SF		158		F	#	-	-
Manganese	mg/L	0705	WL	06/14/2006	0001	SE	D	0.00023	U	FQ	#	0.00023	-
	mg/L	0705	WL	11/07/2006	0001	SE	D	0.043		FQ	#	6.7E-05	-
	mg/L	0707	WL	06/14/2006	0001	SF	D	1.300		F	#	0.00046	-
	mg/L	0707	WL	11/07/2006	0001	SF	D	1.200		F	#	0.00034	-
	mg/L	0710	WL	06/14/2006	0001	SF	U	0.030		F	#	0.00023	-
	mg/L	0710	WL	11/07/2006	0001	SF	U	0.0031	B	F	#	6.7E-05	-
	mg/L	0716	WL	06/15/2006	0001	SF	O	0.420		F	#	0.00023	-
	mg/L	0716	WL	11/07/2006	0001	SF	O	0.300		F	#	6.7E-05	-
	mg/L	0717	WL	06/15/2006	0001	SE	O	0.160		F	#	0.00023	-
	mg/L	0717	WL	11/07/2006	0001	SE	O	0.190		F	#	6.7E-05	-
	mg/L	0718	WL	06/15/2006	0001	SF	D	2.200		F	#	0.00046	-
	mg/L	0718	WL	06/15/2006	0002	SF	D	2.300		F	#	0.00046	-
	mg/L	0718	WL	11/08/2006	0001	SF	D	1.200		F	#	0.00034	-
	mg/L	0719	WL	06/15/2006	0001	SE	D	0.200		FQ	#	0.00023	-
	mg/L	0719	WL	11/08/2006	0001	SE	D	0.200		FQ	#	6.7E-05	-
	mg/L	0720	WL	06/14/2006	0001	SF	C	0.016		F	#	0.00023	-
	mg/L	0720	WL	11/08/2006	0001	SF	C	0.004	B	F	#	6.7E-05	-
	mg/L	0721	WL	06/14/2006	0001	SE	C	0.0052		F	#	0.00023	-
	mg/L	0721	WL	11/08/2006	0001	SE	C	0.0037	B	F	#	6.7E-05	-
	mg/L	0721	WL	11/08/2006	0002	SE	C	0.0041	B	F	#	6.7E-05	-
	mg/L	0723	WL	06/15/2006	0001	SE	D	0.710		F	#	0.00046	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Manganese	mg/L	0723	WL	11/08/2006	0001	SE	D	0.590		F	#	0.00034	-
	mg/L	0729	WL	06/15/2006	0001	SF	D	0.033		F	#	0.00023	-
	mg/L	0729	WL	11/08/2006	0001	SF	D	0.0023	B	F	#	6.7E-05	-
	mg/L	0730	WL	06/15/2006	0001	SE	D	0.077		FQ	#	0.00023	-
	mg/L	0730	WL	11/08/2006	0001	SE	D	0.064		F	#	6.7E-05	-
	mg/L	0735	WL	06/13/2006	0001	SE	D	0.075		F	#	0.00023	-
	mg/L	0735	WL	11/07/2006	0001	SE	D	0.110		F	#	6.7E-05	-
	mg/L	0784	WL	06/15/2006	0001	SF	U	0.310		F	#	0.00046	-
	mg/L	0784	WL	11/07/2006	0001	SF	U	0.380		F	#	0.00034	-
	mg/L	0788	WL	06/14/2006	0001	SF	C	0.025		F	#	0.00023	-
	mg/L	0788	WL	11/07/2006	0001	SF	C	0.0033	B	F	#	6.7E-05	-
	mg/L	0789	WL	11/07/2006	0001	SF	D	0.500		F	#	0.00034	-
	mg/L	0789	WL	11/07/2006	0002	SF	D	0.480		F	#	0.00034	-
	mg/L	0809	WL	06/13/2006	0001	SF		0.110		F	#	0.00023	-
	mg/L	0809	WL	11/07/2006	0001	SF		0.670		F	#	6.7E-05	-
Molybdenum	mg/L	0705	WL	06/14/2006	0001	SE	D	0.0027		FQ	#	0.00021	-
	mg/L	0705	WL	11/07/2006	0001	SE	D	0.0029		FQ	#	0.00013	-
	mg/L	0707	WL	06/14/2006	0001	SF	D	0.770		F	#	0.0042	-
	mg/L	0707	WL	11/07/2006	0001	SF	D	0.590		F	#	0.0027	-
	mg/L	0710	WL	06/14/2006	0001	SF	U	0.0015		F	#	0.00021	-
	mg/L	0710	WL	11/07/2006	0001	SF	U	0.0019		UF	#	0.00013	-
	mg/L	0716	WL	06/15/2006	0001	SF	O	0.190		F	#	0.0021	-
	mg/L	0716	WL	11/07/2006	0001	SF	O	0.130		F	#	0.0013	-
	mg/L	0717	WL	06/15/2006	0001	SE	O	0.0077		F	#	0.00021	-
	mg/L	0717	WL	11/07/2006	0001	SE	O	0.0052		F	#	0.00013	-
	mg/L	0718	WL	06/15/2006	0001	SF	D	0.094		F	#	0.001	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	0718	WL	06/15/2006	0002	SF	D	0.098		F	#	0.001	-
	mg/L	0718	WL	11/08/2006	0001	SF	D	0.120		F	#	0.00067	-
	mg/L	0719	WL	06/15/2006	0001	SE	D	0.013		FQ	#	0.00021	-
	mg/L	0719	WL	11/08/2006	0001	SE	D	0.012		FQ	#	0.00013	-
	mg/L	0720	WL	06/14/2006	0001	SF	C	0.0016		F	#	0.00021	-
	mg/L	0720	WL	11/08/2006	0001	SF	C	0.0025		F	#	0.00013	-
	mg/L	0721	WL	06/14/2006	0001	SE	C	0.0027		F	#	0.00021	-
	mg/L	0721	WL	11/08/2006	0001	SE	C	0.0029		F	#	0.00013	-
	mg/L	0721	WL	11/08/2006	0002	SE	C	0.0025		F	#	0.00013	-
	mg/L	0723	WL	06/15/2006	0001	SE	D	0.00087	B	UF	#	0.00021	-
	mg/L	0723	WL	11/08/2006	0001	SE	D	0.00039	B	UF	#	0.00013	-
	mg/L	0729	WL	06/15/2006	0001	SF	D	0.0039		F	#	0.00021	-
	mg/L	0729	WL	11/08/2006	0001	SF	D	0.0031		F	#	0.00013	-
	mg/L	0730	WL	06/15/2006	0001	SE	D	0.0049		FQ	#	0.00021	-
	mg/L	0730	WL	11/08/2006	0001	SE	D	0.0033		F	#	0.00013	-
	mg/L	0735	WL	06/13/2006	0001	SE	D	0.0025		F	#	0.00021	-
	mg/L	0735	WL	11/07/2006	0001	SE	D	0.0023		F	#	0.00013	-
	mg/L	0784	WL	06/15/2006	0001	SF	U	0.016		F	#	0.00021	-
	mg/L	0784	WL	11/07/2006	0001	SF	U	0.015		F	#	0.00013	-
	mg/L	0788	WL	06/14/2006	0001	SF	C	0.026		F	#	0.00021	-
	mg/L	0788	WL	11/07/2006	0001	SF	C	0.030		F	#	0.00013	-
	mg/L	0789	WL	11/07/2006	0001	SF	D	0.400		F	#	0.0067	-
	mg/L	0789	WL	11/07/2006	0002	SF	D	0.380		F	#	0.0067	-
	mg/L	0809	WL	06/13/2006	0001	SF		0.0023		F	#	0.00021	-
	mg/L	0809	WL	11/07/2006	0001	SF		0.0019		UF	#	0.00013	-
Oxidation Reduction Potent	mV	0705	WL	06/14/2006	N001	SE	D	48.6		FQ	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0705	WL	11/07/2006	N001	SE	D	29		FQ	#	-	-
	mV	0707	WL	06/14/2006	N001	SF	D	70.3		F	#	-	-
	mV	0707	WL	11/07/2006	N001	SF	D	38		F	#	-	-
	mV	0710	WL	06/14/2006	N001	SF	U	142		F	#	-	-
	mV	0710	WL	11/07/2006	N001	SF	U	58.4		F	#	-	-
	mV	0716	WL	06/15/2006	N001	SF	O	-5		F	#	-	-
	mV	0716	WL	11/07/2006	N001	SF	O	71		F	#	-	-
	mV	0717	WL	06/15/2006	N001	SE	O	-162		F	#	-	-
	mV	0717	WL	11/07/2006	N001	SE	O	-212		F	#	-	-
	mV	0718	WL	06/15/2006	N001	SF	D	135.6		F	#	-	-
	mV	0718	WL	11/08/2006	N001	SF	D	-158		F	#	-	-
	mV	0719	WL	06/15/2006	N001	SE	D	-75.2		FQ	#	-	-
	mV	0719	WL	11/08/2006	N001	SE	D	-241		FQ	#	-	-
	mV	0720	WL	06/14/2006	N001	SF	C	111		F	#	-	-
	mV	0720	WL	11/08/2006	N001	SF	C	119.8		F	#	-	-
	mV	0721	WL	06/14/2006	N001	SE	C	-156		F	#	-	-
	mV	0721	WL	11/08/2006	N001	SE	C	17.8		F	#	-	-
	mV	0723	WL	06/15/2006	N001	SE	D	-29.3		F	#	-	-
	mV	0723	WL	11/08/2006	N001	SE	D	-80.0		F	#	-	-
	mV	0729	WL	06/15/2006	N001	SF	D	140.5		F	#	-	-
	mV	0729	WL	11/08/2006	N001	SF	D	-110		F	#	-	-
	mV	0730	WL	06/15/2006	N001	SE	D	-69.4		FQ	#	-	-
	mV	0730	WL	11/08/2006	N001	SE	D	-236		F	#	-	-
	mV	0735	WL	06/13/2006	N001	SE	D	94.1		F	#	-	-
	mV	0735	WL	11/07/2006	N001	SE	D	82		F	#	-	-
	mV	0784	WL	06/15/2006	N001	SF	U	67		F	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0784	WL	11/07/2006	N001	SF	U	143		F	#	-	-
	mV	0788	WL	06/14/2006	N001	SF	C	-10.7		F	#	-	-
	mV	0788	WL	11/07/2006	N001	SF	C	27.2		F	#	-	-
	mV	0789	WL	11/07/2006	N001	SF	D	141.6		F	#	-	-
	mV	0809	WL	06/13/2006	N001	SF		123.9		F	#	-	-
	mV	0809	WL	11/07/2006	N001	SF		118		F	#	-	-
pH	s.u.	0705	WL	06/14/2006	N001	SE	D	8.48		FQ	#	-	-
	s.u.	0705	WL	11/07/2006	N001	SE	D	8.27		FQ	#	-	-
	s.u.	0707	WL	06/14/2006	N001	SF	D	7.09		F	#	-	-
	s.u.	0707	WL	11/07/2006	N001	SF	D	7.04		F	#	-	-
	s.u.	0710	WL	06/14/2006	N001	SF	U	7.48		F	#	-	-
	s.u.	0710	WL	11/07/2006	N001	SF	U	7.46		F	#	-	-
	s.u.	0716	WL	06/15/2006	N001	SF	O	7.18		F	#	-	-
	s.u.	0716	WL	11/07/2006	N001	SF	O	7.13		F	#	-	-
	s.u.	0717	WL	06/15/2006	N001	SE	O	7.72		F	#	-	-
	s.u.	0717	WL	11/07/2006	N001	SE	O	7.69		F	#	-	-
	s.u.	0718	WL	06/15/2006	N001	SF	D	7.30		F	#	-	-
	s.u.	0718	WL	11/08/2006	N001	SF	D	7.08		F	#	-	-
	s.u.	0719	WL	06/15/2006	N001	SE	D	7.97		FQ	#	-	-
	s.u.	0719	WL	11/08/2006	N001	SE	D	7.90		FQ	#	-	-
	s.u.	0720	WL	06/14/2006	N001	SF	C	7.28		F	#	-	-
	s.u.	0720	WL	11/08/2006	N001	SF	C	7.35		F	#	-	-
	s.u.	0721	WL	06/14/2006	N001	SE	C	8.83		F	#	-	-
	s.u.	0721	WL	11/08/2006	N001	SE	C	8.77		F	#	-	-
	s.u.	0723	WL	06/15/2006	N001	SE	D	7.16		F	#	-	-
	s.u.	0723	WL	11/08/2006	N001	SE	D	7.08		F	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	0729	WL	06/15/2006	N001	SF	D	7.38		F	#	-	-
	s.u.	0729	WL	11/08/2006	N001	SF	D	7.16		F	#	-	-
	s.u.	0730	WL	06/15/2006	N001	SE	D	7.87		FQ	#	-	-
	s.u.	0730	WL	11/08/2006	N001	SE	D	7.48		F	#	-	-
	s.u.	0735	WL	06/13/2006	N001	SE	D	7.71		F	#	-	-
	s.u.	0735	WL	11/07/2006	N001	SE	D	7.69		F	#	-	-
	s.u.	0784	WL	06/15/2006	N001	SF	U	7.83		F	#	-	-
	s.u.	0784	WL	11/07/2006	N001	SF	U	7.90		F	#	-	-
	s.u.	0788	WL	06/14/2006	N001	SF	C	7.50		F	#	-	-
	s.u.	0788	WL	11/07/2006	N001	SF	C	7.35		F	#	-	-
	s.u.	0789	WL	11/07/2006	N001	SF	D	7.03		F	#	-	-
	s.u.	0809	WL	06/13/2006	N001	SF		7.66		F	#	-	-
	s.u.	0809	WL	11/07/2006	N001	SF		7.49		F	#	-	-
Specific Conductance	umhos/cm	0705	WL	06/14/2006	N001	SE	D	1303		FQ	#	-	-
	umhos/cm	0705	WL	11/07/2006	N001	SE	D	1240		FQ	#	-	-
	umhos/cm	0707	WL	06/14/2006	N001	SF	D	4235		F	#	-	-
	umhos/cm	0707	WL	11/07/2006	N001	SF	D	3707		F	#	-	-
	umhos/cm	0710	WL	06/14/2006	N001	SF	U	557		F	#	-	-
	umhos/cm	0710	WL	11/07/2006	N001	SF	U	442		F	#	-	-
	umhos/cm	0716	WL	06/15/2006	N001	SF	O	1349		F	#	-	-
	umhos/cm	0716	WL	11/07/2006	N001	SF	O	1321		F	#	-	-
	umhos/cm	0717	WL	06/15/2006	N001	SE	O	1867		F	#	-	-
	umhos/cm	0717	WL	11/07/2006	N001	SE	O	1908		F	#	-	-
	umhos/cm	0718	WL	06/15/2006	N001	SF	D	4218		F	#	-	-
	umhos/cm	0718	WL	11/08/2006	N001	SF	D	3967		F	#	-	-
	umhos/cm	0719	WL	06/15/2006	N001	SE	D	1170		FQ	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	0719	WL	11/08/2006	N001	SE	D	1135		FQ	#	-	-
	umhos/cm	0720	WL	06/14/2006	N001	SF	C	671		F	#	-	-
	umhos/cm	0720	WL	11/08/2006	N001	SF	C	599		F	#	-	-
	umhos/cm	0721	WL	06/14/2006	N001	SE	C	880		F	#	-	-
	umhos/cm	0721	WL	11/08/2006	N001	SE	C	872		F	#	-	-
	umhos/cm	0723	WL	06/15/2006	N001	SE	D	4256		F	#	-	-
	umhos/cm	0723	WL	11/08/2006	N001	SE	D	3881		F	#	-	-
	umhos/cm	0729	WL	06/15/2006	N001	SF	D	734		F	#	-	-
	umhos/cm	0729	WL	11/08/2006	N001	SF	D	771		F	#	-	-
	umhos/cm	0730	WL	06/15/2006	N001	SE	D	1089		FQ	#	-	-
	umhos/cm	0730	WL	11/08/2006	N001	SE	D	978		F	#	-	-
	umhos/cm	0735	WL	06/13/2006	N001	SE	D	1557		F	#	-	-
	umhos/cm	0735	WL	11/07/2006	N001	SE	D	1569		F	#	-	-
	umhos/cm	0784	WL	06/15/2006	N001	SF	U	4863		F	#	-	-
	umhos/cm	0784	WL	11/07/2006	N001	SF	U	5079		F	#	-	-
	umhos/cm	0788	WL	06/14/2006	N001	SF	C	2142		F	#	-	-
	umhos/cm	0788	WL	11/07/2006	N001	SF	C	1969		F	#	-	-
	umhos/cm	0789	WL	11/07/2006	N001	SF	D	6622		F	#	-	-
	umhos/cm	0809	WL	06/13/2006	N001	SF		363		F	#	-	-
	umhos/cm	0809	WL	11/07/2006	N001	SF		774		F	#	-	-
Sulfate	mg/L	0705	WL	06/14/2006	0001	SE	D	440		FQ	#	5	-
	mg/L	0705	WL	11/07/2006	0001	SE	D	480		FQ	#	5	-
	mg/L	0707	WL	06/14/2006	0001	SF	D	2200		F	#	25	-
	mg/L	0707	WL	11/07/2006	0001	SF	D	2000		F	#	25	-
	mg/L	0710	WL	06/14/2006	0001	SF	U	93		F	#	2.5	-
	mg/L	0710	WL	11/07/2006	0001	SF	U	55		F	#	1	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	0716	WL	06/15/2006	0001	SF	O	400		F	#	10	-
	mg/L	0716	WL	11/07/2006	0001	SF	O	440		F	#	5	-
	mg/L	0717	WL	06/15/2006	0001	SE	O	700		F	#	10	-
	mg/L	0717	WL	11/07/2006	0001	SE	O	760		F	#	10	-
	mg/L	0718	WL	06/15/2006	0001	SF	D	1800		F	#	25	-
	mg/L	0718	WL	06/15/2006	0002	SF	D	1900		F	#	25	-
	mg/L	0718	WL	11/08/2006	0001	SF	D	1900		F	#	25	-
	mg/L	0719	WL	06/15/2006	0001	SE	D	400		FQ	#	5	-
	mg/L	0719	WL	11/08/2006	0001	SE	D	430		FQ	#	5	-
	mg/L	0720	WL	06/14/2006	0001	SF	C	1400		F	#	28	-
	mg/L	0720	WL	11/08/2006	0001	SF	C	110		F	#	5	-
	mg/L	0721	WL	06/14/2006	0001	SE	C	280		F	#	5	-
	mg/L	0721	WL	11/08/2006	0001	SE	C	290		F	#	5	-
	mg/L	0721	WL	11/08/2006	0002	SE	C	290		F	#	5	-
	mg/L	0723	WL	06/15/2006	0001	SE	D	2000		F	#	25	-
	mg/L	0723	WL	11/08/2006	0001	SE	D	390		F	#	5	-
	mg/L	0729	WL	06/15/2006	0001	SF	D	79		F	#	2.5	-
	mg/L	0729	WL	11/08/2006	0001	SF	D	83		F	#	5	-
	mg/L	0730	WL	06/15/2006	0001	SE	D	310		FQ	#	5	-
	mg/L	0730	WL	11/08/2006	0001	SE	D	190		F	#	5	-
	mg/L	0735	WL	06/13/2006	0001	SE	D	600		F	#	10	-
	mg/L	0735	WL	11/07/2006	0001	SE	D	630		F	#	5	-
	mg/L	0784	WL	06/15/2006	0001	SF	U	2100		F	#	25	-
	mg/L	0784	WL	11/07/2006	0001	SF	U	2500		F	#	25	-
	mg/L	0788	WL	06/14/2006	0001	SF	C	740		F	#	10	-
	mg/L	0788	WL	11/07/2006	0001	SF	C	690		F	#	10	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	0789	WL	11/07/2006	0001	SF	D	3800		F	#	25	-
	mg/L	0789	WL	11/07/2006	0002	SF	D	3900		F	#	25	-
	mg/L	0809	WL	06/13/2006	0001	SF		61		F	#	2.5	-
	mg/L	0809	WL	11/07/2006	0001	SF		250		F	#	5	-
Temperature	C	0705	WL	06/14/2006	N001	SE	D	12.53		FQ	#	-	-
	C	0705	WL	11/07/2006	N001	SE	D	11.72		FQ	#	-	-
	C	0707	WL	06/14/2006	N001	SF	D	10.87		F	#	-	-
	C	0707	WL	11/07/2006	N001	SF	D	12.01		F	#	-	-
	C	0710	WL	06/14/2006	N001	SF	U	9.5		F	#	-	-
	C	0710	WL	11/07/2006	N001	SF	U	12.5		F	#	-	-
	C	0716	WL	06/15/2006	N001	SF	O	13.09		F	#	-	-
	C	0716	WL	11/07/2006	N001	SF	O	13.3		F	#	-	-
	C	0717	WL	06/15/2006	N001	SE	O	12.06		F	#	-	-
	C	0717	WL	11/07/2006	N001	SE	O	11.8		F	#	-	-
	C	0718	WL	06/15/2006	N001	SF	D	11.20		F	#	-	-
	C	0718	WL	11/08/2006	N001	SF	D	15.0		F	#	-	-
	C	0719	WL	06/15/2006	N001	SE	D	13.51		FQ	#	-	-
	C	0719	WL	11/08/2006	N001	SE	D	12.9		FQ	#	-	-
	C	0720	WL	06/14/2006	N001	SF	C	10.18		F	#	-	-
	C	0720	WL	11/08/2006	N001	SF	C	13.98		F	#	-	-
	C	0721	WL	06/14/2006	N001	SE	C	11.81		F	#	-	-
	C	0721	WL	11/08/2006	N001	SE	C	12.73		F	#	-	-
	C	0723	WL	06/15/2006	N001	SE	D	13.01		F	#	-	-
	C	0723	WL	11/08/2006	N001	SE	D	13.94		F	#	-	-
	C	0729	WL	06/15/2006	N001	SF	D	12.37		F	#	-	-
	C	0729	WL	11/08/2006	N001	SF	D	14.0		F	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0730	WL	06/15/2006	N001	SE	D	12.86		FQ	#	-	-
	C	0730	WL	11/08/2006	N001	SE	D	12.9		F	#	-	-
	C	0735	WL	06/13/2006	N001	SE	D	11.93		F	#	-	-
	C	0735	WL	11/07/2006	N001	SE	D	13.01		F	#	-	-
	C	0784	WL	06/15/2006	N001	SF	U	13.88		F	#	-	-
	C	0784	WL	11/07/2006	N001	SF	U	14.1		F	#	-	-
	C	0788	WL	06/14/2006	N001	SF	C	10.26		F	#	-	-
	C	0788	WL	11/07/2006	N001	SF	C	12.23		F	#	-	-
	C	0789	WL	11/07/2006	N001	SF	D	12.44		F	#	-	-
	C	0809	WL	06/13/2006	N001	SF		12.62		F	#	-	-
	C	0809	WL	11/07/2006	N001	SF		13.36		F	#	-	-
Turbidity	NTU	0705	WL	06/14/2006	N001	SE	D	1.37		FQ	#	-	-
	NTU	0705	WL	11/07/2006	N001	SE	D	1.45		FQ	#	-	-
	NTU	0707	WL	06/14/2006	N001	SF	D	7.9		F	#	-	-
	NTU	0707	WL	11/07/2006	N001	SF	D	1.38		F	#	-	-
	NTU	0710	WL	06/14/2006	N001	SF	U	9.81		F	#	-	-
	NTU	0710	WL	11/07/2006	N001	SF	U	7.92		F	#	-	-
	NTU	0716	WL	06/15/2006	N001	SF	O	5.19		F	#	-	-
	NTU	0716	WL	11/07/2006	N001	SF	O	3.66		F	#	-	-
	NTU	0717	WL	06/15/2006	N001	SE	O	7.02		F	#	-	-
	NTU	0717	WL	11/07/2006	N001	SE	O	1.96		F	#	-	-
	NTU	0718	WL	06/15/2006	N001	SF	D	5.65		F	#	-	-
	NTU	0718	WL	11/08/2006	N001	SF	D	3.53		F	#	-	-
	NTU	0719	WL	06/15/2006	N001	SE	D	2.56		FQ	#	-	-
	NTU	0719	WL	11/08/2006	N001	SE	D	2.25		FQ	#	-	-
	NTU	0720	WL	06/14/2006	N001	SF	C	5.41		F	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0720	WL	11/08/2006	N001	SF	C	2.06		F	#	-	-
	NTU	0721	WL	06/14/2006	N001	SE	C	9.73		F	#	-	-
	NTU	0721	WL	11/08/2006	N001	SE	C	2.52		F	#	-	-
	NTU	0723	WL	06/15/2006	N001	SE	D	0.89		F	#	-	-
	NTU	0723	WL	11/08/2006	N001	SE	D	0.90		F	#	-	-
	NTU	0729	WL	06/15/2006	N001	SF	D	9.27		F	#	-	-
	NTU	0729	WL	11/08/2006	N001	SF	D	2.96		F	#	-	-
	NTU	0730	WL	06/15/2006	N001	SE	D	13.4		FQ	#	-	-
	NTU	0730	WL	11/08/2006	N001	SE	D	3.38		F	#	-	-
	NTU	0735	WL	06/13/2006	N001	SE	D	5.15		F	#	-	-
	NTU	0735	WL	11/07/2006	N001	SE	D	3.72		F	#	-	-
	NTU	0784	WL	06/15/2006	N001	SF	U	8.84		F	#	-	-
	NTU	0784	WL	11/07/2006	N001	SF	U	1.46		F	#	-	-
	NTU	0788	WL	06/14/2006	N001	SF	C	6.96		F	#	-	-
	NTU	0788	WL	11/07/2006	N001	SF	C	4.10		F	#	-	-
	NTU	0789	WL	11/07/2006	N001	SF	D	3.96		F	#	-	-
	NTU	0809	WL	06/13/2006	N001	SF		2.30		F	#	-	-
	NTU	0809	WL	11/07/2006	N001	SF		2.04		F	#	-	-
Uranium	mg/L	0705	WL	06/14/2006	0001	SE	D	0.00021	E	UFQ	#	3.4E-06	-
	mg/L	0705	WL	11/07/2006	0001	SE	D	0.00017		UFQ	#	4.8E-06	-
	mg/L	0707	WL	06/14/2006	0001	SF	D	0.810		F	#	6.8E-05	-
	mg/L	0707	WL	11/07/2006	0001	SF	D	0.700		F	#	9.7E-05	-
	mg/L	0710	WL	06/14/2006	0001	SF	U	0.0031		F	#	3.4E-06	-
	mg/L	0710	WL	11/07/2006	0001	SF	U	0.002		F	#	4.8E-06	-
	mg/L	0716	WL	06/15/2006	0001	SF	O	0.260		F	#	3.4E-05	-
	mg/L	0716	WL	11/07/2006	0001	SF	O	0.280		F	#	4.8E-05	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0717	WL	06/15/2006	0001	SE	O	0.00005	B	UF	#	3.4E-06	-
	mg/L	0717	WL	11/07/2006	0001	SE	O	0.00005	B	UF	#	4.8E-06	-
	mg/L	0718	WL	06/15/2006	0001	SF	D	0.190		F	#	1.7E-05	-
	mg/L	0718	WL	06/15/2006	0002	SF	D	0.200		F	#	1.7E-05	-
	mg/L	0718	WL	11/08/2006	0001	SF	D	0.250		F	#	2.4E-05	-
	mg/L	0719	WL	06/15/2006	0001	SE	D	0.00041		FQ	#	3.4E-06	-
	mg/L	0719	WL	11/08/2006	0001	SE	D	0.00033		FQ	#	4.8E-06	-
	mg/L	0720	WL	06/14/2006	0001	SF	C	0.0047		F	#	3.4E-06	-
	mg/L	0720	WL	11/08/2006	0001	SF	C	0.0042		F	#	4.8E-06	-
	mg/L	0721	WL	06/14/2006	0001	SE	C	0.00007	B	UF	#	3.4E-06	-
	mg/L	0721	WL	11/08/2006	0001	SE	C	0.00013		UF	#	4.8E-06	-
	mg/L	0721	WL	11/08/2006	0002	SE	C	0.00008	B	UF	#	4.8E-06	-
	mg/L	0723	WL	06/15/2006	0001	SE	D	0.00024		F	#	3.4E-06	-
	mg/L	0723	WL	11/08/2006	0001	SE	D	0.00006	B	UF	#	4.8E-06	-
	mg/L	0729	WL	06/15/2006	0001	SF	D	0.0084		F	#	3.4E-06	-
	mg/L	0729	WL	11/08/2006	0001	SF	D	0.010		F	#	4.8E-06	-
	mg/L	0730	WL	06/15/2006	0001	SE	D	0.0014		FQ	#	3.4E-06	-
	mg/L	0730	WL	11/08/2006	0001	SE	D	0.0066		F	#	4.8E-06	-
	mg/L	0735	WL	06/13/2006	0001	SE	D	0.00048		F	#	3.4E-06	-
	mg/L	0735	WL	11/07/2006	0001	SE	D	0.00025		F	#	4.8E-06	-
	mg/L	0784	WL	06/15/2006	0001	SF	U	0.0094		F	#	3.4E-06	-
	mg/L	0784	WL	11/07/2006	0001	SF	U	0.0065		F	#	4.8E-06	-
	mg/L	0788	WL	06/14/2006	0001	SF	C	0.036		F	#	3.4E-06	-
	mg/L	0788	WL	11/07/2006	0001	SF	C	0.035		F	#	4.8E-06	-
	mg/L	0789	WL	11/07/2006	0001	SF	D	1.700		F	#	0.00024	-
	mg/L	0789	WL	11/07/2006	0002	SF	D	1.600		F	#	0.00024	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0809	WL	06/13/2006	0001	SF		0.0015		F	#	3.4E-06	-
	mg/L	0809	WL	11/07/2006	0001	SF		0.0041		F	#	4.8E-06	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE200 WHERE site_code='RVT01' AND location_code in('0705','0707','0710','0716','0717','0718','0719','0720','0721','0723','0729','0730','0735','0784','0788','0789','0809') AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%N%' AND data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #1/1/2006# and #12/31/2006#

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

LOCATION TYPES: WL WELL

ZONES OF COMPLETION:

SE SEMICONFINED SANDSTONE SF SURFICIAL

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

LAB QUALIFIERS:

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

DATA QUALIFIERS:

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

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

Appendix B

Water Level Data

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STATIC WATER LEVELS (USEE700) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:41 pm

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	06/15/2006		10.70	4935.88	
		4946.58	11/08/2006		11.27	4935.31	
0110	O	4946.44	06/15/2006		11.65	4934.79	
		4946.44	11/08/2006		12.85	4933.59	
0111	O	4946.87	06/15/2006		9.66	4937.21	
		4946.87	11/08/2006		10.83	4936.04	
0700	U	4951.38	06/15/2006		7.32	4944.06	
		4951.38	11/08/2006	10:14	6.65	4944.73	
0702	D	4931.00	06/14/2006		6.31	4924.69	
0705	D	4930.80	06/14/2006		6.32	4924.48	
		4930.80	06/14/2006	12:05	6.19	4924.61	
		4930.80	11/07/2006	10:44	6.74	4924.06	
0707	D	4931.00	06/14/2006		5.66	4925.34	
		4931.00	06/14/2006	11:15	5.70	4925.30	
		4931.00	11/07/2006	11:25	5.84	4925.16	
0709	D	4930.70	06/14/2006		3.10	4927.60	
0710	U	4947.90	06/14/2006	17:23	5.84	4942.06	
		4947.90	11/07/2006	16:32	6.93	4940.97	
0716	O	4939.12	06/15/2006	11:34	8.49	4930.63	
		4939.12	11/07/2006	15:50	9.20	4929.92	
0717	O	4938.80	06/15/2006	11:01	8.68	4930.12	
		4938.80	11/07/2006	16:11	8.82	4929.98	
0718	D	4937.60	06/15/2006		8.49	4929.11	
		4937.60	06/15/2006	14:58	8.49	4929.11	
		4937.60	11/08/2006	09:10	8.60	4929.00	
0719	D	4937.55	06/15/2006		7.69	4929.86	
		4937.55	06/15/2006	15:48	7.69	4929.86	
		4937.55	11/08/2006	09:28	8.17	4929.38	
0720	C	4940.46	06/14/2006	08:36	5.33	4935.13	
		4940.46	11/08/2006	08:43	5.30	4935.16	
0721	C	4940.47	06/14/2006	08:58	8.23	4932.24	
		4940.47	11/08/2006	09:15	8.29	4932.18	
0723	D	4936.01	06/15/2006		6.08	4929.93	
		4936.01	06/15/2006	12:19	6.08	4929.93	

STATIC WATER LEVELS (USEE700) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:41 pm

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
0723	D	4936.01	11/08/2006	11:12	7.93	4928.08	
0724	U	4941.36	06/15/2006		6.49	4934.87	
		4941.36	11/08/2006		8.77	4932.59	
0725	U	4941.66	06/15/2006		6.55	4935.11	
		4941.66	11/08/2006		9.09	4932.57	
0726	U	4942.00	06/15/2006		6.28	4935.72	
		4942.00	11/08/2006		7.19	4934.81	
0727	U	4951.69	06/15/2006		8.83	4942.86	
		4951.69	11/08/2006		11.58	4940.11	
0728	U	4946.01	06/15/2006		7.33	4938.68	
		4946.01	11/08/2006		9.98	4936.03	
0729	D	4932.75	06/15/2006		5.17	4927.58	
		4932.75	06/15/2006	09:06	5.17	4927.58	
		4932.75	11/08/2006	08:37	6.84	4925.91	
0730	D	4933.08	06/15/2006		6.06	4927.02	
		4933.08	06/15/2006	10:30	6.06	4927.02	
		4933.08	11/08/2006	08:12	6.35	4926.73	
0731	U	4945.48	06/15/2006		8.12	4937.36	
0732	U	4945.07	06/15/2006		8.93	4936.14	
		4945.07	11/08/2006		8.97	4936.10	
0733	U	4946.76	06/15/2006		3.41	4943.35	
		4946.76	11/08/2006	08:30	7.75	4939.01	
0734	U	4946.08	06/15/2006		5.96	4940.12	
		4946.08	11/08/2006	08:35	8.64	4937.44	
0735	D	4934.16	06/13/2006	09:00	9.54	4924.62	
		4934.16	11/07/2006	09:23	10.33	4923.83	
0736	U	4946.00	06/15/2006		7.65	4938.35	
		4946.00	11/08/2006	13:42	7.74	4938.26	
0784	U	4945.45	06/15/2006	09:12	7.86	4937.59	
		4945.45	11/07/2006	14:39	7.76	4937.69	
0788	C	4935.09	06/14/2006		6.03	4929.06	
		4935.09	06/14/2006	17:07	9.01	4926.08	
		4935.09	11/07/2006	15:33	9.45	4925.64	
0789	D	4933.66	06/14/2006		8.66	4925.00	

STATIC WATER LEVELS (USEE700) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:41 pm

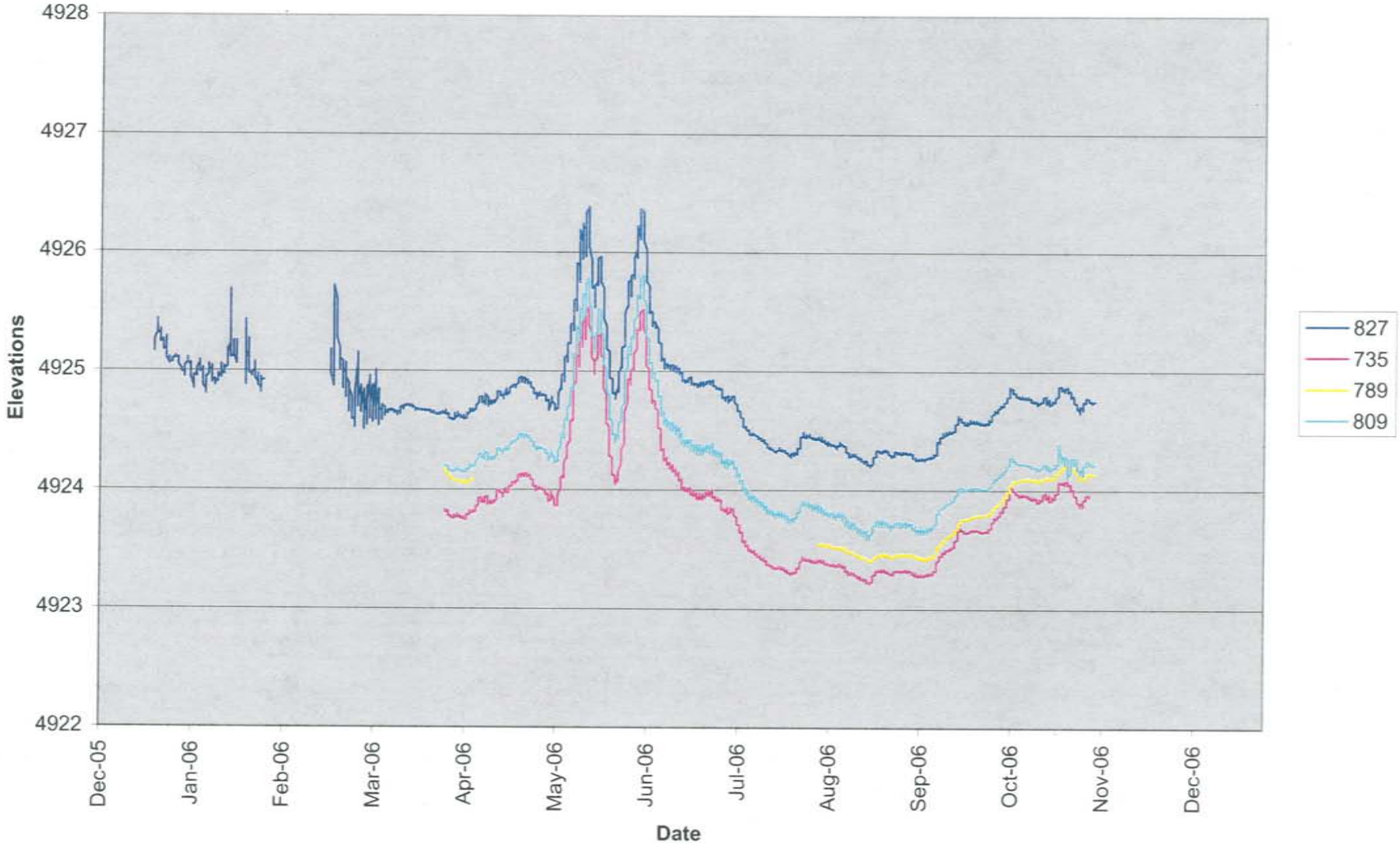
LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
			DATE	TIME			
0789	D	4933.66	11/07/2006	13:56	9.52	4924.14	
0809		4932.09	06/13/2006	09:16	7.04	4925.05	
		4932.09	11/07/2006	08:35	7.92	4924.17	

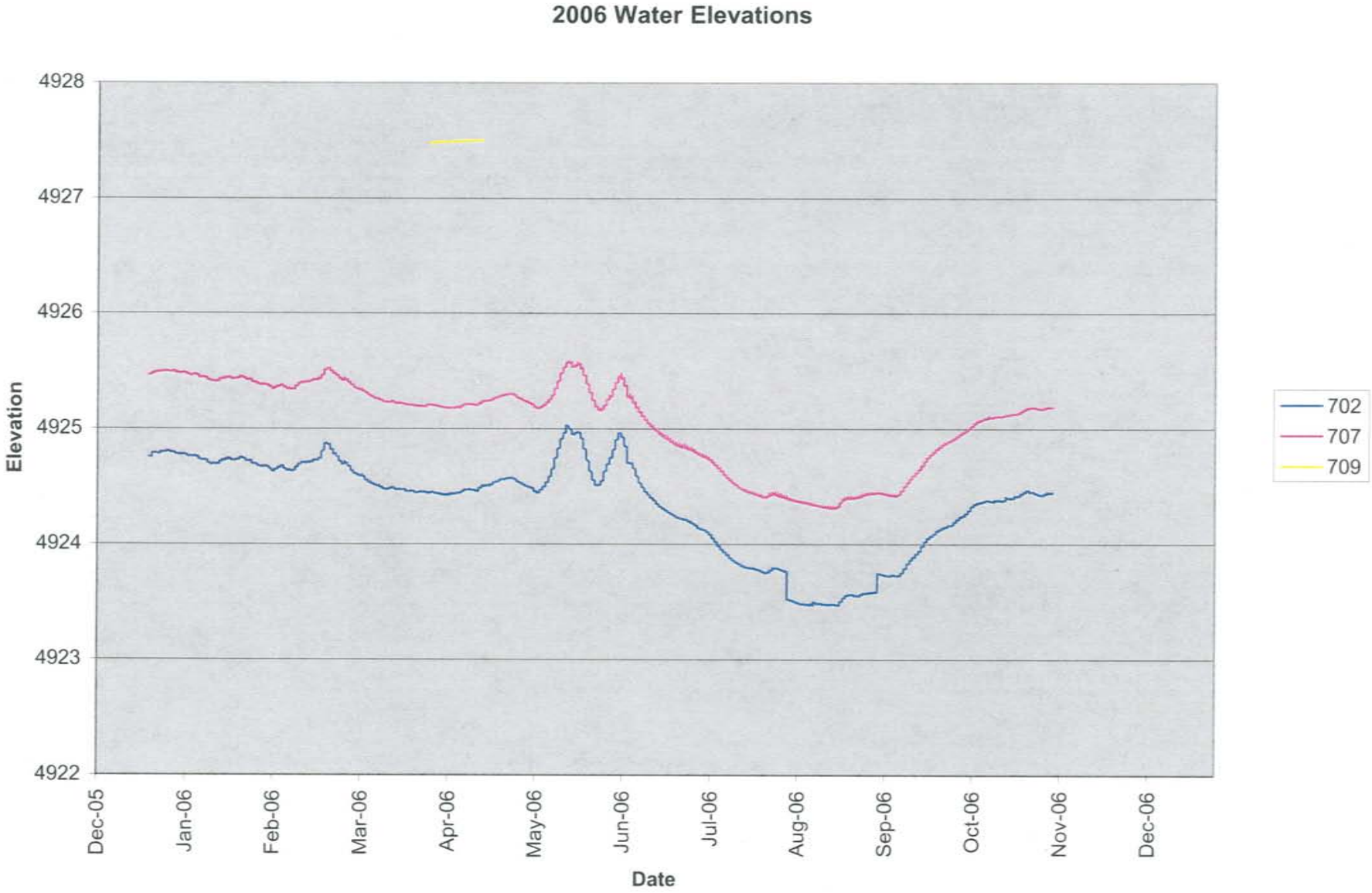
RECORDS: SELECTED FROM USEE700 WHERE site_code='RVT01' AND LOG_DATE between #1/1/2006# and #12/31/2006#

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

WATER LEVEL FLAGS:

2006 Water Elevations




2006 Water Elevations
4928
4927
4926
4925
4924
4923
4922
Elevation
Dec-05
Jan-06
Feb-06
Mar-06
Apr-06
May-06
Jun-06
Jul-06
Aug-06
Sep-06
Oct-06
Nov-06
Dec-06
Date
702
707
709

Appendix C

Domestic Well Data

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CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	ZONE COMPL	FLOW REL	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0405	WL	06/13/2006	0001	NR	N	117			#	-	-
	mg/L	0405	WL	11/07/2006	0001	NR	N	41			#	-	-
	mg/L	0422	WL	06/13/2006	0001	NR	N	203			#	-	-
	mg/L	0422	WL	11/07/2006	0001	NR	N	144			#	-	-
	mg/L	0430	WL	06/13/2006	0001	NR	N	166			#	-	-
	mg/L	0430	WL	11/07/2006	0001	NR	N	164			#	-	-
	mg/L	0436	WL	06/13/2006	0001	NR	N	174			#	-	-
	mg/L	0436	WL	11/07/2006	0001	NR	N	171			#	-	-
	mg/L	0454	WL	06/13/2006	0001			174			#	-	-
	mg/L	0454	WL	11/07/2006	0001			159			#	-	-
	mg/L	0460	WL	06/13/2006	0001	NR	N	174			#	-	-
	mg/L	0460	WL	11/07/2006	0001	NR	N	165			#	-	-
	mg/L	0828	WL	06/13/2006	0001		O	178			#	-	-
	mg/L	0828	WL	11/07/2006	0001		O	147			#	-	-
	mg/L	0951	WL	06/13/2006	N001	NR	N	130			#	-	-
	mg/L	0951	WL	11/07/2006	0001	NR	N	111			#	-	-
Dissolved Oxygen	mg/L	0951	WL	06/13/2006	N001	NR	N	3.98			#	-	-
Manganese	mg/L	0405	WL	06/13/2006	N001	NR	N	0.0023	B		#	0.00023	-
	mg/L	0405	WL	11/07/2006	N001	NR	N	0.0024	B	U	#	6.7E-05	-
	mg/L	0422	WL	06/13/2006	N001	NR	N	0.00085	B		#	0.00023	-
	mg/L	0422	WL	11/07/2006	N001	NR	N	0.0016	B	U	#	6.7E-05	-
	mg/L	0430	WL	06/13/2006	N001	NR	N	0.0021	B		#	0.00023	-
	mg/L	0430	WL	11/07/2006	N001	NR	N	0.0046	B	U	#	6.7E-05	-
	mg/L	0436	WL	06/13/2006	N001	NR	N	0.005	B		#	0.00023	-
	mg/L	0436	WL	11/07/2006	N001	NR	N	0.0057		U	#	6.7E-05	-
	mg/L	0454	WL	06/13/2006	N001			0.0074			#	0.00023	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Manganese	mg/L	0454	WL	11/07/2006	N001			0.00006	U		#	6.7E-05	-
	mg/L	0460	WL	06/13/2006	N001	NR	N	0.00088	B		#	0.00023	-
	mg/L	0460	WL	11/07/2006	N001	NR	N	0.00016	B	U	#	6.7E-05	-
	mg/L	0828	WL	06/13/2006	N001		O	0.0046	B		#	0.00023	-
	mg/L	0828	WL	11/07/2006	N001		O	0.006			#	6.7E-05	-
	mg/L	0951	WL	06/13/2006	N001	NR	N	0.0036	B		#	0.00023	-
	mg/L	0951	WL	11/07/2006	N001	NR	N	0.0059		U	#	6.7E-05	-
Molybdenum	mg/L	0405	WL	06/13/2006	N001	NR	N	0.0032			#	0.00021	-
	mg/L	0405	WL	11/07/2006	N001	NR	N	0.0049			#	0.00013	-
	mg/L	0422	WL	06/13/2006	N001	NR	N	0.0018			#	0.00021	-
	mg/L	0422	WL	11/07/2006	N001	NR	N	0.0019			#	0.00013	-
	mg/L	0430	WL	06/13/2006	N001	NR	N	0.0022			#	0.00021	-
	mg/L	0430	WL	11/07/2006	N001	NR	N	0.0023			#	0.00013	-
	mg/L	0436	WL	06/13/2006	N001	NR	N	0.0032			#	0.00021	-
	mg/L	0436	WL	11/07/2006	N001	NR	N	0.0036			#	0.00013	-
	mg/L	0454	WL	06/13/2006	N001			0.0017			#	0.00021	-
	mg/L	0454	WL	11/07/2006	N001			0.0025			#	0.00013	-
	mg/L	0460	WL	06/13/2006	N001	NR	N	0.0028			#	0.00021	-
	mg/L	0460	WL	11/07/2006	N001	NR	N	0.0031			#	0.00013	-
	mg/L	0828	WL	06/13/2006	N001		O	0.0032			#	0.00021	-
	mg/L	0828	WL	11/07/2006	N001		O	0.0038			#	0.00013	-
	mg/L	0951	WL	06/13/2006	N001	NR	N	0.0027			#	0.00021	-
	mg/L	0951	WL	11/07/2006	N001	NR	N	0.0022			#	0.00013	-
Oxidation Reduction Potent	mV	0405	WL	06/13/2006	N001	NR	N	62.8			#	-	-
	mV	0405	WL	11/07/2006	N001	NR	N	220			#	-	-
	mV	0422	WL	06/13/2006	N001	NR	N	65.3			#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0422	WL	11/07/2006	N001	NR	N	193			#	-	-
	mV	0430	WL	06/13/2006	N001	NR	N	81.7			#	-	-
	mV	0430	WL	11/07/2006	N001	NR	N	217			#	-	-
	mV	0436	WL	06/13/2006	N001	NR	N	152.2			#	-	-
	mV	0436	WL	11/07/2006	N001	NR	N	155			#	-	-
	mV	0454	WL	06/13/2006	N001			89.9			#	-	-
	mV	0454	WL	11/07/2006	N001			532			#	-	-
	mV	0460	WL	06/13/2006	N001	NR	N	59			#	-	-
	mV	0460	WL	11/07/2006	N001	NR	N	36			#	-	-
	mV	0828	WL	06/13/2006	N001		O	107.2			#	-	-
	mV	0828	WL	11/07/2006	N001		O	154			#	-	-
	mV	0951	WL	06/13/2006	N001	NR	N	84			#	-	-
	mV	0951	WL	11/07/2006	N001	NR	N	160			#	-	-
pH	s.u.	0405	WL	06/13/2006	N001	NR	N	8.86			#	-	-
	s.u.	0405	WL	11/07/2006	N001	NR	N	8.98			#	-	-
	s.u.	0422	WL	06/13/2006	N001	NR	N	7.72			#	-	-
	s.u.	0422	WL	11/07/2006	N001	NR	N	8.05			#	-	-
	s.u.	0430	WL	06/13/2006	N001	NR	N	8.81			#	-	-
	s.u.	0430	WL	11/07/2006	N001	NR	N	8.49			#	-	-
	s.u.	0436	WL	06/13/2006	N001	NR	N	8.76			#	-	-
	s.u.	0436	WL	11/07/2006	N001	NR	N	8.77			#	-	-
	s.u.	0454	WL	06/13/2006	N001			8.62			#	-	-
	s.u.	0454	WL	11/07/2006	N001			8.61			#	-	-
	s.u.	0460	WL	06/13/2006	N001	NR	N	8.79			#	-	-
	s.u.	0460	WL	11/07/2006	N001	NR	N	8.76			#	-	-
	s.u.	0828	WL	06/13/2006	N001		O	8.82			#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	0828	WL	11/07/2006	N001		O	8.83			#	-	-
	s.u.	0951	WL	06/13/2006	N001	NR	N	8.28			#	-	-
	s.u.	0951	WL	11/07/2006	N001	NR	N	8.84			#	-	-
Specific Conductance	umhos/cm	0405	WL	06/13/2006	N001	NR	N	940			#	-	-
	umhos/cm	0405	WL	11/07/2006	N001	NR	N	975			#	-	-
	umhos/cm	0422	WL	06/13/2006	N001	NR	N	405			#	-	-
	umhos/cm	0422	WL	11/07/2006	N001	NR	N	415			#	-	-
	umhos/cm	0430	WL	06/13/2006	N001	NR	N	788			#	-	-
	umhos/cm	0430	WL	11/07/2006	N001	NR	N	742			#	-	-
	umhos/cm	0436	WL	06/13/2006	N001	NR	N	912			#	-	-
	umhos/cm	0436	WL	11/07/2006	N001	NR	N	853			#	-	-
	umhos/cm	0454	WL	06/13/2006	N001			1307			#	-	-
	umhos/cm	0454	WL	11/07/2006	N001			615			#	-	-
	umhos/cm	0460	WL	06/13/2006	N001	NR	N	726			#	-	-
	umhos/cm	0460	WL	11/07/2006	N001	NR	N	702			#	-	-
	umhos/cm	0828	WL	06/13/2006	N001		O	874			#	-	-
	umhos/cm	0828	WL	11/07/2006	N001		O	858			#	-	-
	umhos/cm	0951	WL	06/13/2006	N001	NR	N	865			#	-	-
	umhos/cm	0951	WL	11/07/2006	N001	NR	N	860			#	-	-
Sulfate	mg/L	0405	WL	06/13/2006	N001	NR	N	290			#	5	-
	mg/L	0405	WL	11/07/2006	N001	NR	N	390			#	5	-
	mg/L	0422	WL	06/13/2006	N001	NR	N	47			#	2.5	-
	mg/L	0422	WL	11/07/2006	N001	NR	N	62			#	1	-
	mg/L	0430	WL	06/13/2006	N001	NR	N	190			#	2.5	-
	mg/L	0430	WL	11/07/2006	N001	NR	N	200			#	5	-
	mg/L	0436	WL	06/13/2006	N001	NR	N	230			#	2.5	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UNCERTAINTY
Sulfate	mg/L	0436	WL	11/07/2006	N001	NR	N	240			#	5	-
	mg/L	0454	WL	06/13/2006	N001			450			#	5	-
	mg/L	0454	WL	11/07/2006	N001			130			#	5	-
	mg/L	0460	WL	06/13/2006	N001	NR	N	160			#	2.5	-
	mg/L	0460	WL	11/07/2006	N001	NR	N	170			#	5	-
	mg/L	0828	WL	06/13/2006	N001		O	220			#	5	-
	mg/L	0828	WL	11/07/2006	N001		O	240			#	5	-
	mg/L	0951	WL	06/13/2006	N001	NR	N	270			#	5	-
	mg/L	0951	WL	11/07/2006	N001	NR	N	290			#	5	-
Temperature	C	0405	WL	06/13/2006	N001	NR	N	11.59			#	-	-
	C	0405	WL	11/07/2006	N001	NR	N	14.5			#	-	-
	C	0422	WL	06/13/2006	N001	NR	N	14.19			#	-	-
	C	0422	WL	11/07/2006	N001	NR	N	19.7			#	-	-
	C	0430	WL	06/13/2006	N001	NR	N	13.95			#	-	-
	C	0430	WL	11/07/2006	N001	NR	N	11.6			#	-	-
	C	0436	WL	06/13/2006	N001	NR	N	23.54			#	-	-
	C	0436	WL	11/07/2006	N001	NR	N	19.2			#	-	-
	C	0454	WL	06/13/2006	N001			13.69			#	-	-
	C	0454	WL	11/07/2006	N001			14.8			#	-	-
	C	0460	WL	06/13/2006	N001	NR	N	24.62			#	-	-
	C	0460	WL	11/07/2006	N001	NR	N	27.4			#	-	-
	C	0828	WL	06/13/2006	N001		O	14.01			#	-	-
	C	0828	WL	11/07/2006	N001		O	12.4			#	-	-
	C	0951	WL	06/13/2006	N001	NR	N	14.30			#	-	-
	C	0951	WL	11/07/2006	N001	NR	N	14.5			#	-	-
Turbidity	NTU	0405	WL	06/13/2006	N001	NR	N	3.14			#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0405	WL	11/07/2006	N001	NR	N	2.00			#	-	-
	NTU	0422	WL	06/13/2006	N001	NR	N	0.93			#	-	-
	NTU	0422	WL	11/07/2006	N001	NR	N	1.37			#	-	-
	NTU	0430	WL	06/13/2006	N001	NR	N	0.68			#	-	-
	NTU	0430	WL	11/07/2006	N001	NR	N	3.68			#	-	-
	NTU	0436	WL	06/13/2006	N001	NR	N	0.76			#	-	-
	NTU	0436	WL	11/07/2006	N001	NR	N	1.25			#	-	-
	NTU	0454	WL	06/13/2006	N001			1.95			#	-	-
	NTU	0454	WL	11/07/2006	N001			0.91			#	-	-
	NTU	0460	WL	06/13/2006	N001	NR	N	1.01			#	-	-
	NTU	0460	WL	11/07/2006	N001	NR	N	3.39			#	-	-
	NTU	0828	WL	06/13/2006	N001		O	0.42			#	-	-
	NTU	0828	WL	11/07/2006	N001		O	2.41			#	-	-
	NTU	0951	WL	06/13/2006	N001	NR	N	1.84			#	-	-
	NTU	0951	WL	11/07/2006	N001	NR	N	3.78			#	-	-
Uranium	mg/L	0405	WL	06/13/2006	N001	NR	N	0.00006	B	U	#	3.4E-06	-
	mg/L	0405	WL	11/07/2006	N001	NR	N	0.00004	B	U	#	4.8E-06	-
	mg/L	0422	WL	06/13/2006	N001	NR	N	0.0017			#	3.4E-06	-
	mg/L	0422	WL	11/07/2006	N001	NR	N	0.0016			#	4.8E-06	-
	mg/L	0430	WL	06/13/2006	N001	NR	N	0.00004	B	U	#	3.4E-06	-
	mg/L	0430	WL	11/07/2006	N001	NR	N	0.00005	B	U	#	4.8E-06	-
	mg/L	0436	WL	06/13/2006	N001	NR	N	0.00011			#	3.4E-06	-
	mg/L	0436	WL	11/07/2006	N001	NR	N	0.00012		U	#	4.8E-06	-
	mg/L	0454	WL	06/13/2006	N001			0.00004	B	U	#	3.4E-06	-
	mg/L	0454	WL	11/07/2006	N001			0.00008	B	U	#	4.8E-06	-
	mg/L	0460	WL	06/13/2006	N001	NR	N	0.00005	B	U	#	3.4E-06	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0460	WL	11/07/2006	N001	NR	N	0.00005	B	U	#	4.8E-06	-
	mg/L	0828	WL	06/13/2006	N001		O	0.00014			#	3.4E-06	-
	mg/L	0828	WL	11/07/2006	N001		O	0.00013		U	#	4.8E-06	-
	mg/L	0951	WL	06/13/2006	N001	NR	N	0.00006	B	U	#	3.4E-06	-
	mg/L	0951	WL	11/07/2006	N001	NR	N	0.00004	B	U	#	4.8E-06	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:23 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE200 WHERE site_code='RVT01' AND location_code in('0405','0422','0430','0438','0454','0460','0828','0951') AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%N%' AND data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #1/1/2006# and #11/30/2006#

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

LOCATION TYPES: WL WELL

ZONES OF COMPLETION:

NR NO RECOVERY OF DATA FOR CLASSIFYING

FLOW CODES: N UNKNOWN O ON-SITE

LAB QUALIFIERS:

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

DATA QUALIFIERS:

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

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

Appendix D

Surface Water Quality Data

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SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:28 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0747	06/14/2006	0001	147			#	-	-
	mg/L	0747	11/07/2006	0001	300			#	-	-
	mg/L	0749	11/07/2006	0001	97			#	-	-
	mg/L	0794	06/13/2006	0001	84			#	-	-
	mg/L	0794	11/08/2006	0001	118			#	-	-
	mg/L	0796	06/13/2006	0001	107			#	-	-
	mg/L	0796	11/08/2006	0001	159			#	-	-
	mg/L	0810	06/14/2006	0001	402			#	-	-
	mg/L	0810	11/08/2006	0001	474			#	-	-
	mg/L	0811	06/14/2006	0001	93			#	-	-
	mg/L	0811	11/07/2006	0001	57			#	-	-
	mg/L	0812	06/14/2006	0001	83			#	-	-
	mg/L	0812	11/08/2006	0001	155			#	-	-
	mg/L	0822	06/14/2006	0001	178			#	-	-
	mg/L	0822	11/08/2006	0001	237			#	-	-
	mg/L	0823	06/13/2006	0001	126			#	-	-
	mg/L	0823	11/08/2006	0001	85			#	-	-
Dissolved Oxygen	mg/L	0749	06/15/2006	N001	9.39			#	-	-
	mg/L	0796	06/13/2006	N001	0.07			#	-	-
Manganese	mg/L	0749	06/15/2006	0002	0.031			#	0.00046	-
Molybdenum	mg/L	0749	06/15/2006	0002	0.0041			#	0.00021	-
Oxidation Reduction Potent	mV	0747	06/14/2006	N001	109.1			#	-	-
	mV	0747	11/07/2006	N001	65			#	-	-
	mV	0749	06/15/2006	N001	333			#	-	-
	mV	0749	11/07/2006	N001	140			#	-	-
	mV	0794	06/13/2006	N001	113			#	-	-
	mV	0794	11/08/2006	N001	189			#	-	-
	mV	0796	06/13/2006	N001	168.8			#	-	-
	mV	0796	11/08/2006	N001	81			#	-	-
	mV	0810	06/14/2006	N001	27.7			#	-	-
	mV	0810	11/08/2006	N001	75			#	-	-
	mV	0811	06/14/2006	N001	156.2			#	-	-
	mV	0811	11/07/2006	N001	116			#	-	-
	mV	0812	06/14/2006	N001	131.9			#	-	-
	mV	0812	11/08/2006	N001	61			#	-	-
	mV	0822	06/14/2006	N001	57.3			#	-	-
	mV	0822	11/08/2006	N001	78.7			#	-	-
	mV	0823	06/13/2006	N001	72			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:28 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0823	11/08/2006	N001	73			#	-	-
pH	s.u.	0747	06/14/2006	N001	8.22			#	-	-
	s.u.	0747	11/07/2006	N001	7.70			#	-	-
	s.u.	0749	06/15/2006	N001	4.19			#	-	-
	s.u.	0749	11/07/2006	N001	7.86			#	-	-
	s.u.	0794	06/13/2006	N001	8.43			#	-	-
	s.u.	0794	11/08/2006	N001	8.04			#	-	-
	s.u.	0796	06/13/2006	N001	7.77			#	-	-
	s.u.	0796	11/08/2006	N001	8.34			#	-	-
	s.u.	0810	06/14/2006	N001	9.39			#	-	-
	s.u.	0810	11/08/2006	N001	8.73			#	-	-
	s.u.	0811	06/14/2006	N001	8.33			#	-	-
	s.u.	0811	11/07/2006	N001	8.37			#	-	-
	s.u.	0812	06/14/2006	N001	8.29			#	-	-
	s.u.	0812	11/08/2006	N001	8.35			#	-	-
	s.u.	0822	06/14/2006	N001	8.08			#	-	-
	s.u.	0822	11/08/2006	N001	7.88			#	-	-
	s.u.	0823	06/13/2006	N001	9.20			#	-	-
	s.u.	0823	11/08/2006	N001	9.10			#	-	-
Radium-226	pCi/L	0822	06/14/2006	0001	-0.108	U		#	1.41	± 0.75
	pCi/L	0822	11/08/2006	0001	0.438	U		#	0.438	± 0.28
Radium-228	pCi/L	0822	06/14/2006	0001	0.382	U		#	0.695	± 0.36
	pCi/L	0822	11/08/2006	0001	0.89		J	#	0.816	± 0.49
Specific Conductance	umhos/cm	0747	06/14/2006	N001	614			#	-	-
	umhos/cm	0747	11/07/2006	N001	1119			#	-	-
	umhos/cm	0749	06/15/2006	N001	4407			#	-	-
	umhos/cm	0749	11/07/2006	N001	5114			#	-	-
	umhos/cm	0794	06/13/2006	N001	333			#	-	-
	umhos/cm	0794	11/08/2006	N001	719			#	-	-
	umhos/cm	0796	06/13/2006	N001	296			#	-	-
	umhos/cm	0796	11/08/2006	N001	750			#	-	-
	umhos/cm	0810	06/14/2006	N001	1464			#	-	-
	umhos/cm	0810	11/08/2006	N001	1539			#	-	-
	umhos/cm	0811	06/14/2006	N001	333			#	-	-
	umhos/cm	0811	11/07/2006	N001	727			#	-	-
	umhos/cm	0812	06/14/2006	N001	320			#	-	-
	umhos/cm	0812	11/08/2006	N001	725			#	-	-
	umhos/cm	0822	06/14/2006	N001	2744			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:28 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	0822	11/08/2006	N001	2542			#	-	-
	umhos/cm	0823	06/13/2006	N001	1046			#	-	-
	umhos/cm	0823	11/08/2006	N001	887			#	-	-
Sulfate	mg/L	0747	06/14/2006	0001	160			#	2.5	-
	mg/L	0747	11/07/2006	0001	300			#	5	-
	mg/L	0749	06/15/2006	0001	2200			#	25	-
	mg/L	0749	06/15/2006	0002	2200			#	25	-
	mg/L	0749	11/07/2006	0001	2600			#	25	-
	mg/L	0794	06/13/2006	0001	77			#	2.5	-
	mg/L	0794	11/08/2006	0001	230			#	5	-
	mg/L	0796	06/13/2006	0001	68			#	1	-
	mg/L	0796	11/08/2006	0001	240			#	5	-
	mg/L	0810	06/14/2006	0001	370			#	5	-
	mg/L	0810	11/08/2006	0001	390			#	5	-
	mg/L	0811	06/14/2006	0001	78			#	2.5	-
	mg/L	0811	11/07/2006	0001	230			#	5	-
	mg/L	0812	06/14/2006	0001	75			#	2.5	-
	mg/L	0812	11/08/2006	0001	230			#	5	-
	mg/L	0822	06/14/2006	0001	1000			#	25	-
	mg/L	0822	11/08/2006	0001	1100			#	10	-
	mg/L	0823	06/13/2006	0001	350			#	5	-
	mg/L	0823	11/08/2006	0001	320			#	5	-
Temperature	C	0747	06/14/2006	N001	22.60			#	-	-
	C	0747	11/07/2006	N001	11.57			#	-	-
	C	0749	06/15/2006	N001	21.6			#	-	-
	C	0749	11/07/2006	N001	21.0			#	-	-
	C	0794	06/13/2006	N001	22.87			#	-	-
	C	0794	11/08/2006	N001	7.31			#	-	-
	C	0796	06/13/2006	N001	18.16			#	-	-
	C	0796	11/08/2006	N001	12.48			#	-	-
	C	0810	06/14/2006	N001	20.99			#	-	-
	C	0810	11/08/2006	N001	10.32			#	-	-
	C	0811	06/14/2006	N001	20.80			#	-	-
	C	0811	11/07/2006	N001	9.27			#	-	-
	C	0812	06/14/2006	N001	17.87			#	-	-
	C	0812	11/08/2006	N001	10.36			#	-	-
	C	0822	06/14/2006	N001	19.19			#	-	-
	C	0822	11/08/2006	N001	10.98			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:28 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0823	06/13/2006	N001	23.62			#	-	-
	C	0823	11/08/2006	N001	9.54			#	-	-
Turbidity	NTU	0747	06/14/2006	N001	176			#	-	-
	NTU	0749	06/15/2006	N001	11.8			#	-	-
	NTU	0749	11/07/2006	N001	13.7			#	-	-
	NTU	0794	06/13/2006	N001	22.7			#	-	-
	NTU	0796	06/13/2006	N001	37.6			#	-	-
	NTU	0810	06/14/2006	N001	8.25			#	-	-
	NTU	0811	06/14/2006	N001	24.0			#	-	-
	NTU	0812	06/14/2006	N001	52.9			#	-	-
	NTU	0822	06/14/2006	N001	3.71			#	-	-
	NTU	0823	06/13/2006	N001	2.43			#	-	-
Uranium	mg/L	0747	06/14/2006	0001	0.063			#	3.4E-06	-
	mg/L	0747	11/07/2006	0001	0.140			#	2.4E-05	-
	mg/L	0749	06/15/2006	0001	0.0003			#	3.4E-06	-
	mg/L	0749	06/15/2006	0002	0.0001			#	3.4E-06	-
	mg/L	0749	11/07/2006	0001	0.0002		U	#	4.8E-06	-
	mg/L	0794	06/13/2006	0001	0.0022			#	3.4E-06	-
	mg/L	0794	11/08/2006	0001	0.0059			#	4.8E-06	-
	mg/L	0796	06/13/2006	0001	0.0015			#	3.4E-06	-
	mg/L	0796	11/08/2006	0001	0.0055			#	4.8E-06	-
	mg/L	0810	06/14/2006	0001	0.0078			#	3.4E-06	-
	mg/L	0810	11/08/2006	0001	0.010			#	4.8E-06	-
	mg/L	0811	06/14/2006	0001	0.0017			#	3.4E-06	-
	mg/L	0811	11/07/2006	0001	0.0055			#	4.8E-06	-
	mg/L	0812	06/14/2006	0001	0.0018			#	3.4E-06	-
	mg/L	0812	11/08/2006	0001	0.0058			#	4.8E-06	-
	mg/L	0822	06/14/2006	0001	0.0024			#	3.4E-06	-
	mg/L	0822	11/08/2006	0001	0.0097			#	4.8E-06	-
	mg/L	0823	06/13/2006	0001	0.013			#	3.4E-06	-
	mg/L	0823	11/08/2006	0001	0.0081			#	4.8E-06	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/23/2007 2:28 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE800 WHERE site_code='RVT01' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%N%' AND data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #1/1/2006# and #11/30/2006#

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

LAB QUALIFIERS:

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

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.
J	Estimated value.	L	Less than 3 bore volumes purged prior to sampling.
N	Presumptive evidence that analyte is present. The analyte is "tentatively identified".	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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Appendix E

Alternate Water Supply System Data

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GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:46 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Chlorine, Total Residual	mg/L	0814	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.19			#	-	-
	mg/L	0818	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.19			#	-	-
	mg/L	0818	DS, HDRT	06/13/2006	N002	999.00 - 999.00	0.24			#	-	-
	mg/L	0818	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.37			#	-	-
	mg/L	0819	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.27			#	-	-
	mg/L	0819	DS, HDRT	06/13/2006	N002	999.00 - 999.00	0.25			#	-	-
	mg/L	0819	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.24			#	-	-
	mg/L	0820	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.25			#	-	-
	mg/L	0820	DS, HDRT	06/14/2006	N002	999.00 - 999.00	0.14			#	-	-
	mg/L	0820	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.29			#	-	-
	mg/L	0821	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.27			#	-	-
	mg/L	0821	DS, HDRT	06/14/2006	N002	999.00 - 999.00	0.35			#	-	-
	mg/L	0821	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.68			#	-	-
	mg/L	0829	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.25			#	-	-
	mg/L	0829	DS, HDRT	06/13/2006	N002	999.00 - 999.00	0.29			#	-	-
	mg/L	0830	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.23			#	-	-
	mg/L	0830	DS, HDRT	06/13/2006	N002	999.00 - 999.00	0.24			#	-	-
	mg/L	0834	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.27			#	-	-
	mg/L	0835	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.43			#	-	-
Dissolved Oxygen	mg/L	0813	DS, TAP	06/14/2006	N001	0.00 - 0.00	4.52			#	-	-
	mg/L	0814	DS, TAP	06/14/2006	N001	0.00 - 0.00	2.61			#	-	-
	mg/L	0815	DS, TAP	06/14/2006	N001	0.00 - 0.00	8.70			#	-	-
	mg/L	0816	DS, TAP	06/14/2006	N001	0.00 - 0.00	7.30			#	-	-
	mg/L	0818	DS, HDRT	06/13/2006	N001	0.00 - 0.00	5.18			#	-	-
	mg/L	0818	DS, HDRT	06/13/2006	N002	999.00 - 999.00	5.96			#	-	-
	mg/L	0818	DS, HDRT	08/08/2006	N001	0.00 - 0.00	3.77			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:46 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Dissolved Oxygen	mg/L	0819	DS, HDRT	06/13/2006	N001	0.00 - 0.00	5.88			#	-	-
	mg/L	0819	DS, HDRT	06/13/2006	N002	999.00 - 999.00	5.84			#	-	-
	mg/L	0819	DS, HDRT	08/08/2006	N001	0.00 - 0.00	3.88			#	-	-
	mg/L	0820	DS, HDRT	06/14/2006	N001	0.00 - 0.00	5.94			#	-	-
	mg/L	0820	DS, HDRT	06/14/2006	N002	999.00 - 999.00	4.31			#	-	-
	mg/L	0820	DS, HDRT	08/08/2006	N001	0.00 - 0.00	4.65			#	-	-
	mg/L	0821	DS, HDRT	06/14/2006	N001	0.00 - 0.00	5.16			#	-	-
	mg/L	0821	DS, HDRT	06/14/2006	N002	999.00 - 999.00	6.30			#	-	-
	mg/L	0821	DS, HDRT	08/08/2006	N001	0.00 - 0.00	6.00			#	-	-
	mg/L	0829	DS, HDRT	06/13/2006	N001	0.00 - 0.00	5.96			#	-	-
	mg/L	0829	DS, HDRT	06/13/2006	N002	999.00 - 999.00	5.97			#	-	-
	mg/L	0830	DS, HDRT	06/13/2006	N001	0.00 - 0.00	7.19			#	-	-
	mg/L	0830	DS, HDRT	06/13/2006	N002	999.00 - 999.00	8.36			#	-	-
	mg/L	0834	DS, HDRT	06/14/2006	N001	0.00 - 0.00	6.72			#	-	-
	mg/L	0835	DS, HDRT	08/08/2006	N001	0.00 - 0.00	4.22			#	-	-
Oxidation Reduction Potent	mV	0813	DS, TAP	06/14/2006	N001	0.00 - 0.00	223			#	-	-
	mV	0814	DS, TAP	06/14/2006	N001	0.00 - 0.00	171			#	-	-
	mV	0815	DS, TAP	06/14/2006	N001	0.00 - 0.00	271			#	-	-
	mV	0816	DS, TAP	06/14/2006	N001	0.00 - 0.00	274			#	-	-
	mV	0818	DS, HDRT	06/13/2006	N001	0.00 - 0.00	217			#	-	-
	mV	0818	DS, HDRT	06/13/2006	N002	999.00 - 999.00	273			#	-	-
	mV	0818	DS, HDRT	08/08/2006	N001	0.00 - 0.00	153.5			#	-	-
	mV	0819	DS, HDRT	06/13/2006	N001	0.00 - 0.00	245			#	-	-
	mV	0819	DS, HDRT	06/13/2006	N002	999.00 - 999.00	214			#	-	-
	mV	0819	DS, HDRT	08/08/2006	N001	0.00 - 0.00	129.2			#	-	-
	mV	0820	DS, HDRT	06/14/2006	N001	0.00 - 0.00	306			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:46 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0820	DS, HDRT	06/14/2006	N002	999.00 - 999.00	220			#	-	-
	mV	0820	DS, HDRT	08/08/2006	N001	0.00 - 0.00	165.4			#	-	-
	mV	0821	DS, HDRT	06/14/2006	N001	0.00 - 0.00	156			#	-	-
	mV	0821	DS, HDRT	06/14/2006	N002	999.00 - 999.00	45.0			#	-	-
	mV	0821	DS, HDRT	08/08/2006	N001	0.00 - 0.00	299.7			#	-	-
	mV	0829	DS, HDRT	06/13/2006	N001	0.00 - 0.00	323			#	-	-
	mV	0829	DS, HDRT	06/13/2006	N002	999.00 - 999.00	281			#	-	-
	mV	0830	DS, HDRT	06/13/2006	N001	0.00 - 0.00	200			#	-	-
	mV	0830	DS, HDRT	06/13/2006	N002	999.00 - 999.00	258			#	-	-
	mV	0834	DS, HDRT	06/14/2006	N001	0.00 - 0.00	317			#	-	-
	mV	0835	DS, HDRT	08/08/2006	N001	0.00 - 0.00	141.6			#	-	-
pH	s.u.	0813	DS, TAP	06/14/2006	N001	0.00 - 0.00	8.99			#	-	-
	s.u.	0814	DS, TAP	06/14/2006	N001	0.00 - 0.00	9.02			#	-	-
	s.u.	0815	DS, TAP	06/14/2006	N001	0.00 - 0.00	8.98			#	-	-
	s.u.	0816	DS, TAP	06/14/2006	N001	0.00 - 0.00	8.87			#	-	-
	s.u.	0818	DS, HDRT	06/13/2006	N001	0.00 - 0.00	8.98			#	-	-
	s.u.	0818	DS, HDRT	06/13/2006	N002	999.00 - 999.00	8.43			#	-	-
	s.u.	0818	DS, HDRT	08/08/2006	N001	0.00 - 0.00	8.90			#	-	-
	s.u.	0819	DS, HDRT	06/13/2006	N001	0.00 - 0.00	8.91			#	-	-
	s.u.	0819	DS, HDRT	06/13/2006	N002	999.00 - 999.00	8.48			#	-	-
	s.u.	0819	DS, HDRT	08/08/2006	N001	0.00 - 0.00	8.87			#	-	-
	s.u.	0820	DS, HDRT	06/14/2006	N001	0.00 - 0.00	8.99			#	-	-
	s.u.	0820	DS, HDRT	06/14/2006	N002	999.00 - 999.00	8.99			#	-	-
	s.u.	0820	DS, HDRT	08/08/2006	N001	0.00 - 0.00	8.90			#	-	-
	s.u.	0821	DS, HDRT	06/14/2006	N001	0.00 - 0.00	9.08			#	-	-
	s.u.	0821	DS, HDRT	06/14/2006	N002	999.00 - 999.00	9.03			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:46 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	0821	DS, HDRT	08/08/2006	N001	0.00 - 0.00	8.87			#	-	-
	s.u.	0829	DS, HDRT	06/13/2006	N001	0.00 - 0.00	8.43			#	-	-
	s.u.	0829	DS, HDRT	06/13/2006	N002	999.00 - 999.00	8.25			#	-	-
	s.u.	0830	DS, HDRT	06/13/2006	N001	0.00 - 0.00	8.88			#	-	-
	s.u.	0830	DS, HDRT	06/13/2006	N002	999.00 - 999.00	8.85			#	-	-
	s.u.	0834	DS, HDRT	06/14/2006	N001	0.00 - 0.00	9.05			#	-	-
	s.u.	0835	DS, HDRT	08/08/2006	N001	0.00 - 0.00	8.91			#	-	-
Radium-226	pCi/L	0813	OS, TAP	06/14/2006	N001	0.00 - 0.00	-0.117	U		#	1.63	± 0.88
	pCi/L	0814	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.24	U		#	0.719	± 0.42
	pCi/L	0815	DS, TAP	06/14/2006	N001	0.00 - 0.00	-0.36	U		#	1.81	± 0.96
	pCi/L	0816	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.482	U		#	0.803	± 0.53
	pCi/L	0818	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.443	U		#	0.591	± 0.42
	pCi/L	0818	DS, HDRT	06/13/2006	N002	0.00 - 0.00	0.396	U		#	1.44	± 0.85
	pCi/L	0818	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.55	J	J	#	0.19	± 0.19
	pCi/L	0819	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.0764	U		#	1.98	± 1.09
	pCi/L	0819	DS, HDRT	06/13/2006	N002	0.00 - 0.00	0.988		J	#	0.824	± 0.67
	pCi/L	0819	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.38	J		#	0.18	± 0.17
	pCi/L	0820	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.369	U		#	1.15	± 0.68
	pCi/L	0820	DS, HDRT	06/14/2006	N002	0.00 - 0.00	0.325	U		#	0.814	± 0.49
	pCi/L	0820	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.61	J		#	0.17	± 0.19
	pCi/L	0821	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.135	U		#	0.633	± 0.35
	pCi/L	0821	DS, HDRT	06/14/2006	N002	0.00 - 0.00	0.215	U		#	1.32	± 0.75
	pCi/L	0821	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.43	J	J	#	0.19	± 0.18
	pCi/L	0829	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.781	U		#	1.11	± 0.74
	pCi/L	0829	DS, HDRT	06/13/2006	N002	0.00 - 0.00	0.483	U		#	0.766	± 0.51
	pCi/L	0830	DS, HDRT	06/13/2006	N001	0.00 - 0.00	1.2	U		#	2.01	± 1.30

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:46 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Radium-226	pCi/L	0830	DS, HDRT	06/13/2006	N002	0.00 - 0.00	0.199	U		#	0.521	± 0.31
	pCi/L	0834	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.52	U		#	0.78	± 0.53
	pCi/L	0835	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.81	J		#	0.17	± 0.22
Radium-228	pCi/L	0813	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.783		J	#	0.746	± 0.45
	pCi/L	0814	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.449	U		#	0.624	± 0.34
	pCi/L	0815	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.766		J	#	0.649	± 0.41
	pCi/L	0816	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.728		J	#	0.626	± 0.39
	pCi/L	0818	DS, HDRT	06/13/2006	N001	0.00 - 0.00	1.15		J	#	0.675	± 0.50
	pCi/L	0818	DS, HDRT	06/13/2006	N002	0.00 - 0.00	1.04		J	#	0.617	± 0.46
	pCi/L	0818	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.63	U		#	0.63	± 0.39
	pCi/L	0819	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.56	U		#	0.676	± 0.38
	pCi/L	0819	DS, HDRT	06/13/2006	N002	0.00 - 0.00	1.21		J	#	0.697	± 0.52
	pCi/L	0819	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.65	U		#	0.65	± 0.41
	pCi/L	0820	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.744		J	#	0.668	± 0.41
	pCi/L	0820	DS, HDRT	06/14/2006	N002	0.00 - 0.00	0.908		J	#	0.678	± 0.45
	pCi/L	0820	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.66	U		#	0.66	± 0.42
	pCi/L	0821	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.698		J	#	0.628	± 0.39
	pCi/L	0821	DS, HDRT	06/14/2006	N002	0.00 - 0.00	0.994		J	#	0.692	± 0.47
	pCi/L	0821	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.71	U		#	0.71	± 0.44
	pCi/L	0829	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.589	U		#	0.668	± 0.38
	pCi/L	0829	DS, HDRT	06/13/2006	N002	0.00 - 0.00	0.755		J	#	0.681	± 0.42
	pCi/L	0830	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.709		J	#	0.67	± 0.40
	pCi/L	0830	DS, HDRT	06/13/2006	N002	0.00 - 0.00	0.737	U		#	0.763	± 0.45
	pCi/L	0834	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.621	U		#	0.705	± 0.40
	pCi/L	0835	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.78	J	J	#	0.56	± 0.37
Specific Conductance	umhos/cm	0813	DS, TAP	06/14/2006	N001	0.00 - 0.00	609			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:46 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	0814	DS, TAP	06/14/2006	N001	0.00 - 0.00	617			#	-	-
	umhos/cm	0815	DS, TAP	06/14/2006	N001	0.00 - 0.00	623			#	-	-
	umhos/cm	0816	DS, TAP	06/14/2006	N001	0.00 - 0.00	747			#	-	-
	umhos/cm	0818	DS, HDRT	06/13/2006	N001	0.00 - 0.00	612			#	-	-
	umhos/cm	0818	DS, HDRT	06/13/2006	N002	999.00 - 999.00	611			#	-	-
	umhos/cm	0818	DS, HDRT	08/08/2006	N001	0.00 - 0.00	609			#	-	-
	umhos/cm	0819	DS, HDRT	06/13/2006	N001	0.00 - 0.00	615			#	-	-
	umhos/cm	0819	DS, HDRT	06/13/2006	N002	999.00 - 999.00	619			#	-	-
	umhos/cm	0819	DS, HDRT	08/08/2006	N001	0.00 - 0.00	618			#	-	-
	umhos/cm	0820	DS, HDRT	06/14/2006	N001	0.00 - 0.00	611			#	-	-
	umhos/cm	0820	DS, HDRT	06/14/2006	N002	999.00 - 999.00	621			#	-	-
	umhos/cm	0820	DS, HDRT	08/08/2006	N001	0.00 - 0.00	613			#	-	-
	umhos/cm	0821	DS, HDRT	06/14/2006	N001	0.00 - 0.00	612			#	-	-
	umhos/cm	0821	DS, HDRT	06/14/2006	N002	999.00 - 999.00	613			#	-	-
	umhos/cm	0821	DS, HDRT	08/08/2006	N001	0.00 - 0.00	622			#	-	-
	umhos/cm	0829	DS, HDRT	06/13/2006	N001	0.00 - 0.00	612			#	-	-
	umhos/cm	0829	DS, HDRT	06/13/2006	N002	999.00 - 999.00	663			#	-	-
	umhos/cm	0830	DS, HDRT	06/13/2006	N001	0.00 - 0.00	619			#	-	-
	umhos/cm	0830	DS, HDRT	06/13/2006	N002	999.00 - 999.00	617			#	-	-
	umhos/cm	0834	DS, HDRT	06/14/2006	N001	0.00 - 0.00	610			#	-	-
	umhos/cm	0835	DS, HDRT	08/08/2006	N001	0.00 - 0.00	616			#	-	-
Temperature	C	0813	DS, TAP	06/14/2006	N001	0.00 - 0.00	22.5			#	-	-
	C	0814	DS, TAP	06/14/2006	N001	0.00 - 0.00	19.7			#	-	-
	C	0815	DS, TAP	06/14/2006	N001	0.00 - 0.00	12.72			#	-	-
	C	0816	DS, TAP	06/14/2006	N001	0.00 - 0.00	15.7			#	-	-
	C	0818	DS, HDRT	06/13/2006	N001	0.00 - 0.00	15.53			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:46 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0818	DS, HDRT	06/13/2006	N002	999.00 - 999.00	13.15			#	-	-
	C	0818	DS, HDRT	08/08/2006	N001	0.00 - 0.00	17.89			#	-	-
	C	0819	DS, HDRT	06/13/2006	N001	0.00 - 0.00	15.07			#	-	-
	C	0819	DS, HDRT	06/13/2006	N002	999.00 - 999.00	12.70			#	-	-
	C	0819	DS, HDRT	08/08/2006	N001	0.00 - 0.00	16.45			#	-	-
	C	0820	DS, HDRT	06/14/2006	N001	0.00 - 0.00	13.48			#	-	-
	C	0820	DS, HDRT	06/14/2006	N002	999.00 - 999.00	13.90			#	-	-
	C	0820	DS, HDRT	08/08/2006	N001	0.00 - 0.00	17.33			#	-	-
	C	0821	DS, HDRT	06/14/2006	N001	0.00 - 0.00	13.17			#	-	-
	C	0821	DS, HDRT	06/14/2006	N002	999.00 - 999.00	12.48			#	-	-
	C	0821	DS, HDRT	08/08/2006	N001	0.00 - 0.00	17.02			#	-	-
	C	0829	DS, HDRT	06/13/2006	N001	0.00 - 0.00	16.43			#	-	-
	C	0829	DS, HDRT	06/13/2006	N002	999.00 - 999.00	14.19			#	-	-
	C	0830	DS, HDRT	06/13/2006	N001	0.00 - 0.00	16.3			#	-	-
	C	0830	DS, HDRT	06/13/2006	N002	999.00 - 999.00	14.67			#	-	-
	C	0834	DS, HDRT	06/14/2006	N001	0.00 - 0.00	13.18			#	-	-
	C	0835	DS, HDRT	08/08/2006	N001	0.00 - 0.00	17.92			#	-	-
Turbidity	NTU	0813	DS, TAP	06/14/2006	N001	0.00 - 0.00	1.43			#	-	-
	NTU	0814	DS, TAP	06/14/2006	N001	0.00 - 0.00	1.40			#	-	-
	NTU	0815	DS, TAP	06/14/2006	N001	0.00 - 0.00	1.57			#	-	-
	NTU	0816	DS, TAP	06/14/2006	N001	0.00 - 0.00	1.49			#	-	-
	NTU	0818	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.84			#	-	-
	NTU	0818	DS, HDRT	06/13/2006	N002	999.00 - 999.00	0.85			#	-	-
	NTU	0819	DS, HDRT	06/13/2006	N001	0.00 - 0.00	1.06			#	-	-
	NTU	0819	DS, HDRT	06/13/2006	N002	999.00 - 999.00	1.04			#	-	-
	NTU	0820	DS, HDRT	06/14/2006	N001	0.00 - 0.00	1.18			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:46 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0820	DS, HDRT	06/14/2006	N002	999.00 - 999.00	1.05			#	-	-
	NTU	0821	DS, HDRT	06/14/2006	N001	0.00 - 0.00	1.42			#	-	-
	NTU	0821	DS, HDRT	06/14/2006	N002	999.00 - 999.00	3.85			#	-	-
	NTU	0829	DS, HDRT	06/13/2006	N001	0.00 - 0.00	1.21			#	-	-
	NTU	0829	DS, HDRT	06/13/2006	N002	999.00 - 999.00	2.23			#	-	-
	NTU	0830	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.67			#	-	-
	NTU	0830	DS, HDRT	06/13/2006	N002	999.00 - 999.00	0.60			#	-	-
	NTU	0834	DS, HDRT	06/14/2006	N001	0.00 - 0.00	1.15			#	-	-
Uranium	mg/L	0813	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.00009	B	U	#	3.4E-06	-
	mg/L	0814	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.00012			#	3.4E-06	-
	mg/L	0815	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.00009	B	U	#	3.4E-06	-
	mg/L	0816	DS, TAP	06/14/2006	N001	0.00 - 0.00	0.0001	B	U	#	3.4E-06	-
	mg/L	0818	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.00009	B	U	#	3.4E-06	-
	mg/L	0818	DS, HDRT	06/13/2006	N002	0.00 - 0.00	0.00009	B	U	#	3.4E-06	-
	mg/L	0818	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.00021	U		#	0.00021	-
	mg/L	0819	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.00009	B	U	#	3.4E-06	-
	mg/L	0819	DS, HDRT	06/13/2006	N002	0.00 - 0.00	0.00014			#	3.4E-06	-
	mg/L	0819	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.00021	U		#	0.00021	-
	mg/L	0820	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.00008	B	U	#	3.4E-06	-
	mg/L	0820	DS, HDRT	06/14/2006	N002	0.00 - 0.00	0.00009	B	U	#	3.4E-06	-
	mg/L	0820	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.00021	U		#	0.00021	-
	mg/L	0821	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.00009	B		#	3.4E-06	-
	mg/L	0821	DS, HDRT	06/14/2006	N002	0.00 - 0.00	0.00011			#	3.4E-06	-
	mg/L	0821	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.00021	U		#	0.00021	-
	mg/L	0829	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.00011			#	3.4E-06	-
	mg/L	0829	DS, HDRT	06/13/2006	N002	0.00 - 0.00	0.0001			#	3.4E-06	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:46 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0830	DS, HDRT	06/13/2006	N001	0.00 - 0.00	0.00007	B	U	#	3.4E-06	-
	mg/L	0830	DS, HDRT	06/13/2006	N002	0.00 - 0.00	0.00012			#	3.4E-06	-
	mg/L	0834	DS, HDRT	06/14/2006	N001	0.00 - 0.00	0.00008	B	U	#	3.4E-06	-
	mg/L	0835	DS, HDRT	08/08/2006	N001	0.00 - 0.00	0.00021	U		#	0.00021	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE RVT01, Riverton Processing Site
REPORT DATE: 1/29/2007 1:46 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE200 WHERE site_code='RVT01' AND location_code in('0813','0814','0815','0816','0818','0819','0820','0821','0829','0830','0834','0835') AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%N%' AND data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #1/1/2006# and #12/31/2006#

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

LOCATION TYPES: DS DOMESTIC SUPPLY

LOCATION SUBTYPES: HDRT Hydrant TAP Tap in Domestic Supply Syste

LAB QUALIFIERS:

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

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	N	Presumptive evidence that analyte is present. The analyte is "tentatively identified".	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.