LMS/RFO/RFN/S05775

2009 Verification Monitoring Report for the Old and New Rifle, Colorado, Processing Sites

September 2009

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Abbreviations

CDPHE	Colorado Department of Public Health and Environment
COC	contaminant of concern
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ft	foot (feet)
GCAP	Ground Water Compliance Action Plan
ICs	institutional controls
MCL	maximum concentration limit
mg/L	milligram per liter
NRC	U.S. Nuclear Regulatory Commission
RRM	residual radioactive material
SOWP	Site Observational Work Plan
UMTRA	Uranium Mill Tailings Remedial Action (Project)

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1.0 Introduction

1.1 Purpose of Report

The purpose of this Verification Monitoring Report is to evaluate and interpret groundwater monitoring data collected at the Old and New Rifle, Colorado, Uranium Mill Tailings Remedial Action (UMTRA) Project processing sites (Figure 1 and Figure 2) and to assess the progress of meeting the compliance strategy for groundwater cleanup. Detailed information for the Old and New Rifle sites and water quality data through 1998 and 1999 are found in the Final Site Observational Work Plans (SOWPs) (DOE 1999a and 1999b) for the sites.

1.2 Compliance Strategy

The proposed compliance strategy for both the New and Old Rifle sites is natural flushing in conjunction with continued groundwater and surface water monitoring, and institutional controls (ICs) that would restrict access to contaminated groundwater (DOE 2005 and 2001). Also, the U.S. Department of Energy (DOE) and the State of Colorado constructed an alternate domestic water supply system in 2003 to service users near and downgradient of the New Rifle site (Figure 2). This compliance strategy will be protective of human health and the environment.

1.3 Site Status

The Old Rifle SOWP (DOE 1999a) and Ground Water Compliance Action Plan (GCAP) (DOE 2001) are complete and have received concurrence from the U.S. Nuclear Regulatory Commission (NRC) and the Colorado Department of Public Health and Environment (CDPHE). The conditions of the natural flushing compliance strategy are to maintain ICs over the site and conduct a monitoring program until levels of contaminants of concern (COCs) decrease to acceptable levels. The Old Rifle site is currently owned by the City of Rifle.

The New Rifle SOWP (DOE 1999b) and the draft GCAP (DOE 2006) were submitted to NRC and CDPHE. The GCAP is currently undergoing revision based on comments received from NRC and the State. Final concurrence of the GCAP will occur when any outstanding issues have been adequately resolved. The conditions of the natural flushing compliance strategy are to maintain ICs over the site and downgradient areas (Figure 3) and continue a monitoring program until concentrations of COCs decrease to acceptable levels. The annual verification monitoring proposed in the GCAPs for these sites is currently being implemented, and results of the April 2009 monitoring are presented in this report.

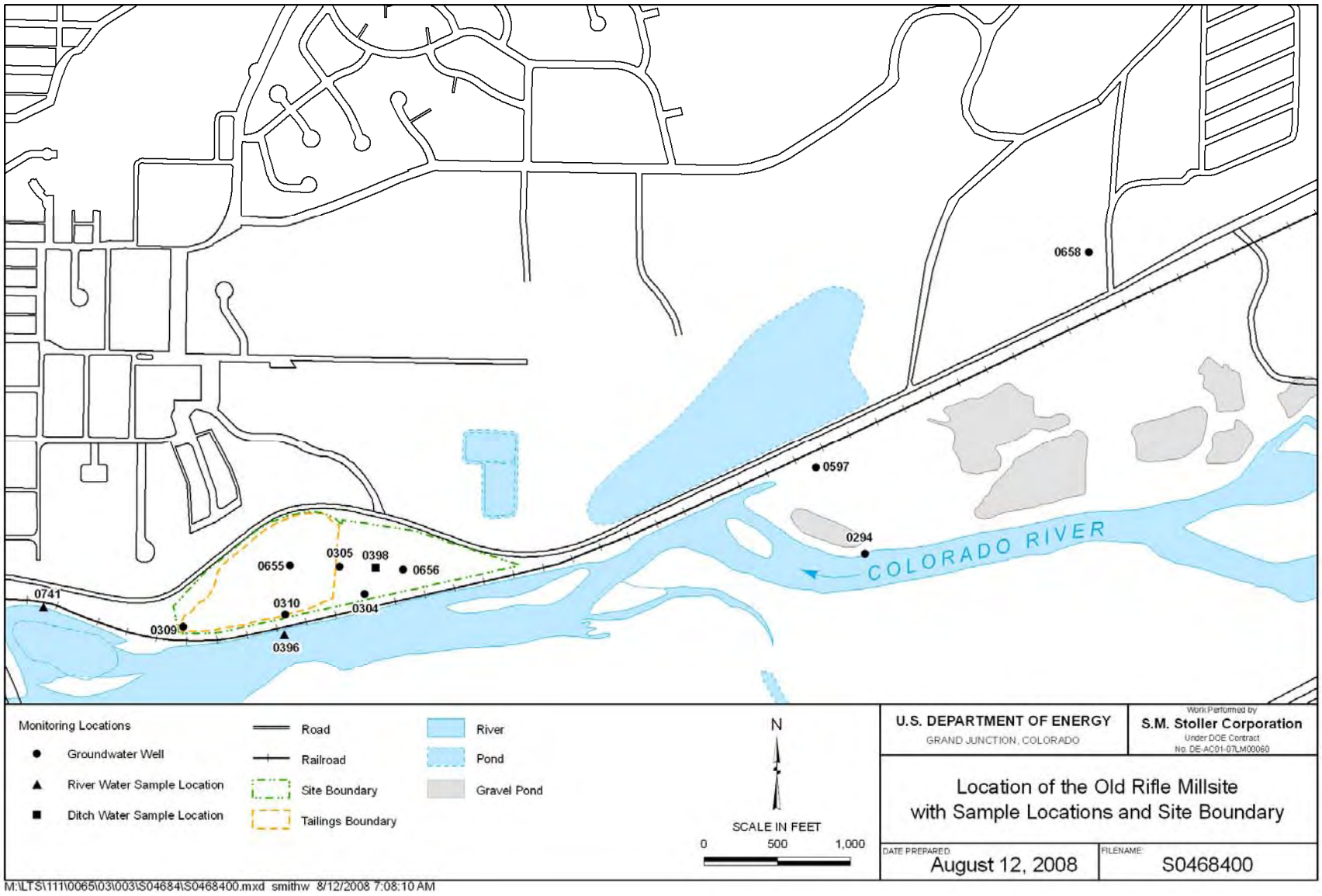

Figure 1. Location of the Old Rifle Mill Site with Sample Locations and Site Boundary

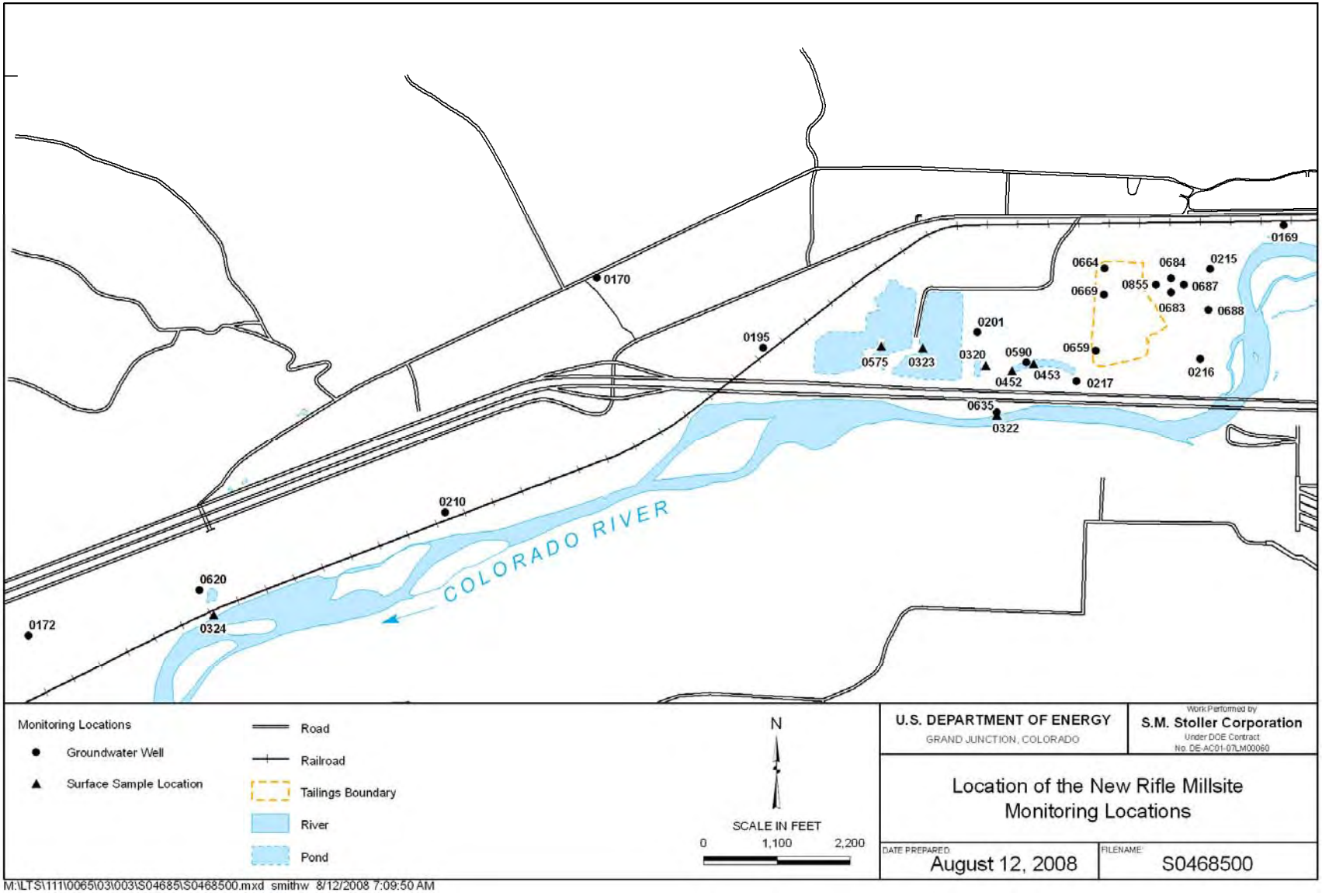

Figure 2. Location of the New Rifle Mill Site Monitoring Locations

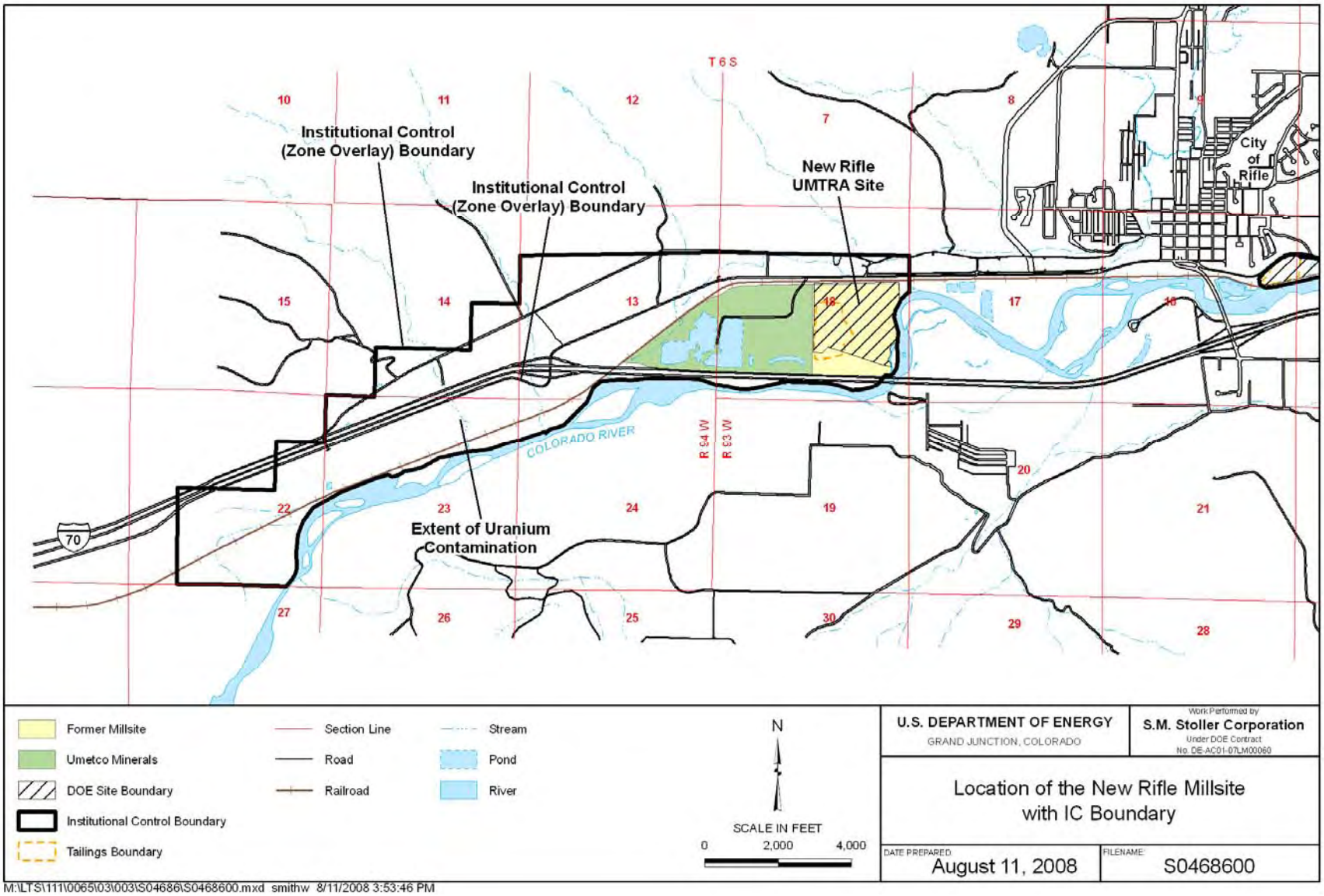

Figure 3. Location of the New Rifle Mill Site With IC Boundary

2.0 Site Conditions

2.1 Hydrogeology

The former Old Rifle processing site is 0.3 mile southeast of the city of Rifle, in a floodplain on the north side of the Colorado River (Figure 1). Groundwater occurs under unconfined conditions in the uppermost aquifer, which consists of river alluvium and the upper weathered surface of the Tertiary Wasatch Formation. The uppermost aquifer is 5 to 25 feet (ft) thick; saturation occurs from 5 to 10 ft below ground surface. The uppermost aquifer is composed of poorly sorted sediments ranging from clay-sized material through gravel, with cobbles and occasional boulders. Groundwater in the alluvial aquifer generally flows to the west-southwest; hydraulic conductivity ranges from 1.2 ft/day in the alluvium to 0.02 ft/day in the weathered Wasatch. Recharge is from groundwater ephemeral seeps above the mill site, precipitation, and an unlined irrigation return ditch that flows across the middle of the site. The Colorado River can briefly recharge the mill site groundwater during periods of maximum flow associated with spring runoff. Groundwater discharge is mainly to the Colorado River; another source of discharge is evapotranspiration. At Old Rifle, alluvium pinches out against bedrock outcrops at the downgradient end of the site. The Old Rifle site has no hydrological connection to the New Rifle site. Additional data regarding the hydrogeology of the Old Rifle site is provided in the SOWP (DOE 1999a).

The former New Rifle processing site is located about 1.5 miles west of the city of Rifle and is also situated on the north floodplain of the Colorado River (Figure 2). As with the Old Rifle site, the uppermost aquifer consists of river alluvium and the weathered surface of the Wasatch Formation. Other hydrologic properties are similar to those at the Old Rifle site (DOE 1999b). Alluvium is thickest along the western and southern portions of the site and is continuous for at least 4 miles downgradient of the site. The alluvium provides a source for domestic water in the area. Recharge is from ephemeral streams from the north and precipitation; groundwater discharge is to the Colorado River and through evapotranspiration.

At one time, Roaring Fork Resources operated a gravel mine on the property adjacent to and downgradient of the New Rifle site. Water was pumped from an active on-site mining pit where excavation was occurring to another on-site pit for storage and infiltration. (These pits have been referred to previously as the “Roaring Fork ponds.”) During its period of operation, the pumping affected groundwater flow downgradient of the New Rifle site, creating both a cone of depression in and a groundwater mound on the alluvial aquifer water table (DOE 1999b). Operation of the gravel mine ceased in early 2003, and natural alluvial groundwater flow conditions have been reestablished, though effects of the ponds on contaminant distribution persist today. Over time, these effects have become less pronounced with the progression of natural flushing.

2.2 Groundwater Quality

Alluvial groundwater in background locations near the Rifle sites has concentrations of selenium and uranium that are above applicable standards (DOE 1995b). Sulfate levels in background locations have also been relatively high, far exceeding the secondary drinking water standard of 250 milligrams per liter (mg/L) (non-enforceable; based on aesthetic considerations). However,

it has been demonstrated that groundwater in the uppermost aquifer beneath the Old Rifle site and beneath and downgradient of the New Rifle site was contaminated by site-related activities.

Table 1 presents historical data for COCs in groundwater at both sites prior to completion of surface remediation. A comparison of historical data with benchmarks indicates that criteria were exceeded for a number of constituents; contamination at the New Rifle site was much greater than at the Old Rifle site. Additionally, while groundwater was not being used in the vicinity of the Old Rifle site, several private wells were present in the alluvial aquifer downgradient of the New Rifle site (DOE 1995b).

Table 1. Historical Groundwater Chemistry for Old and New Rifle Site COCs

COC (all units mg/L)	Benchmark	Old Rifle Site		New Rifle Site	
		Historical Range[a] Aug. 1990−Aug. 1994	Median	Historical Range[a] Aug. 1990−Aug. 1994	Median
Ammonia as NH_4[b]	na	na	na	506−1,750	1,030
Arsenic	0.05[c]	na	na	0.97−1.3	1.1
Molybdenum	0.10[c]	na	na	2.3−3.7	2.9
Nitrate + Nitrite as N	10[c]	na	na	124−251	177
Selenium	0.036[d]	0.007–0.085	0.072	<0.002−0.3	<0.05
Uranium	0.067[d]	1.6–2.1	1.8	0.24−0.37	0.29
Vanadium	na	0.5–-0.75	0.55	0.59−2.8	1.3

[a]Ranges and median values are from the Baseline Risk Assessment (DOE 1995a), Table 3.1. (Pre-remedial action)
[b]No longer considered as a COC; included to understand nitrate behavior.
[c]EPA UMTRA Groundwater Project standard (40 CFR 192).
[d]Maximum background value, cleanup goal.
na=not applicable

During surface remediation, mill tailings and other residual radioactive materials (RRM) were removed; surface remediation was completed by 1996, and tailings were stabilized in an engineered repository located about 15 miles north of Rifle. RRM was removed down to and, in some cases, just below the groundwater surface. Clean gravel and soil were used to fill the excavations, and the surface was given 6 inches of topsoil and sown with seed mixtures.

Subsequent characterization completed at the New Rifle site as part of a pilot study for removal of vanadium from the groundwater (DOE 2000) indicated that some residual soil contamination remains at that site below the water table. Analyses showed elevated concentrations of vanadium; several samples also showed residual concentrations of molybdenum, uranium, and arsenic. Most of these soils are associated with the location of a former disposal pond and, to a lesser extent, with former tailings pile locations. Recent activities conducted by the City of Rifle have taken place to the east of these known contaminated soils. Soil characterization was not conducted at the Old Rifle site except to confirm that radiological cleanup criteria were met.

2.3 Land and Water Use

The City of Rifle acquired the former Old Rifle processing site from the State of Colorado in 2000. Because all groundwater contamination is contained on the mill site and discharges into the Colorado River, adjacent property is not sampled. The City built a maintenance facility on the east end of the site and has made no decision on future use of the western end of the property.

The former New Rifle processing site was transferred from the State of Colorado to the City of Rifle in 2004. The adjacent downgradient property was owned by Umetco Minerals Corporation, which was acquired by DOW Chemical (Figure 3); other private parties own parcels farther downgradient of the site.

The City is constructing a wastewater treatment facility on the northeastern portion of the site and has other long-range plans for the remainder of the site. On-site construction activities that took place during 2009 included excavation and dewatering of some areas of the site; this resulted in disturbances of residual contaminated soil and local effects on the shallow groundwater system. Unusually high spikes in contaminant concentrations were observed in samples collected from some wells in proximity to construction activities (see Section 3.2.2).

Historically, domestic wells present downgradient of the New Rifle site were used for drinking water. However, these wells are no longer in use, and water at these locations is supplied by the City. The Roaring Fork gravel pit (now owned by DOW Chemical) ceased operation in 2003, and the ponds have since filled and equilibrated with the local water table. The banks of the ponds have been contoured and seeded. According to an agreement between DOW Chemical and the State of Colorado, use of the ponds by livestock will be restricted, probably by fencing. No immediate plans are in place for this property.

3.0 Monitoring Program

3.1 Monitoring Network

Sampling locations comprising the monitoring network at the Old Rifle processing site are listed in Table 2. The monitoring network consists of nine monitor wells, six on site and three background; and four surface water locations, one upgradient of the site, two at the site, and one downgradient of the site (Figure 1). Selenium, uranium, and vanadium are monitored at most of these locations.

Table 2. Summary of Monitoring Requirements for the Old Rifle Site

Location	Monitoring Purpose	Analytes	Frequency[a]
RFO-0305, -0655	Center of plume west side of ditch	Se, U, V	Semiannually
RFO-0656	Center of plume east side of ditch	Se, U, V	Semiannually
RFO-0304, -0309, -0310	Farthest downgradient location; leading edge of plume	Se, U, V	Semiannually
RFO-0292A, −0658, −0169	Background groundwater quality; upgradient monitor well	Se, U, V	Semiannually
RFO-0398	Monitor surface water background U recharging aquifer; on-site ditch	U	Semiannually
RFO-0294 (to replace −598), -0396, −0741	Surface water - upgradient, adjacent to site, and downgradient locations on Colorado River; monitor effect of site on river	Se, U, V	Semiannually

[a]Monitoring will be discontinued when/if the contaminant concentrations have remained below the compliance levels for 3 consecutive years.

Monitoring requirements for the New Rifle site are listed in Table 3. The monitoring network consists of 17 monitor wells at various locations and seven surface sampling sites. The two Old Rifle background wells also serve as background for the New Rifle site. The analytes monitored vary with sample location.

Table 3. Summary of Monitoring Requirements for the New Rifle Site

Location	Monitoring Purpose	Analytes	Frequency
0170, 0172, 0210, 620	Monitor middle and leading edge of molybdenum, uranium, and nitrate plumes.	Molybdenum, uranium, nitrate	Annually
0195, 0201, 0215, 0216, 0217, 0590, 0635, 0658, 0659, 0664, 0669, 0670, 0855	Monitor flushing in main body of plumes.	Molybdenum, nitrate, uranium	
0320, 0322, 0323, 0324, 0452, 0453, 0575	Monitor surface water to determine impact of groundwater discharge to surface water and ecological receptors.	Molybdenum, nitrate, uranium, vanadium	
0215, 0216, 0217, 0590, 0658, 0659, 0664, 0669, 0670, 0855	Monitor flushing in main body of plumes.	Vanadium	

[a]Monitoring for a COC will be discontinued if concentrations are below its standard for 3 consecutive years.

3.2 Results of the Monitoring Program

3.2.1 Old Rifle Site

3.2.1.1 Surface Water

Results of surface water monitoring in the Colorado River (locations 0538, 0396, and 0741) indicate that water quality of the river adjacent to and downgradient from the Old Rifle site is indistinguishable from background water quality. This confirms the calculations included in the SOWP (DOE 1999a) demonstrating that groundwater discharged to the river would immediately undergo rapid mixing with river water. Sampling of the site ditch (RFO0398), which serves as a source of recharge to the alluvial aquifer, indicates that measurable amounts of uranium (0.030 mg/L) are present in that surface water body. Surface water results for 2009 are included in Appendix C.

3.2.1.2 Groundwater

Groundwater monitoring results for 2009 are included in Appendix C. Spot plots showing the distribution of COCs in groundwater at the Old Rifle site are presented in Figure 4 through Figure 6. Time-concentration graphs for wells sampled at both the Old and New Rifle sites are presented in Appendix A. Table 4 presents statistics for monitoring results for the Old Rifle site for two time periods—1998/1999, shortly after completion of surface remediation, and the most recent monitoring results from April 2009. Comparison of these two groups of data should provide some indication of the progress of natural flushing since surface cleanup ended.

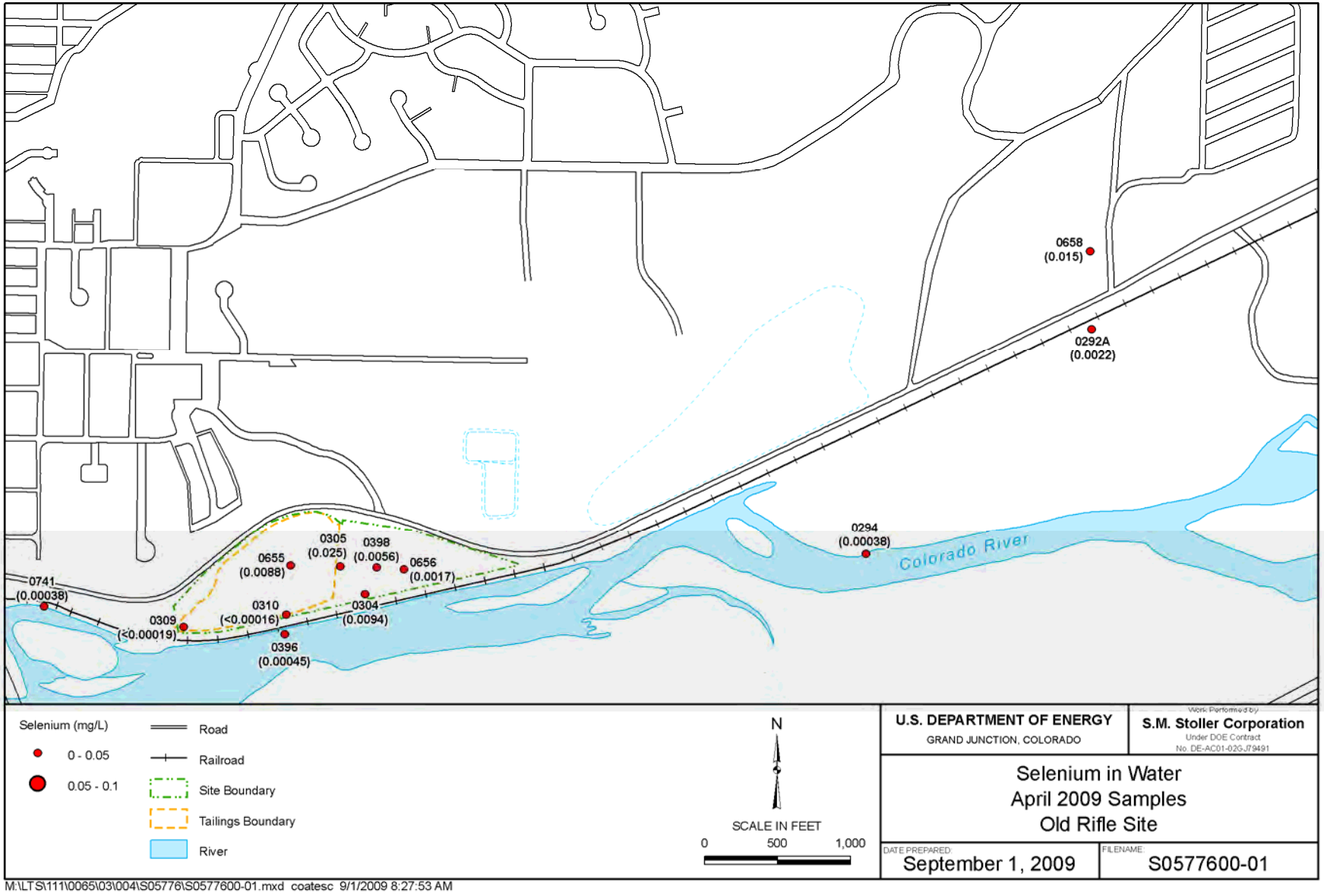

Figure 4. Selenium in Water at the Old Rifle Site

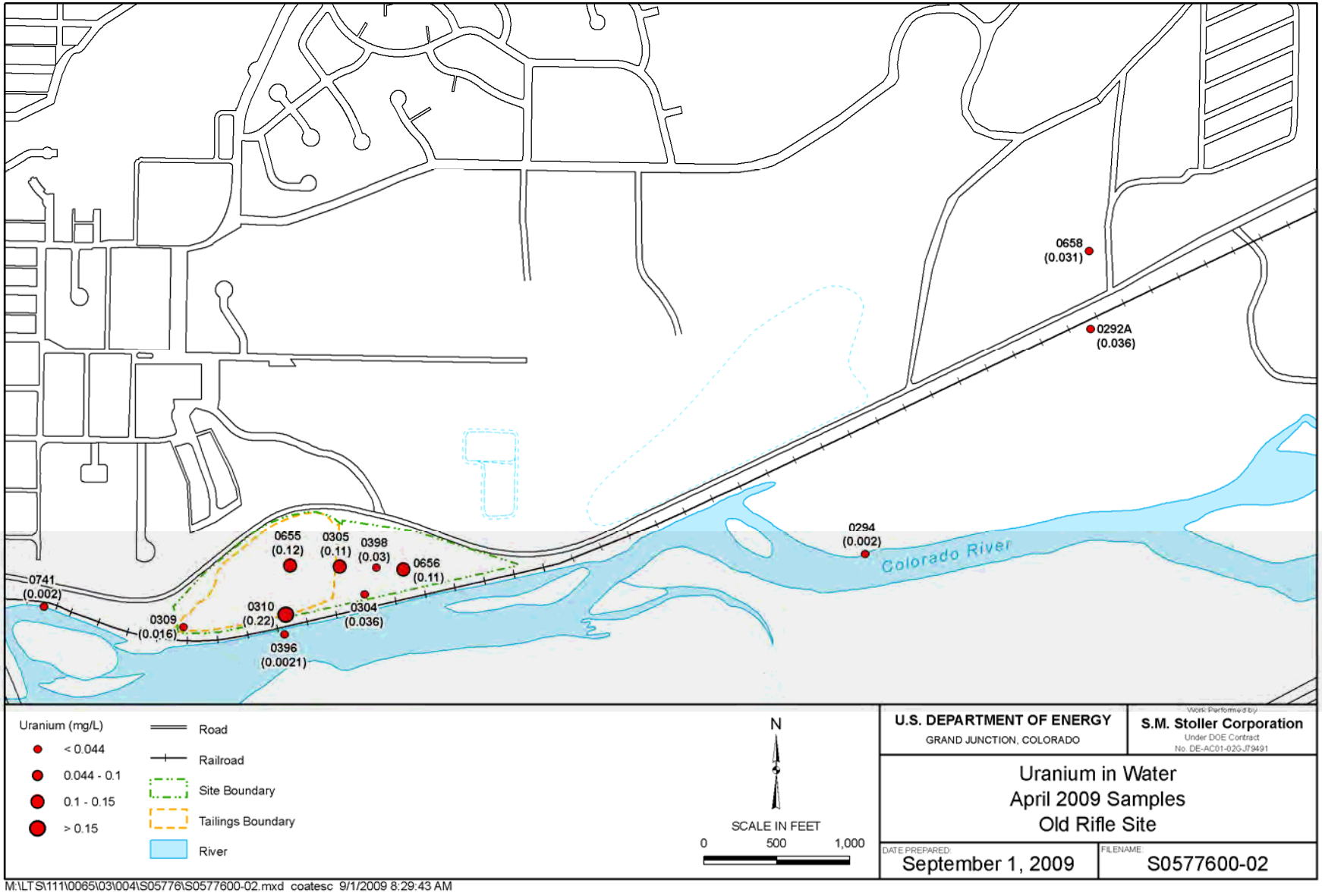

Figure 5. Uranium in Water at the Old Rifle Site

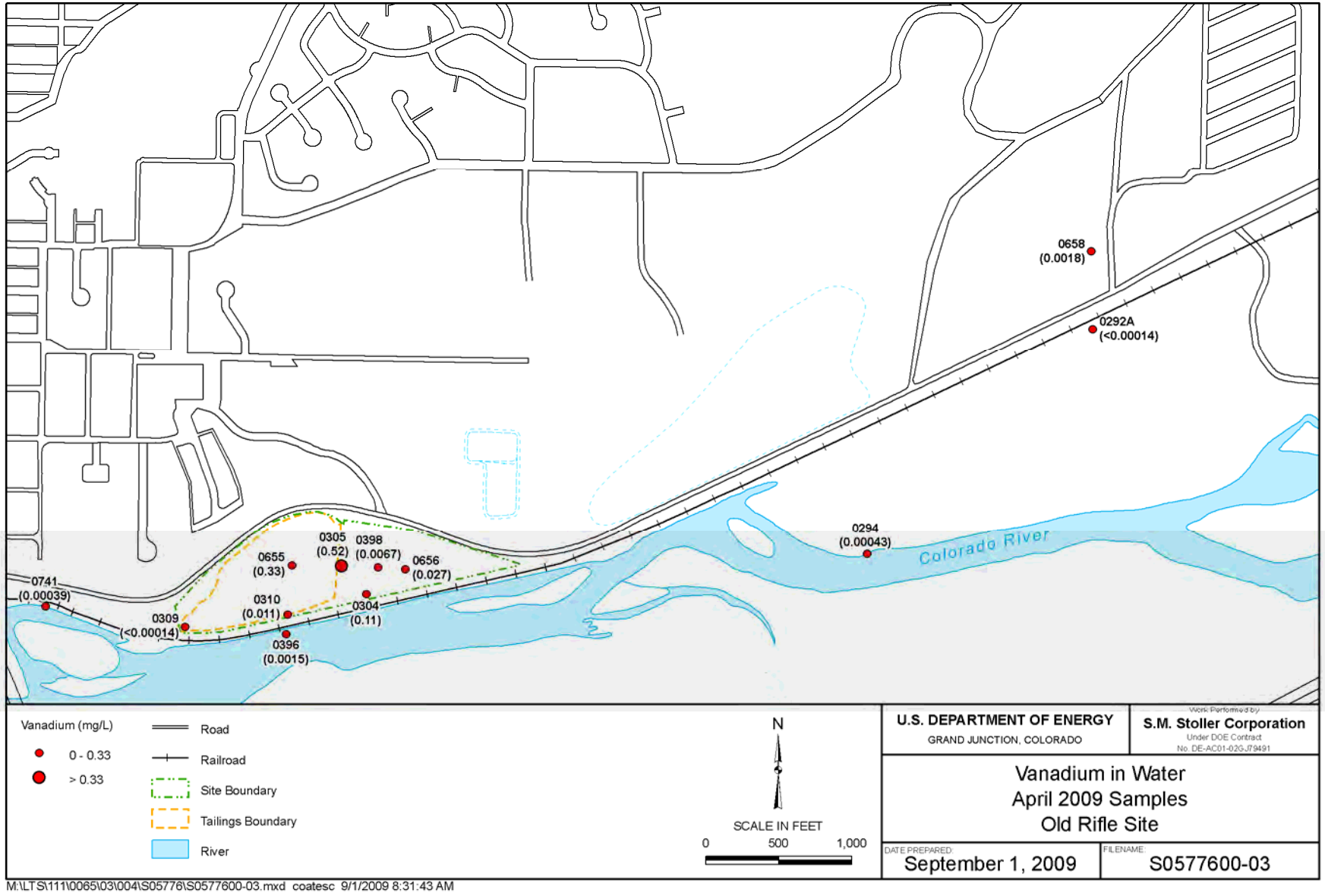

Figure 6. Vanadium in Water at the Old Rifle Site

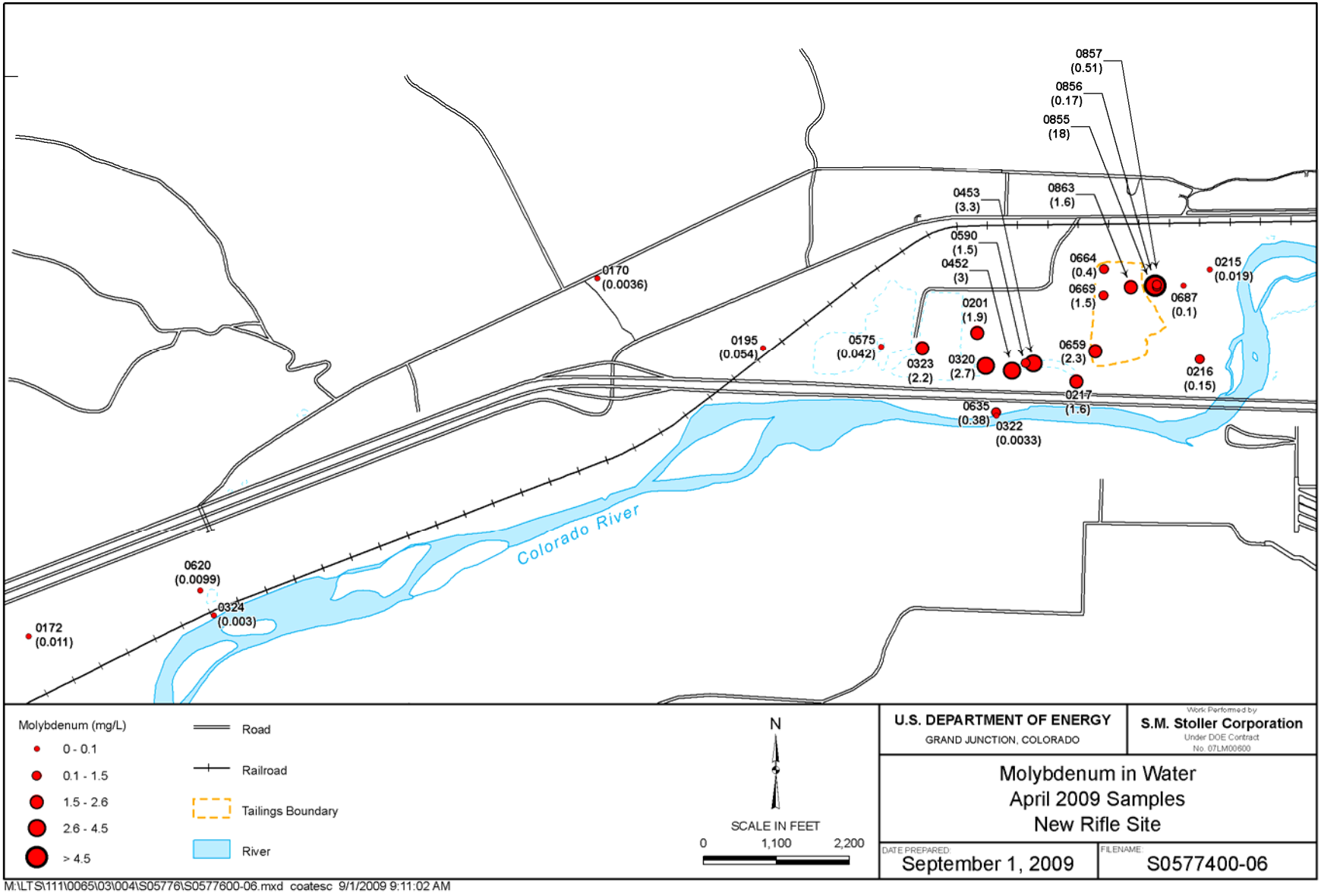

Figure 7. Molybdenum in Water at the New Rifle Site

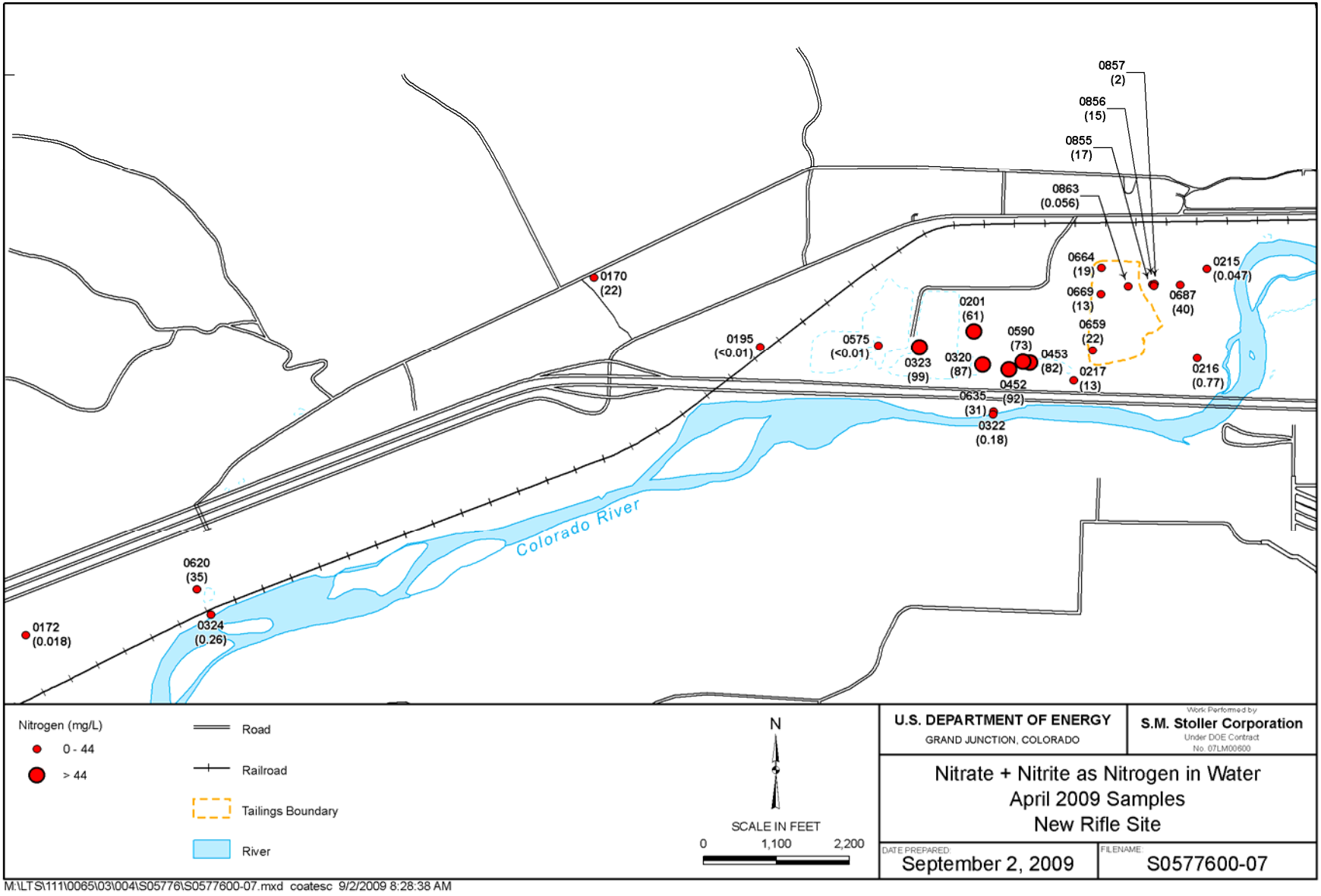

Figure 8. Nitrate + Nitrate as Nitrogen in Water at the New Rifle Site

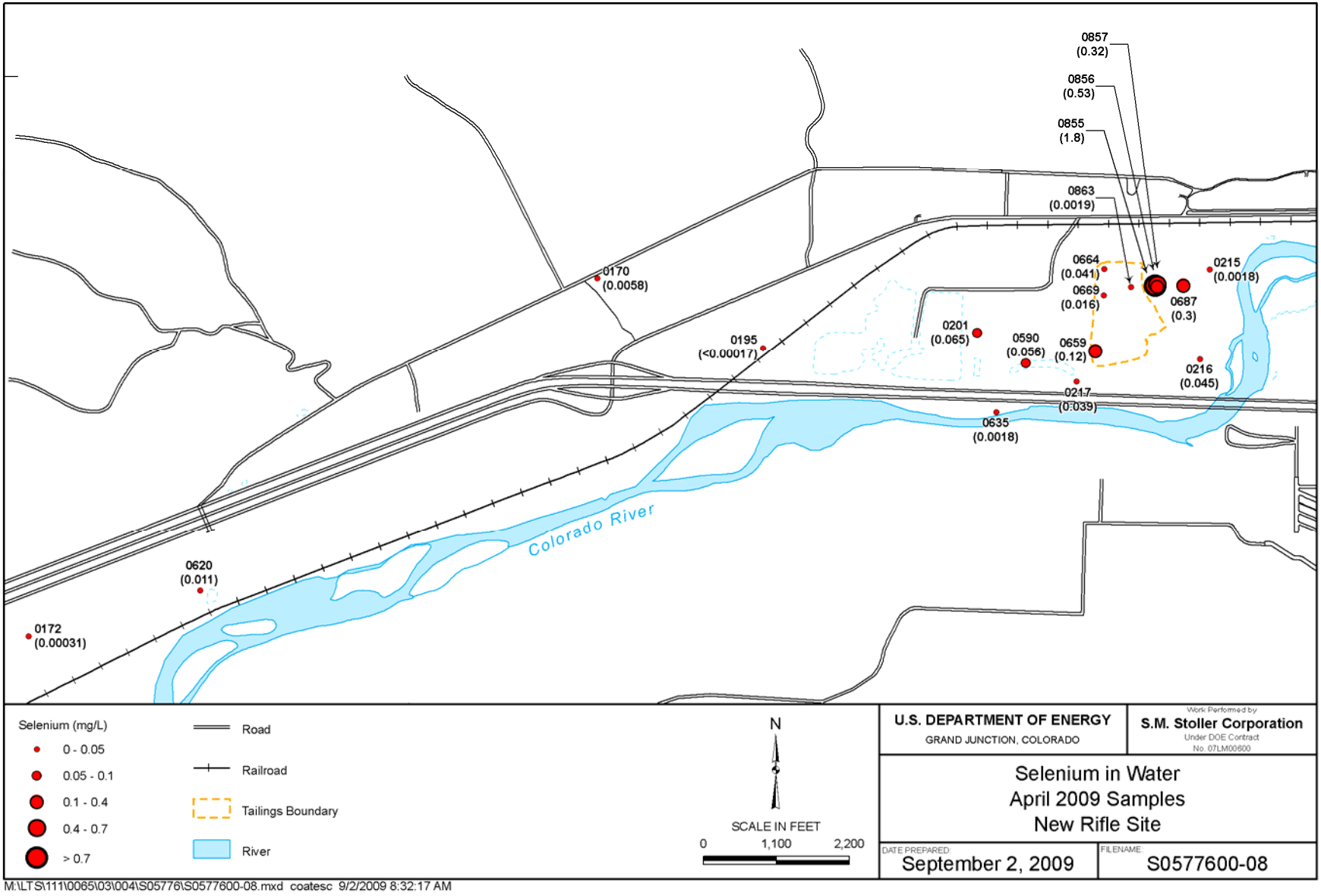

Figure 9. Selenium in Water at the New Rifle Site

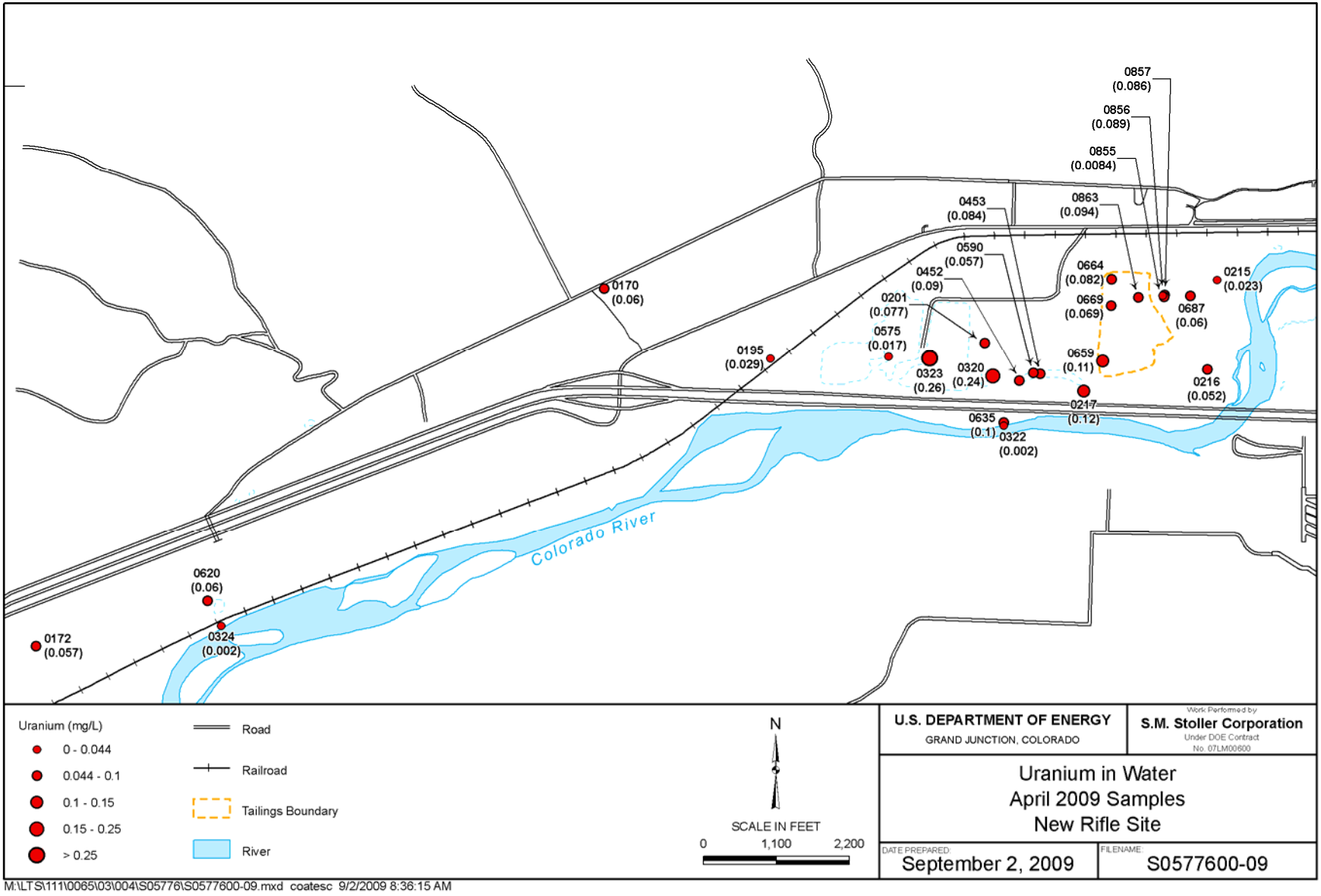

Figure 10. Uranium in Water at the New Rifle Site

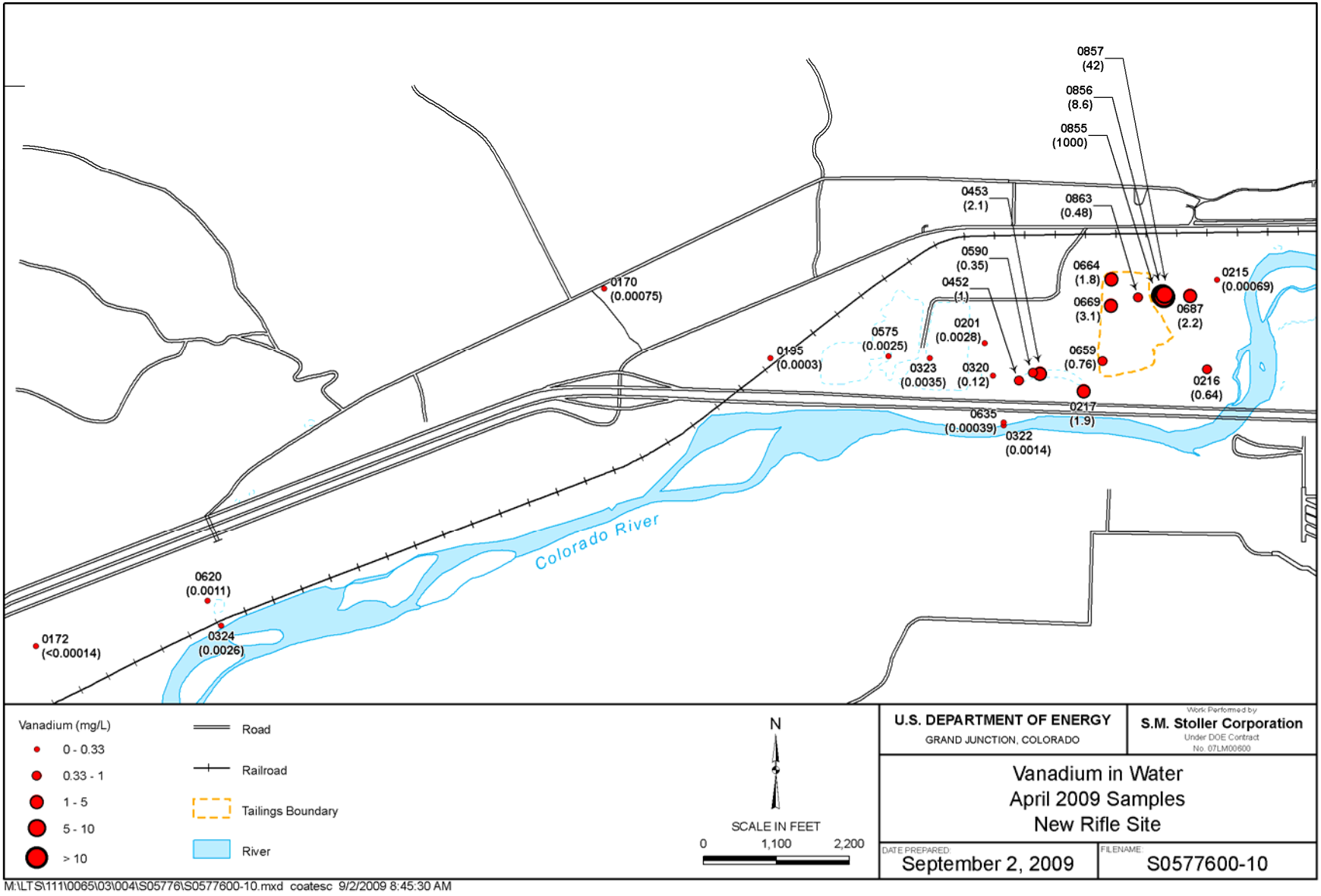

Figure 11. Vanadium in Water at the New Rifle Site

Table 4. Post-Remediation Groundwater Monitoring Results for the Old Rifle Site

COC (all units mg/L)	Benchmark	Range 1998–1999	Mean 1998–1999	Range April 2009	Mean April 2009
Selenium	0.05[a]	<0.0001–0.122	0.023	0.00014–0.025	0.0075
Uranium	0.044[b]	0.0268–0.270	0.0997	0.016–0.22	0.102
Vanadium	0.33[c]	<0.0006–0.799	0.2337	<0.00014–0.52	0.166

Data for wells 0304, 0305, 0309, 0310, 0655, 0656
[a]EPA Safe Drinking Water Act standard and approved alternate concentration limit.
[b]EPA UMTRA Ground Water Project standard (40 CFR 192)
[c]Risk-based concentration

Spot plots in Figure 4 through Figure 6 indicate that elevated uranium concentrations persist across the site, while selenium and vanadium are more localized. Vanadium is much less mobile than uranium and is more likely to adsorb to subsurface materials. Selenium can be easily mobilized under certain geochemical conditions, but studies indicate that mobilizing conditions are not present at the Rifle sites (DOE 1999b). It is likely that the limited distribution and greater decreases in concentration of vanadium and selenium compared to uranium can be attributed to some type of adsorptive mechanisms. Attenuation through adsorption rather than true flushing of the aquifer is probably the cause for decreases in selenium to levels below benchmark values.

By contrast, uranium is a highly mobile constituent and tends to be carried in solution. The fact that large decreases in uranium concentrations have not occurred at the site may indicate that groundwater is not moving through the subsurface as rapidly as was previously thought.

Selenium. The selenium concentrations for all wells were below the cleanup standard, as they were in 2008. The highest concentration from well RFN-0305 was at half the standard.

Uranium. Uranium continues to persist at the site. Uranium concentrations at most sampling locations exceeded the uranium standard. The current average concentration of uranium is slightly higher than it was 10 years ago. Time-concentration plots are ambiguous with respect to attenuation of uranium. Portions of plots for some wells show increases, while others show decreases; plots for other wells appear to fluctuate around almost level concentrations. Uranium monitoring should continue until conclusions can be reached regarding the applicability of the natural flushing compliance strategy. At that time, a change in the monitoring approach may be called for.

Vanadium. Data in Table 4 indicate that currently the average concentration of vanadium in Old Rifle alluvial groundwater is below the benchmark value of 0.33 mg/L; only a single location (0305) exceeded this value, though another was at that level; both increased slightly over 2008 values.

3.2.2 New Rifle Site

3.2.2.1 Surface Water

Surface water monitoring results for 2009 are included in Appendix C. Two surface water locations at the New Rifle site (locations 0322 and 0324) represent Colorado River water. The

other five surface locations were samples collected from the wetland area and former Roaring Fork gravel pond; these samples may be more representative of groundwater in the area, though they could have higher COC concentrations due to evaporation. The two river samples were chemically indistinguishable (in terms of COC concentrations) from one another as well as from background, indicating no site-related chemical signature. COC concentrations in river water samples were orders of magnitude less than concentrations in samples from the adjacent wetlands. No surface water standards were exceeded in the river. Sampling results confirm the calculations performed as part of the SOWP (DOE 1999b), which indicate that discharging groundwater undergoes significant mixing with river water and that rapid attenuation of contaminants occurs.

Elevated levels of the site-related constituents ammonia, molybdenum, nitrate, uranium and vanadium occur in the wetland area and in the Roaring Fork gravel pond. As natural flushing results in declining contaminant concentrations in the alluvial aquifer, corresponding declines should occur in these surface waters as well.

3.2.2.2 Groundwater

Groundwater beneath the New Rifle site was contaminated by former vanadium- and uranium-ore-processing operations that were ongoing from 1958 through 1972, from lignite ash processing from 1964 to 1967, and from vanadium processing (which did not produce tailings but may have produced milling solutions) from 1973 to 1984. Site field investigations have shown that the alluvial aquifer is the only aquifer affected by the former milling operations. Previously identified COCs in the alluvial aquifer with concentrations that exceed groundwater standards of 40 CFR 192 are arsenic, molybdenum, nitrate, selenium, and uranium. Fluoride levels have exceeded the Safe Drinking Water Act standard of 4 mg/L. Concentrations of ammonia, manganese, and vanadium have exceeded risk-based concentrations based on use of groundwater for domestic purposes in a residential setting (DOE 1999). Based on discussions with CDPHE, fluoride and manganese are of little concern at the site and were eliminated from the monitoring program. Ammonia and arsenic have declined below levels of concern for the most part, though analysis for these constituents has continued to a limited degree. Most of the following discussion focuses on the more widespread or persistent constituents—molybdenum, nitrate, selenium, uranium, and vanadium. Groundwater monitoring results for 2009 are included in Appendix C.

The most conspicuous change noted in groundwater monitoring data collected for 2009 was a pronounced spike in concentrations for molybdenum, arsenic, selenium, and vanadium, from samples collected from well RFN-0855. As mentioned previously, this is believed to be attributed to dewatering and excavation activities being conducted by the City of Rifle in association with construction of their wastewater treatment facility. Similar spikes were noted during excavation activities during surface remediation (DOE 1999b). In that instance, concentrations declined back to previous levels after surface disturbing activities were completed.

Spot plots showing the distribution of constituents monitored in New Rifle alluvial groundwater and in surface water are presented in Figure 7 through Figure 11. These plots contain some sample locations that are not part of the regular monitoring network, but which were sampled as part of another project. They are shown here to provide a more complete picture of contaminant

distribution. Those wells, however, are not included in site statistics so as to allow comparison of the same well sets from year to year. During April 2009, wells RFN-0658 and -0670 were not sampled because of insufficient water. Well RFN-0210 could not be found because the area was covered with drilling equipment.

In general, the contaminant plumes for the less mobile constituents, such as selenium and vanadium, are restricted in areal extent and are still concentrated around the former mill site. Plumes for more mobile constituents (nitrate, molybdenum, and uranium) are more extensive. To evaluate the progress of natural flushing at the New Rifle site, monitor wells were assigned to one of three groupings—on site, adjacent to site, and downgradient—for the purposes of computing statistics for analytical results.

On-site wells are those physically within the site boundary. As noted, residual soil contamination does exist at the New Rifle site below the water table. This contamination is most likely to affect groundwater in contact with those soils and serve as a persistent source of contamination to groundwater, and it would thus influence water quality of on-site wells. Although on-site wells are all grouped together for the purpose of computing groundwater statistics and comparing the results to historical trends, three subgroups of on-site wells were recognized in previous verification monitoring reports based on patterns of time-concentration plots for the wells (time-concentration plots are included in Appendix A). These patterns were interpreted as being related to the location and proximity of wells with respect to former source areas.

Wells 0169, 0215, and 0216 are located adjacent to the Colorado River and are upgradient from the main source of site groundwater contamination—the former raffinate ponds and tailings pile. Concentrations of most constituents in these wells are generally low and have had limited variability over the past 10 years. A notable exception is well 0216 in 2008, which showed spikes in molybdenum, uranium, and vanadium concentrations that remained elevated in 2009. This is likely due to groundwater pumping in this immediate area by the City of Rifle during construction of infrastructure for the wastewater treatment plant.

Locations 0855, 0658, and 0659 are in the footprint of the former raffinate ponds and tailings pile. Soil sampling conducted during the pilot study for vanadium at the site indicated that residual contamination exists in these areas and may have local influence on groundwater quality. These locations are characterized by time-concentration plots with the highest concentrations of most constituents and the greatest degree of variability over time. For the most part, no clear trends are observed in these wells. It is likely that adsorption/desorption reactions between groundwater and soils occur in this area and that groundwater concentrations are sensitive to fluctuations in the water table. As noted above, due to City of Rifle activities, concentrations for a number of constituents in well 0855 increased sharply (e.g., vanadium increased from 14 mg/L in 2007 before dewatering began to 1,000 mg/L in 2009). Future monitoring results will be evaluated to determine whether this contaminant “slug” has an effect on concentrations in downgradient wells. The City has ceased dewatering, groundwater levels are returning to normal, and concentrations should resort back to normal. The question is how long this might require.

The remaining on-site wells—0669, 0664, and 0670—are outside of the residual contamination area. Trends shown in time-concentration plots for these locations are more similar to those for

off-site locations. They show some variability but are typically decreasing (with some exceptions) for constituents with concentrations above benchmarks.

Contamination in off-site wells is attributed solely to the migration of contaminated groundwater downgradient and not from direct contact with a residual source. The wells downgradient of the New Rifle site were split into two groups according to their location from the Roaring Fork gravel ponds. As described previously, the ponds affected groundwater flow direction during pumping operations, thus hydraulically separating those two groups of wells to some extent. Additionally, activities associated with wetland construction were more likely to influence water quality of the wells adjacent to the site compared with those farther downgradient. These differences have lessened over time. Table 5 and Table 6 provide statistics for the three main groups of wells. Statistics were not computed for arsenic and selenium because of the low number of detections. Water quality benchmarks are provided in Table 5 for comparison. Historical data provided in Table 1 are based on combined results of data from wells on and adjacent to the site. Time-concentration plots for the New Rifle wells are also included in Appendix A.

Table 5. Mean Concentrations in Groundwater—1998/1999 and April 2008 for the New Rifle Site

Contaminant	Benchmark (mg/L)	On Site[a]		Adjacent to Site[b]		Downgradient[c]	
		1998–99 mean (mg/L)	April 2009 mean (mg/L)	1998–99 mean (mg/L)	April 2009 mean (mg/L)	1998–99 mean (mg/L)	April 2009 mean (mg/L)
Molybdenum	0.1[d]	2.498	3.73	1.928	1.35	0.035	0.0229
Nitrate + Nitrite as N	10[d]	61.13	8.83	230	44.5	75.8	7.34
Uranium	0.067[e]	0.1012	0.057	0.097	0.0885	0.0752	0.049
Vanadium	na	5.68	168 (1.4 excluding well 0855)	0.367	0.563	<0.0001	0.0004

[a]Includes wells 0215, 0216, 0658, 0659, 0664, 0669, 0670, 0855 (not all wells sampled for all analytes)
[b]Includes wells 0201, 0217, 0590, 0635 (only 0217 and 0590 for vanadium)
[c]Includes wells 0170, 0172, 0195, 0210
[d]EPA UMTRA Ground Water Project standard (40 CFR 192)
[e]Maximum background value, cleanup goal
na = not applicable

Table 6. Range of Concentrations in Groundwater—1998/1999 and April 2009 for the New Rifle Site

Contaminant	On Site[a]		Adjacent to Site[b]		Downgradient[c]	
	1998–99 range (mg/L)	April 2009 range (mg/L)	1998–99 range (mg/L)	April 2009 range (mg/L)	1998–99 range (mg/L)	April 2009 range (mg/L)
Molybdenum	0.0237–6.84	0.019–18	0.661–3.15	0.38–1.9	0.0041–0.231	0.0036–0.054
Nitrate + Nitrite as N	0.013–368	0.047230	0.393–836	13–73	0.0522–377	0.01–22
Uranium	0.0103–0.284	0.0084–0.11	0.0837–0.120	0.057–0.12	0.054–0.177	0.029–0.060
Vanadium	<0.001–25.3	<0.00069–1,000	<0.001–2.69	0.00039–1.9	0.00065–0.0018	<0.00014–0.00075

[a]Includes wells 0215, 0216, 0658, 0659, 0664, 0669, 0670, 0855 (not all wells sampled for all analytes)
[b]Includes wells 0201, 0217, 0590, 0635 (only 0217 and 0590 for vanadium)
[c]Includes wells 0170, 0172, 0195, 0210

Ammonia. After remaining below the target level of approximately 200 mg/L for some time, ammonia spiked to 290 mg/L in one well (0863) in the vicinity of the City of Rifle construction area. Downgradient well RFN-0590 had a relatively high concentration of 170 mg/L. There is no discernible pattern in ammonia distribution.

Arsenic. Arsenic levels exceeding the UMTRA standard were observed in only two wells—both onsite and in the vicinity of City of Rifle construction work. Arsenic levels down gradient and offsite have been and continue to be well below the standard.

Molybdenum. Molybdenum has been one of the most widespread site constituents due its high mobility. It remains elevated in onsite wells. Well 0855 spiked at an all-time high observation of 18 mg/L. It appears that molybdenum in the portion of the plume downgradient of the former gravel ponds has dissipated. However, relatively the relatively high concentrations observed in the vicinity of the ponds recently suggest that molybdenum may move downgradient and recontaminate these areas.

Nitrate. Highest concentrations of nitrate are immediately downgradient of the site, though the standard is exceeded as far downgradient as location 0620. Likely the source of much of the nitrate is degradation of ammonia. Trends (or lack thereof) are likely more dependent on ammonia behavior than natural flushing processes.

Selenium. Selenium concentrations exceeding the Safe Drinking Water Act standard were observed onsite and immediate downgradient of the site. Concentrations were highest in the vicinity of the City of Rifle construction area with concentrations up to 1.8 mg/L in well RFN-0855.

Uranium. Uranium continues to persist throughout the plume with the standard being exceeded as far downgradient as well RFN-0172. However, all locations downgradient of the former gravel ponds are below the maximum background concentration of 0.067 mg/L. Similar to molybdenum, this may be an indication that the portion of the plume downgradient of the former gravel ponds has dissipated. Also similar to molybdenum, the relative high concentrations of uranium in the vicinity of the ponds suggest that downgradient movement and recontamination of these areas could occur.

Vanadium. Vanadium spiked to the highest concentration ever observed (1,000 mg/L) in well 0855 in association with the City of Rifle construction work. Elevated concentrations are observed only on site and immediately downgradient of the site, as has been the case is past years.

3.2.2.3 Mann-Kendall Test for Trend

Another method of data evaluation is the nonparametric Mann-Kendall test for trend (Gilbert 1987). The test does not require any particular data distribution and will accommodate missing values and data reported as less than the detection limit. Essentially, it analyzes a series of data by subtracting the values of data collected earlier from those of later data. The method results in a test statistic that is a positive or negative (meaning increasing or decreasing trend) and is used to estimate the probability that the trend is real. Appendix D-1 of the GCAP (DOE 2006) provides a description of the Mann-Kendall test for trend.

As a preliminary analysis, several wells from the New Rifle site were selected for application of the Mann-Kendall test based on their locations with respect to the uranium and molybdenum plumes. The test was applied to uranium and molybdenum concentrations because these constituents are the most widespread and the most mobile. Additionally, they are not affected by geochemical transformation processes as are ammonia and nitrate. Wells 0664 and 0669 are from two on-site locations near the original plume source areas (raffinate ponds and tailings piles). Well 0201 is located immediately downgradient of the site and upgradient of the Roaring Fork ponds; well 0195 is located immediately downgradient of the ponds. Results of applying the Mann-Kendall test statistic to uranium and molybdenum values for these wells are included in Appendix B. On-site wells 0664 and 0669 show strongly decreasing trends (at the 95 percent confidence level) for both uranium and molybdenum. Likewise, well 0201 shows a decrease in molybdenum (95 percent confidence level). Downgradient well 0195 shows a strong decrease in uranium (95 percent confidence level) but no trend in molybdenum. The lack of a molybdenum trend is likely because the concentrations have reached levels that are fairly low (about half the MCL) and not much higher than background.

These results support the conclusions that natural flushing for these two constituents is progressing and that the main portions of the uranium and molybdenum plumes are moving off site into the adjacent downgradient area. The results also illustrate that different portions of the plume would be expected to display differing characteristics over time and space depending on site-specific characteristics (e.g., source location, hydrologic features). This is an important factor in evaluating long-term trends and assessing the attainment of remediation goals.

4.0 Results and Conclusions

Concentrations of selenium and vanadium at the Old Rifle site continue to decrease. The mean uranium concentration is decreasing, but not as quickly as expected according to modeling results in the SOWP, which indicated uranium would meet its groundwater standard sitewide within a 30-year period. The vanadium benchmark is currently exceeded only at one well; all wells currently meet the selenium benchmark. It can be concluded that selenium cleanup goals have been met for all wells; vanadium compliance goals have been met based on the site-wide average. Time-concentrations plots in Appendix A-1 indicate that these constituents have been relatively stable in Old Rifle wells for the last few of years of monitoring.

As expected with natural flushing, contaminant plumes for a number of constituents associated with the New Rifle site have been decreasing in general and moving downgradient over time. The only significant constituents in terms of concentration and distribution are molybdenum, nitrate, uranium, and vanadium. The highest concentrations of the mobile constituents—molybdenum, nitrate, and uranium—were found downgradient of the site. Nitrate concentrations, which had been increasing in response to ammonia degradation, appear now to be on the decline. The uranium standard was exceeded over the entire plume length; concentrations appear to be nearly constant in some wells. Highest concentrations of vanadium were still found on site. Significant spikes in concentration for arsenic, molybdenum, selenium, and uranium were noted for one on-site well (0855) due to dewatering and excavation activities conducted on the eastern part of the site by the City of Rifle.

With the number of variables that can affect distribution of contaminants in the alluvial aquifer at New Rifle, it is probably too early to determine the effectiveness of natural flushing at the site. However, data collected for the site provide indications that some constituents are flushing, even if trends do not exactly match predictions. Generally speaking, groundwater contamination is decreasing. While some individual wells may display increasing concentrations for certain constituents, this is to be expected as the plume centers migrate downgradient away from the site. On the basis of combined spatial and temporal data, it appears that plume centers for molybdenum, nitrate, and uranium have already moved off site and continue to dissipate downgradient. The portions of the molybdenum and uranium plumes downgradient of the former gravel ponds appears to have dissipated; however elevated upgradient concentrations could eventually recontaminate these areas as they move downgradient. Arsenic and selenium have little mobility and will probably remain confined to site groundwater. Vanadium, also relatively immobile, has migrated off site, but only to a very limited degree.

Surface water in the Colorado River is not being adversely affected by groundwater discharge at either the Old or New Rifle sites. At the present time, the selected compliance strategies at both sites appear to be adequately protective. A more definitive evaluation may be possible after more monitoring data are collected.

5.0 References

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Appendix A−1

Time-Concentration Plots for Wells at the Old Rifle Site

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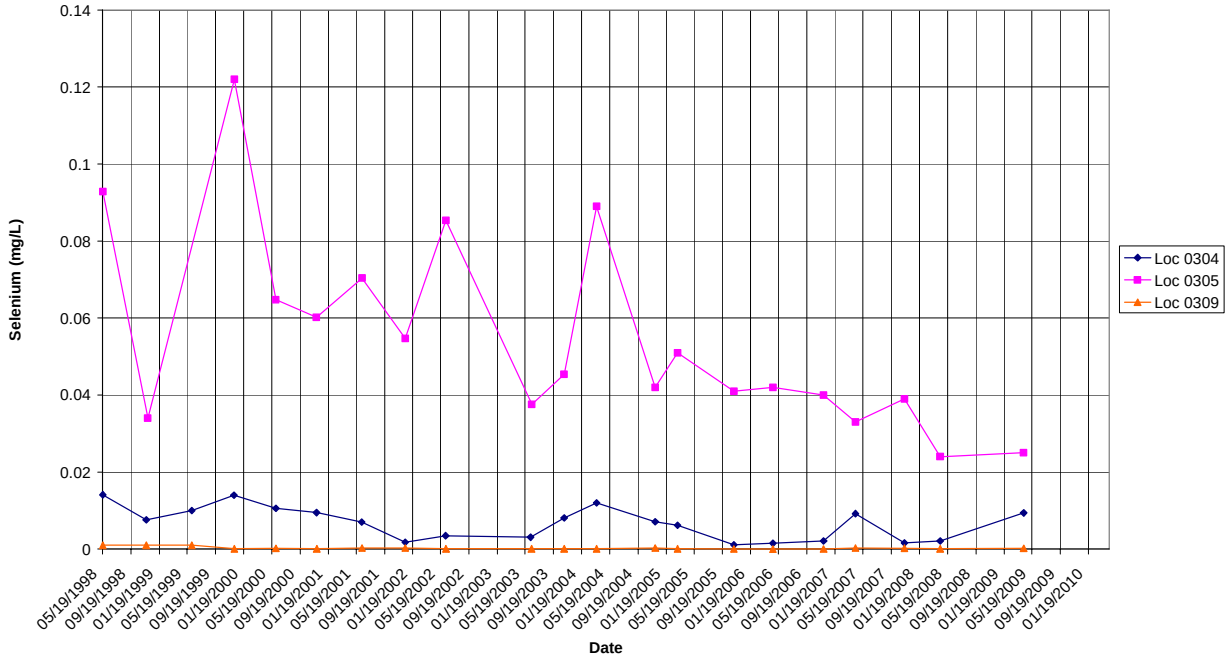
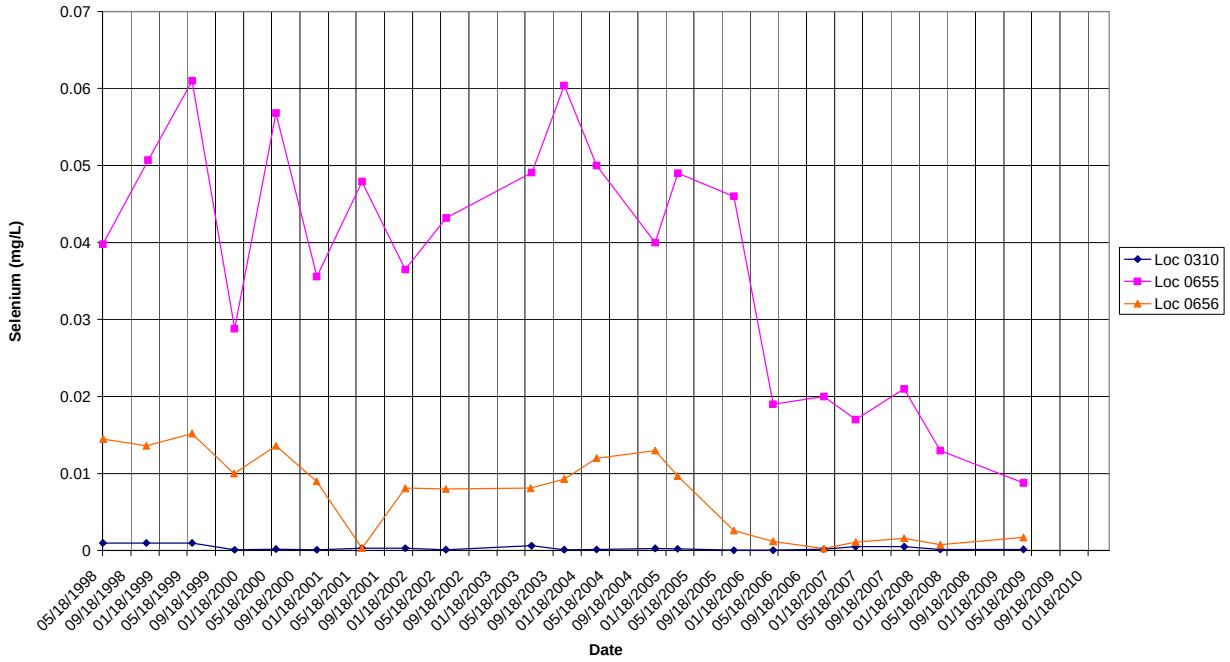
Rifle Old Processing Site (RFO01)

Selenium Concentration



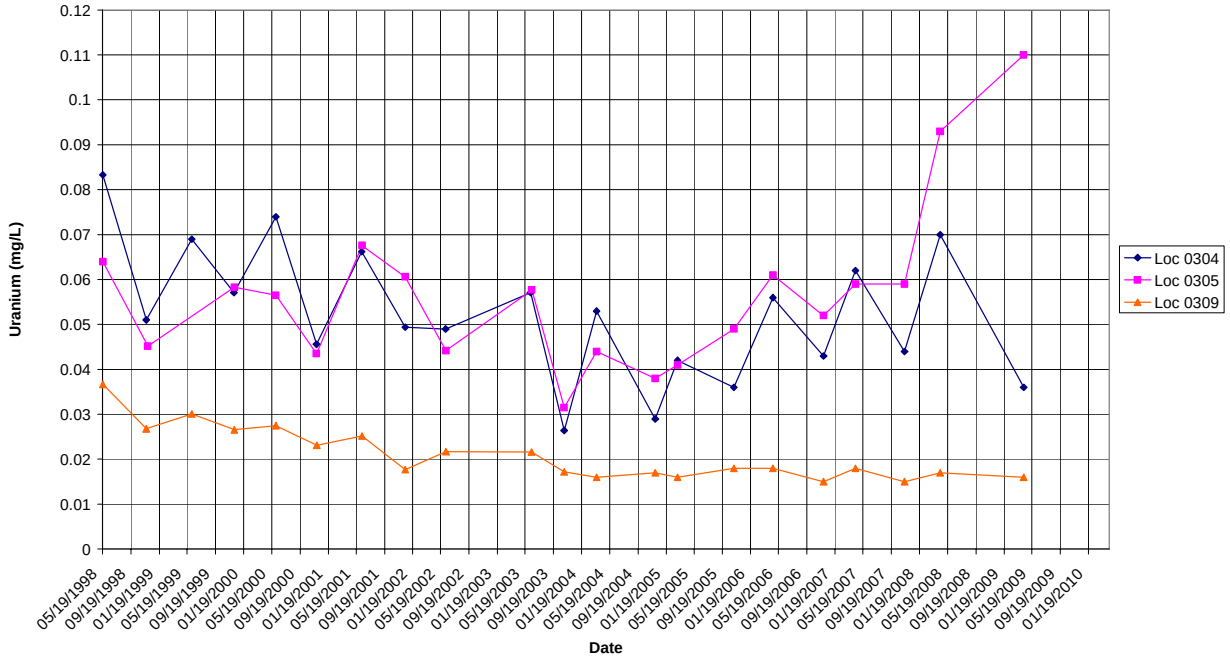
Rifle Old Processing Site (RFO01)

Selenium Concentration



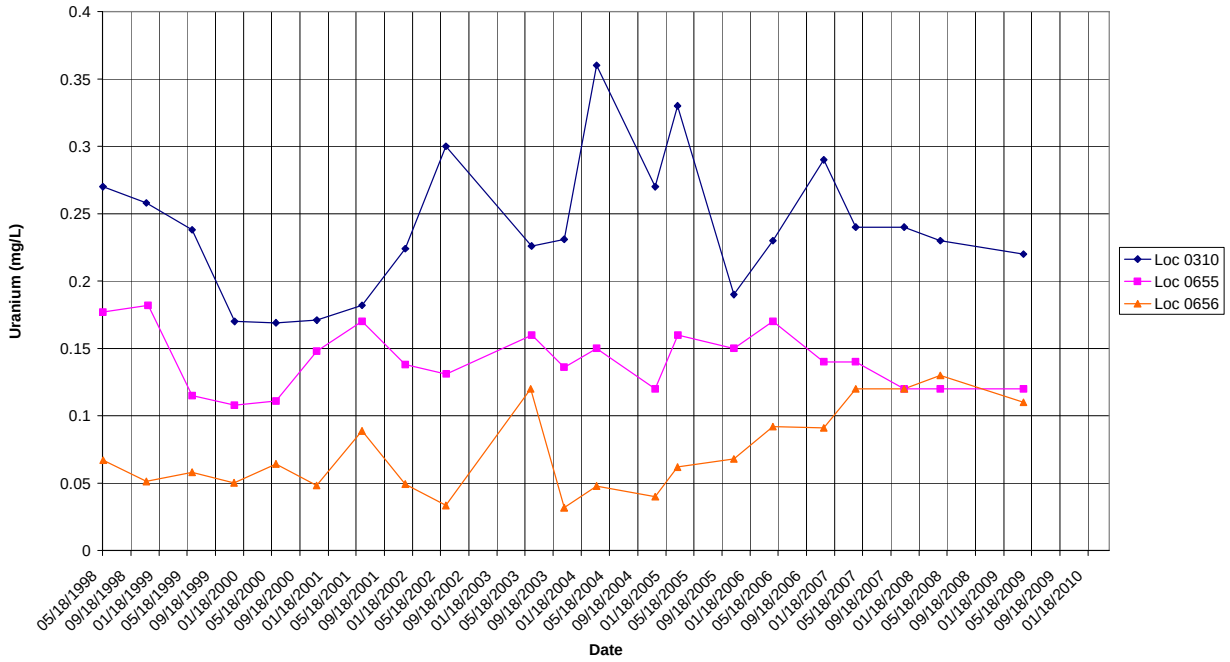
Rifle Old Processing Site (RFO01)

Uranium Concentration



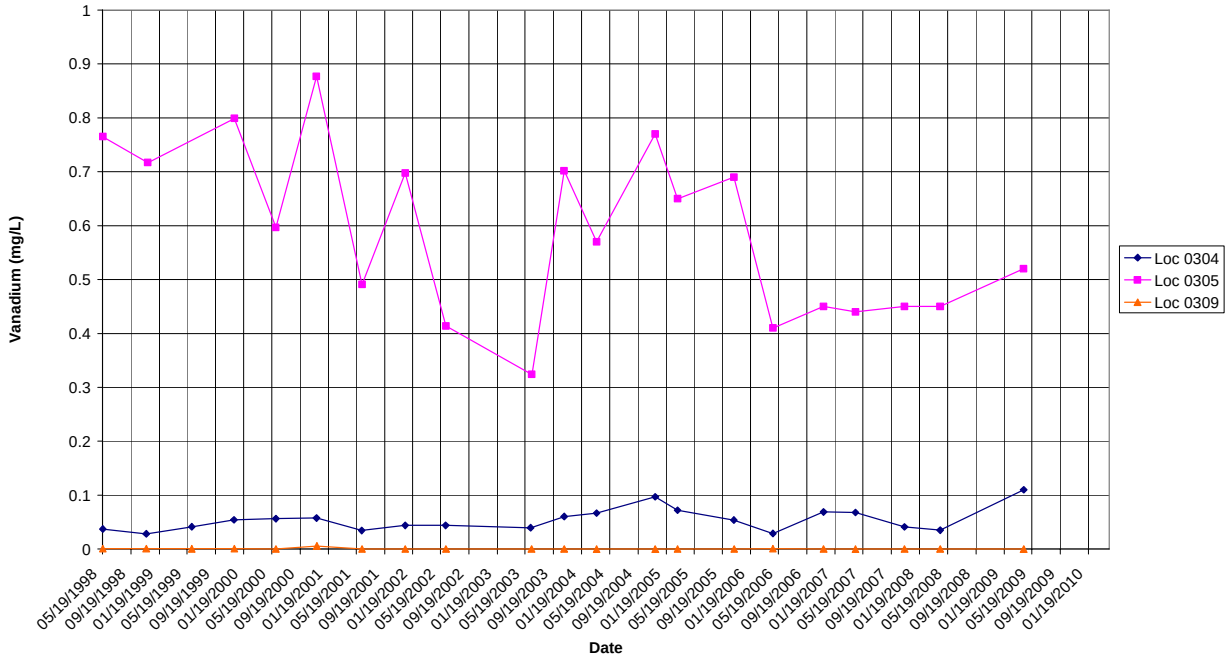
Rifle Old Processing Site (RFO01)

Uranium Concentration



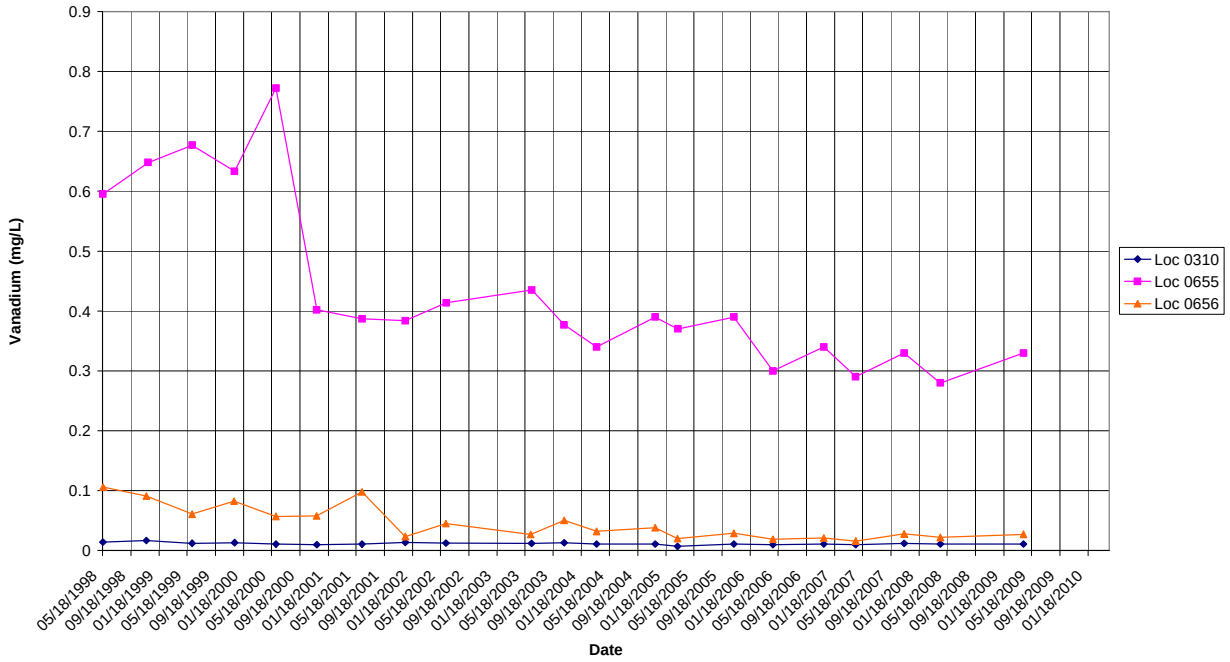
Rifle Old Processing Site (RFO01)

Vanadium Concentration



Rifle Old Processing Site (RFO01)

Vanadium Concentration



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Appendix A−2

Time-Concentration Plots for Wells at the New Rifle Site

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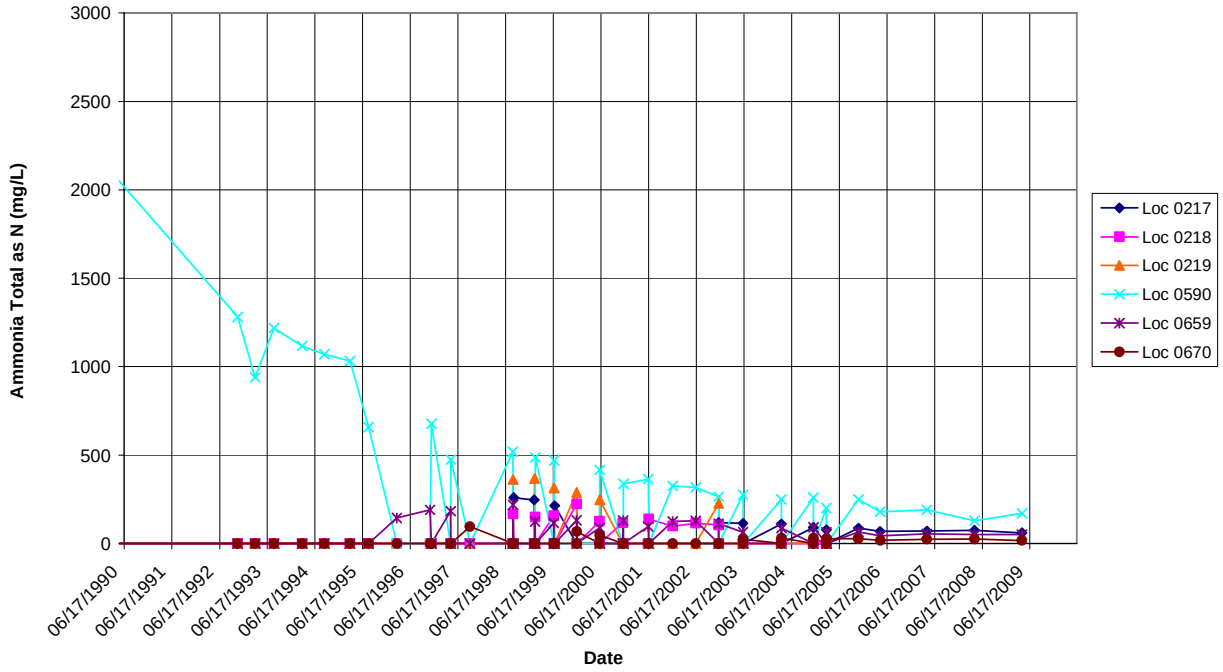
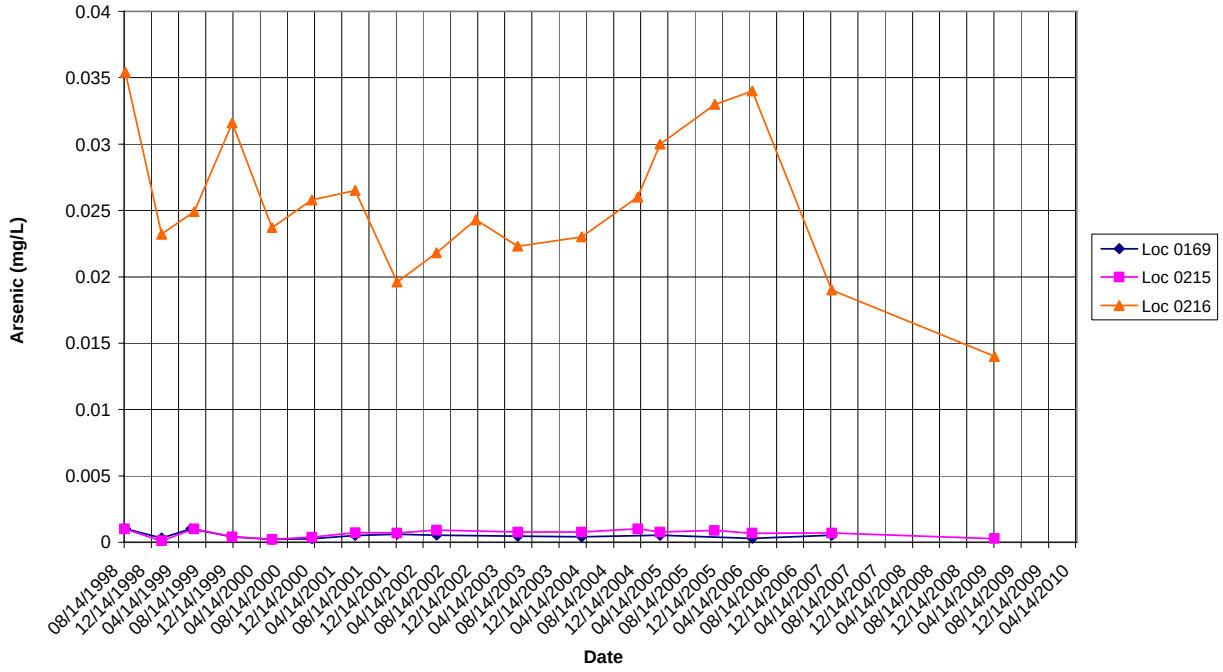
Rifle New Processing Site (RFN01)

Ammonia Total as N Concentration



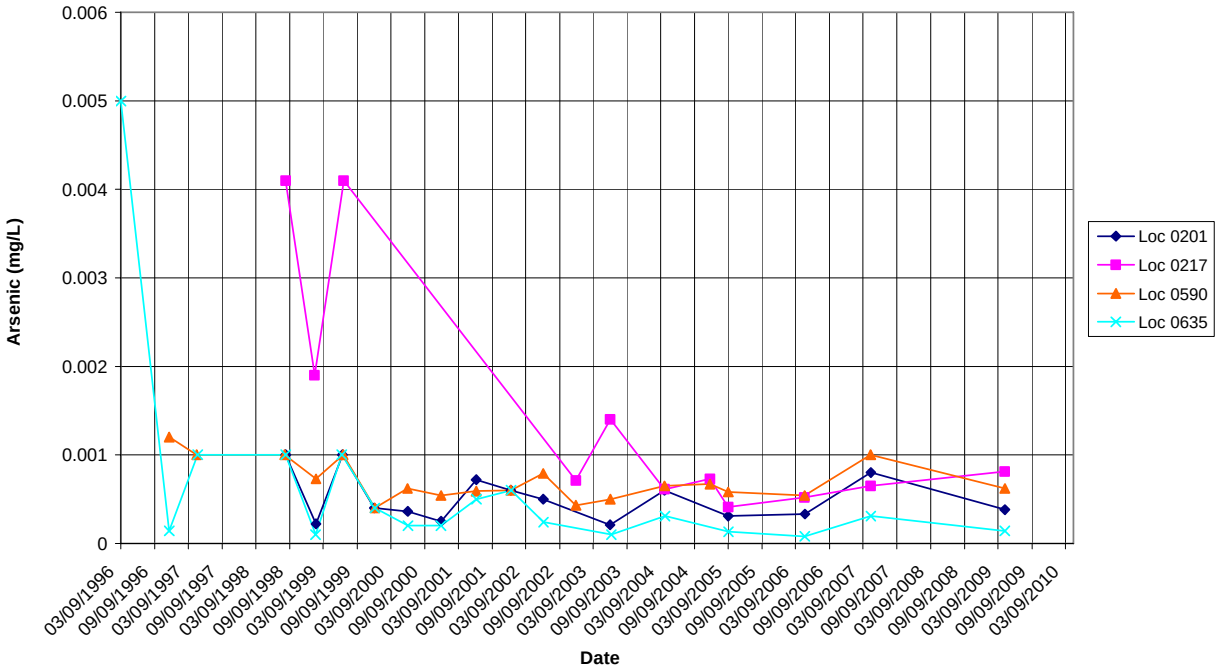
Rifle New Processing Site (RFN01)

Arsenic Concentration



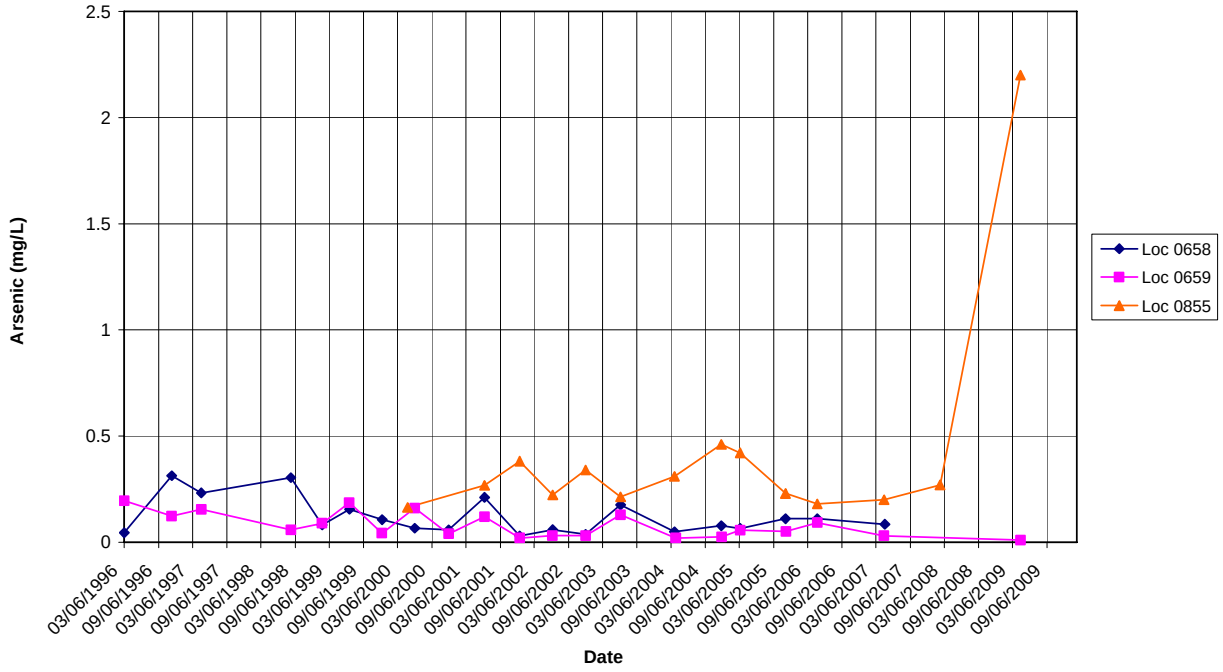
Rifle New Processing Site (RFN01)

Arsenic Concentration



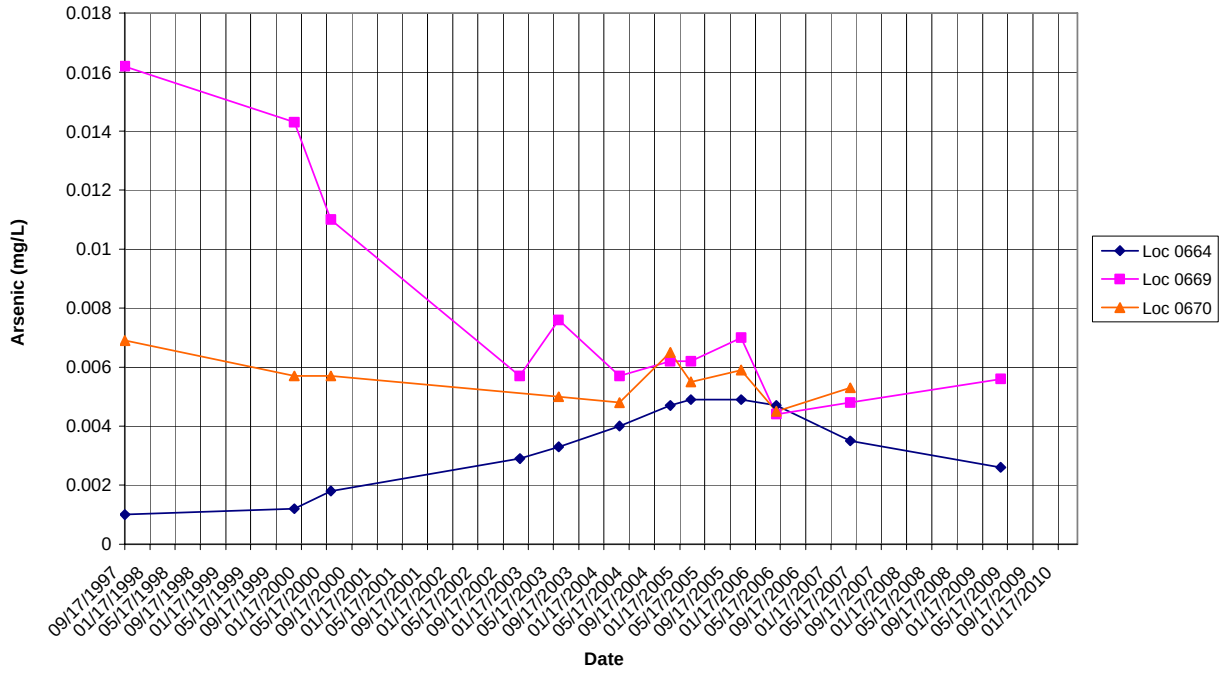
Rifle New Processing Site (RFN01)

Arsenic Concentration



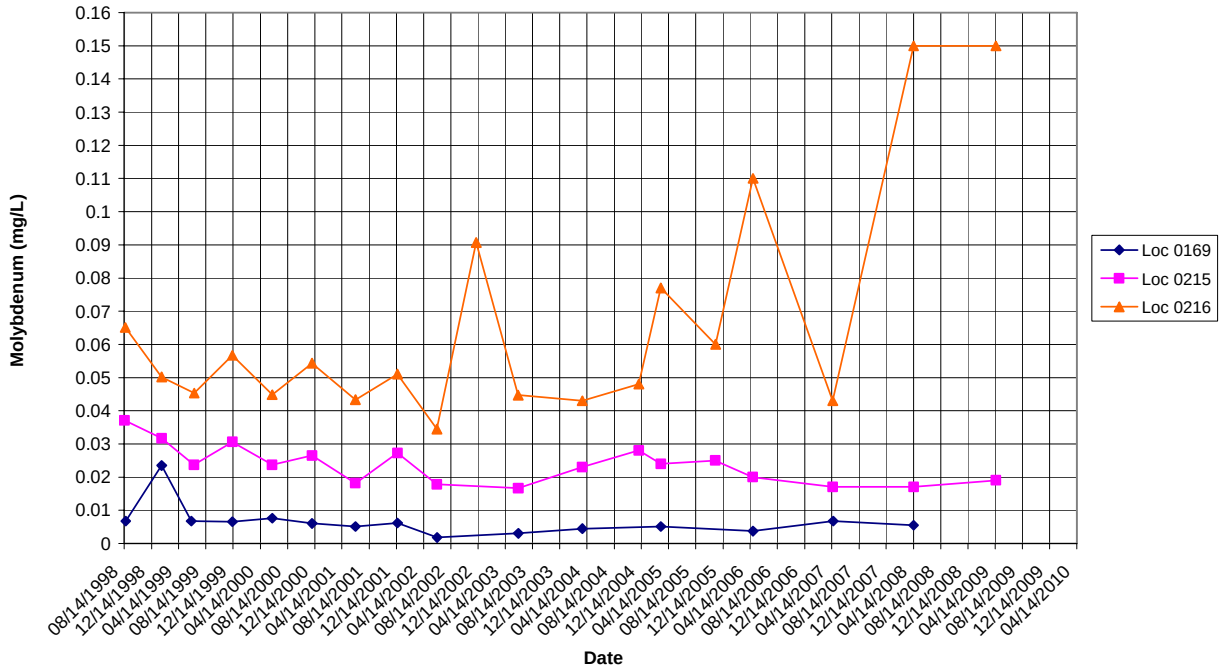
Rifle New Processing Site (RFN01)

Arsenic Concentration



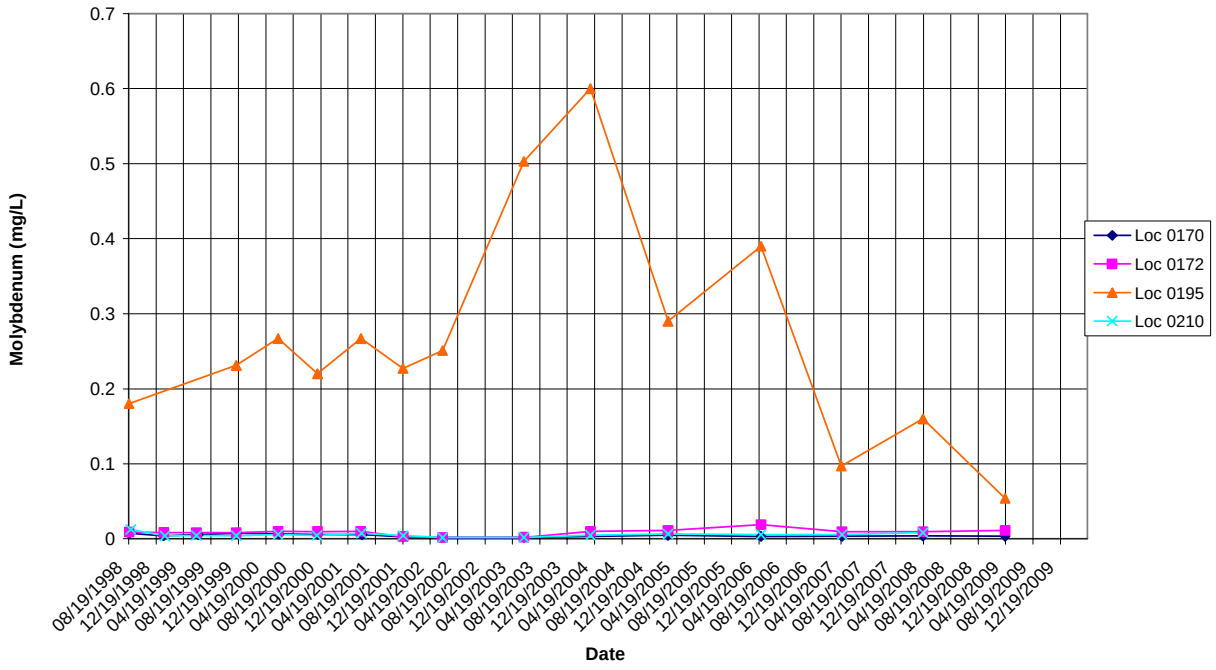
Rifle New Processing Site (RFN01)

Molybdenum Concentration



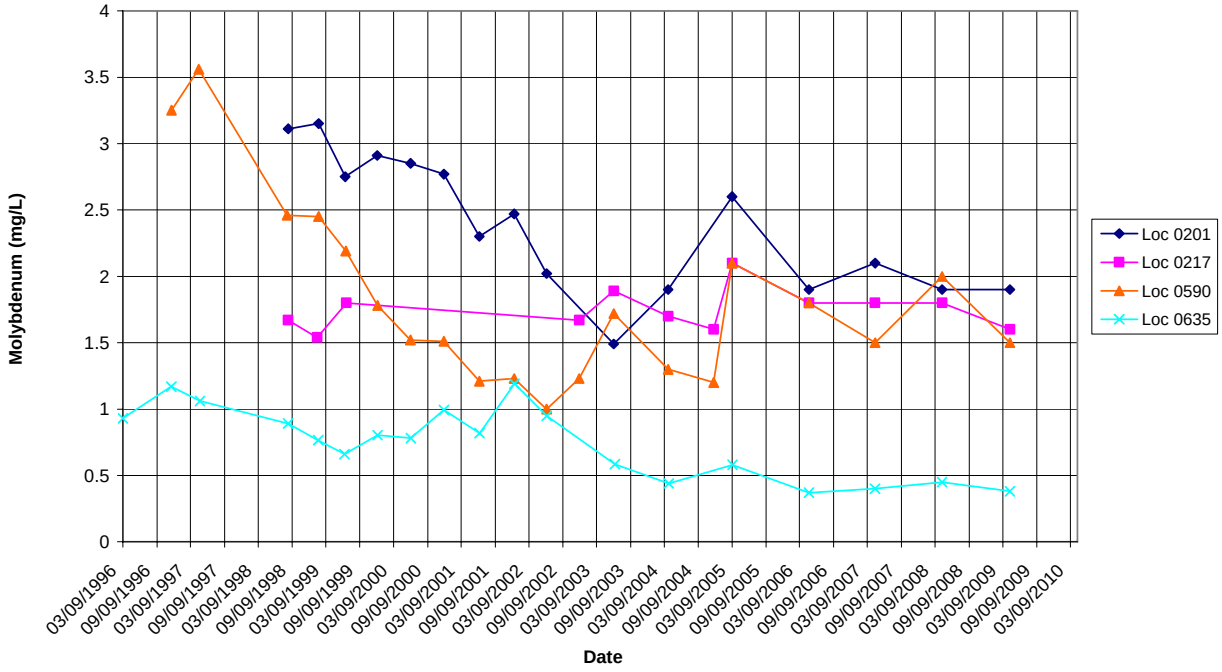
Rifle New Processing Site (RFN01)

Molybdenum Concentration



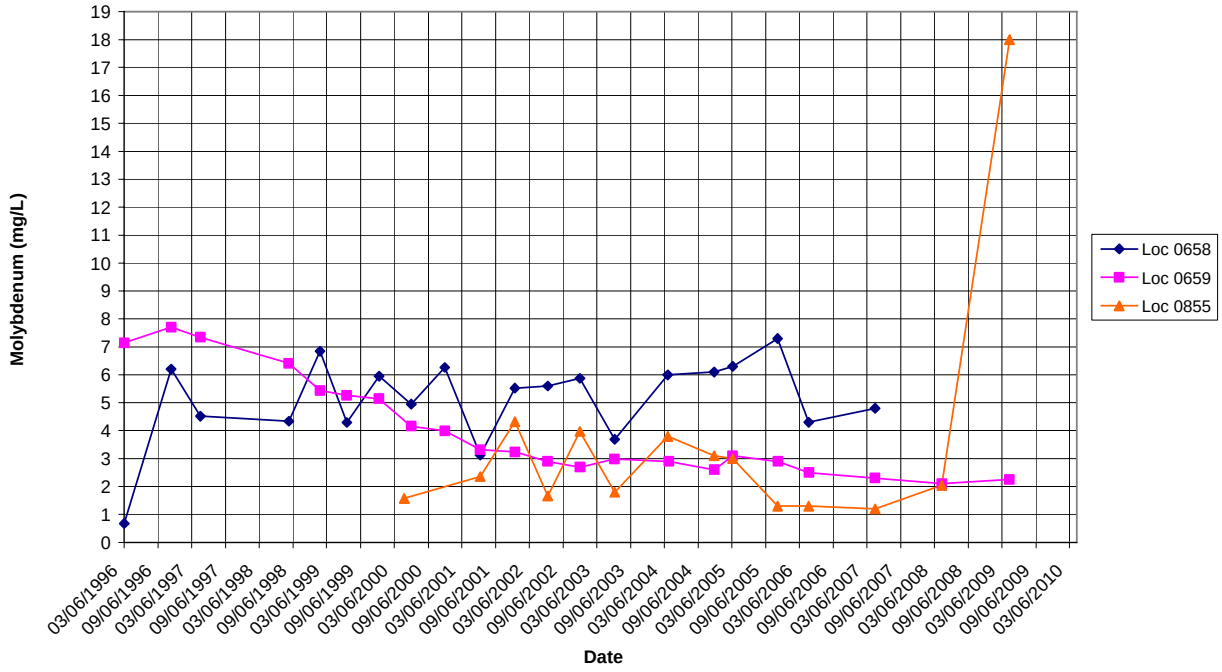
Rifle New Processing Site (RFN01)

Molybdenum Concentration



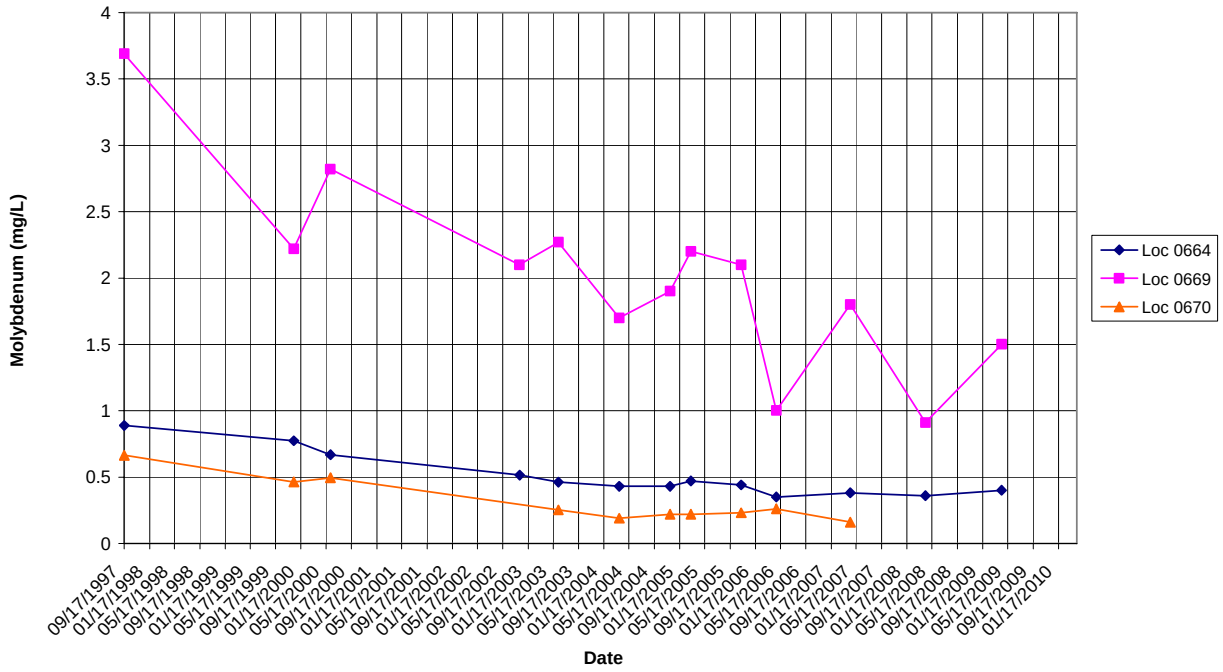
Rifle New Processing Site (RFN01)

Molybdenum Concentration



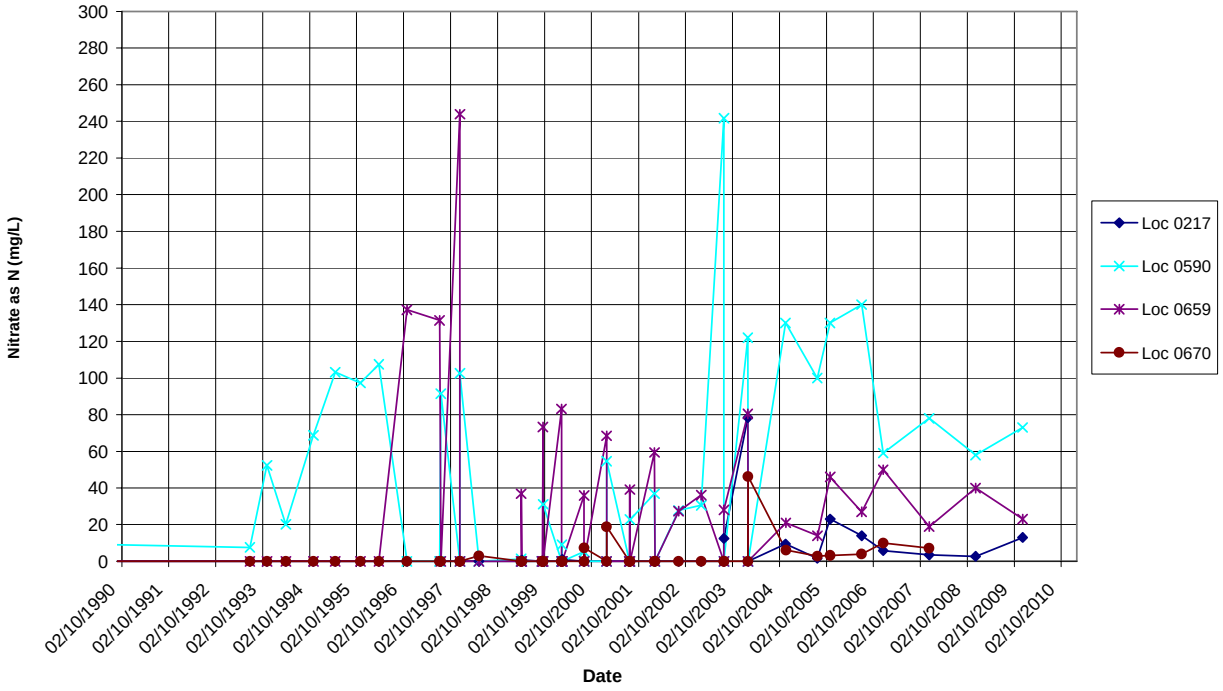
Rifle New Processing Site (RFN01)

Molybdenum Concentration



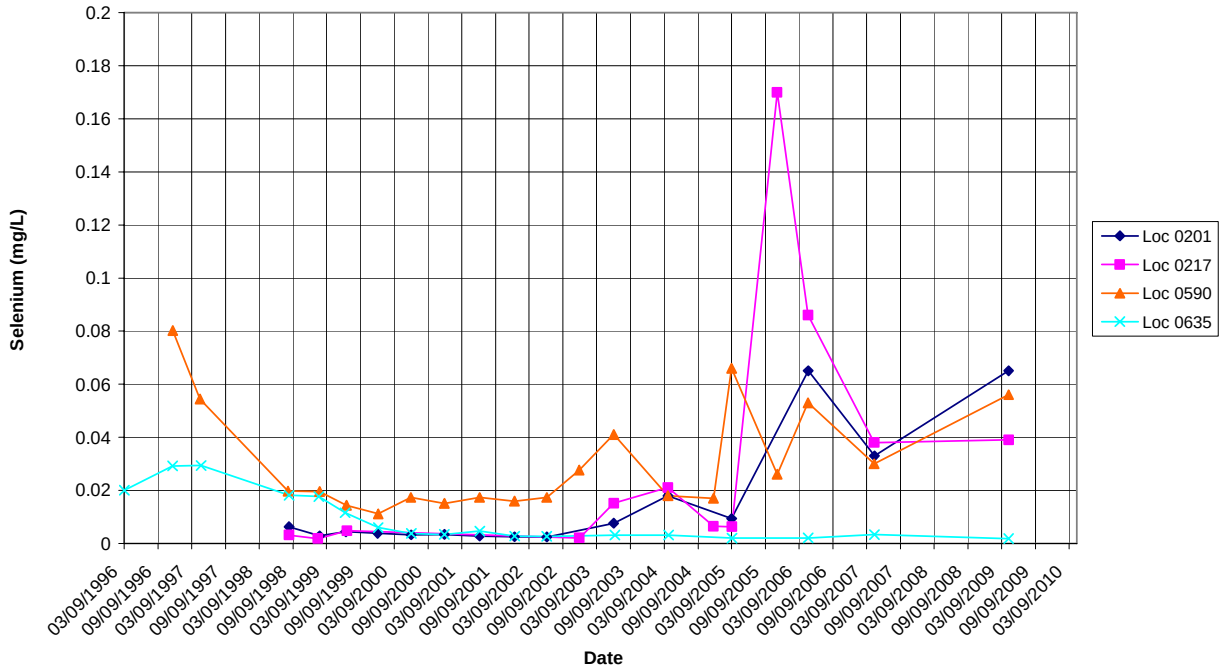
Rifle New Processing Site (RFN01)

Nitrate as N Concentration



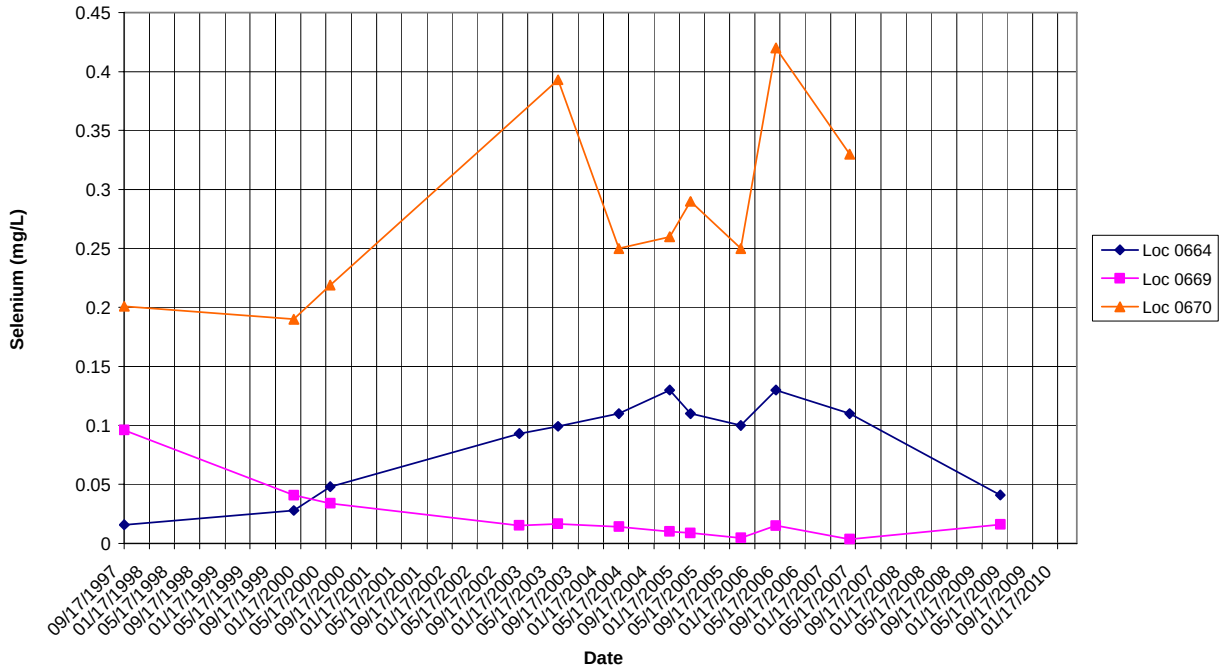
Rifle New Processing Site (RFN01)

Selenium Concentration



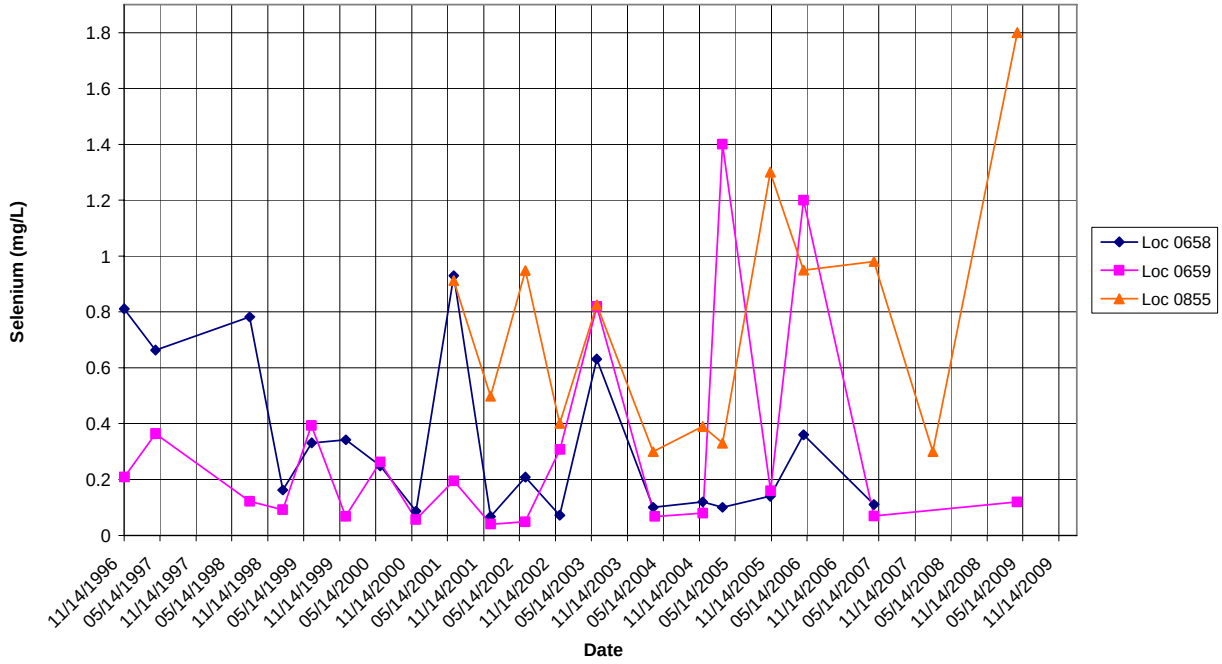
Rifle New Processing Site (RFN01)

Selenium Concentration



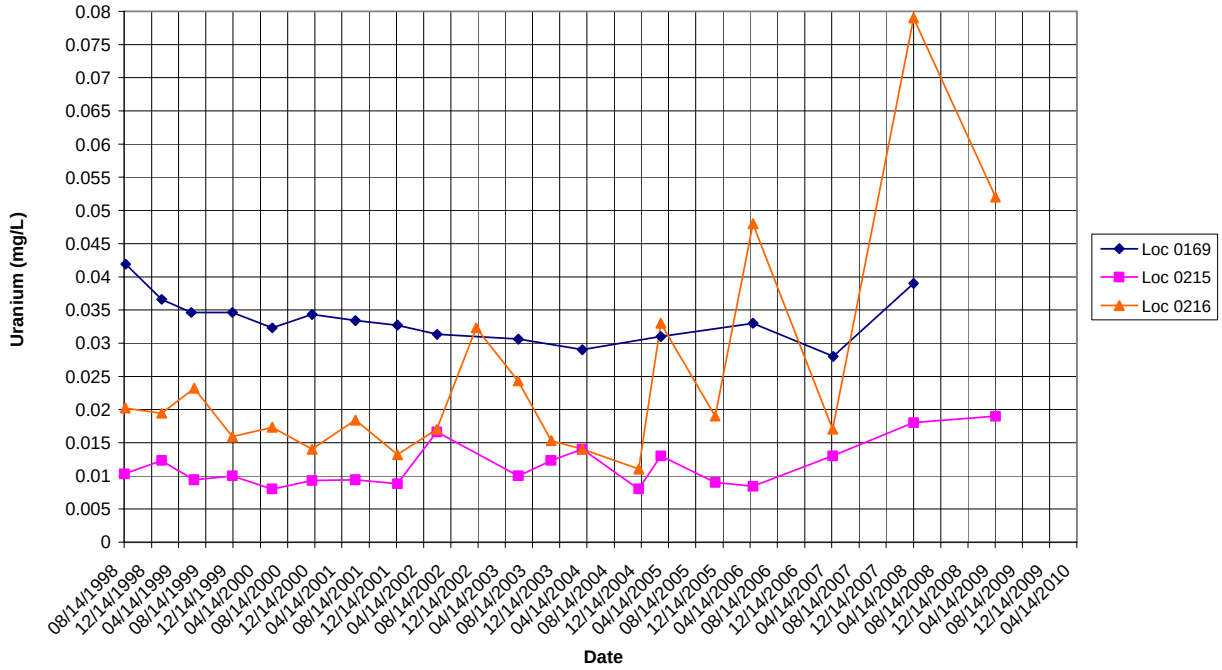
Rifle New Processing Site (RFN01)

Selenium Concentration



Rifle New Processing Site (RFN01)

Uranium Concentration



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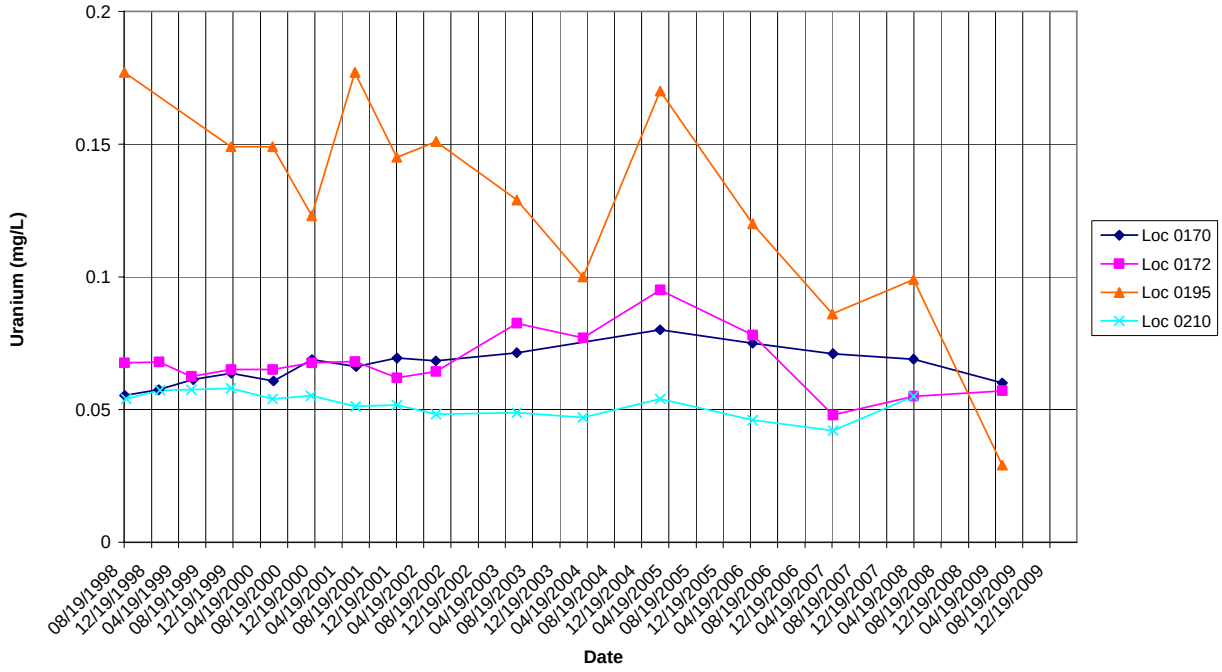
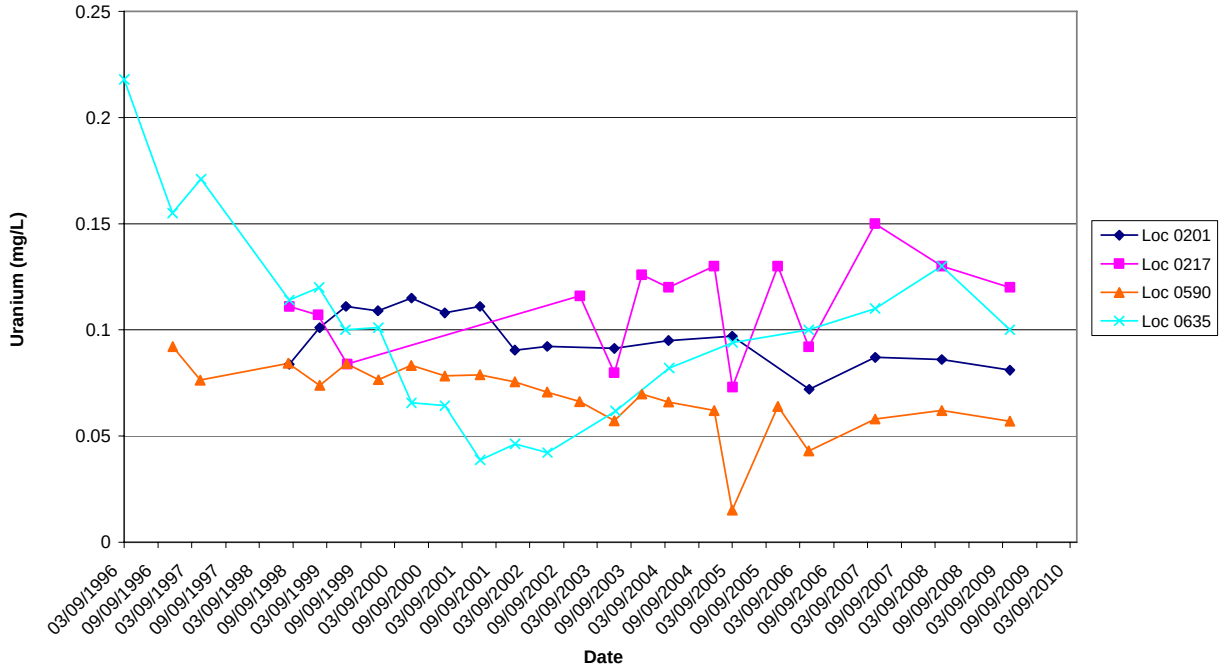
Uranium Concentration



Rifle New Processing Site (RFN01)

Uranium Concentration



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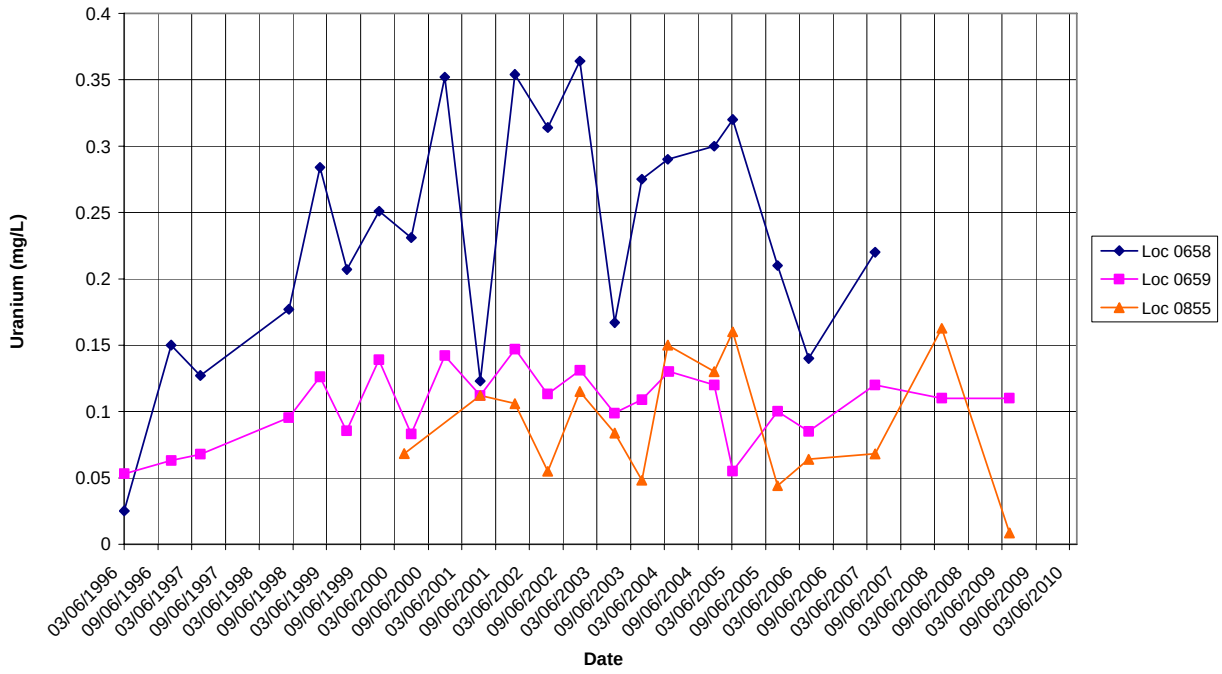
Uranium Concentration



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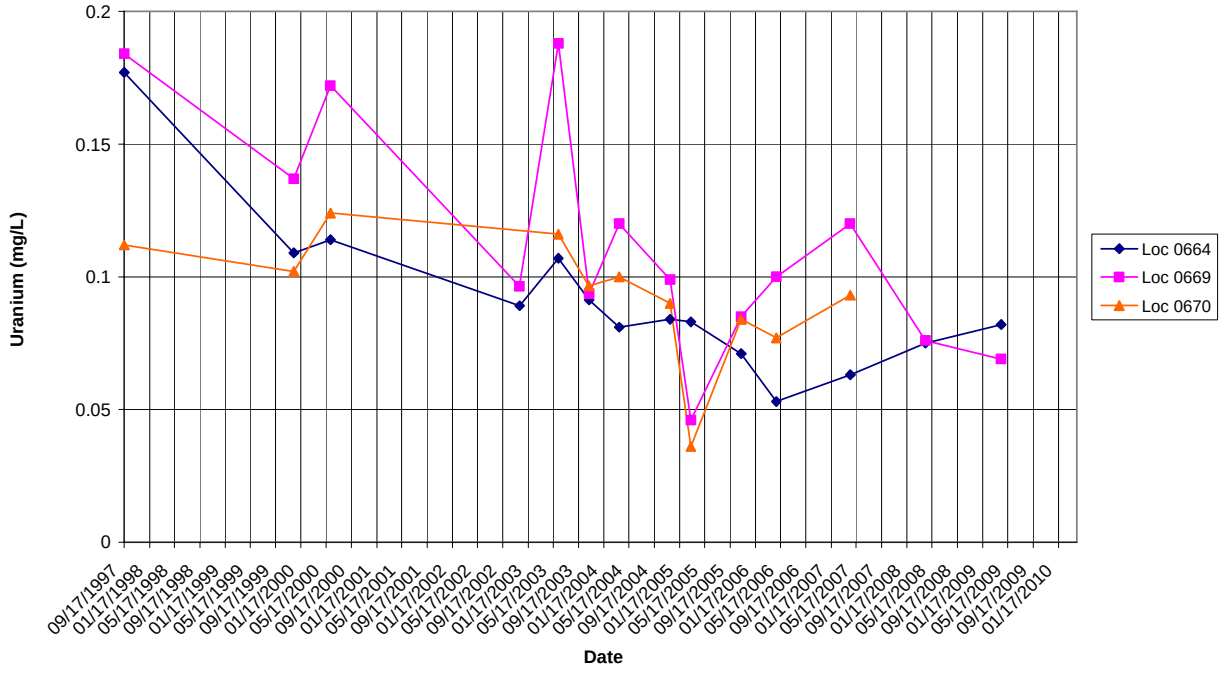
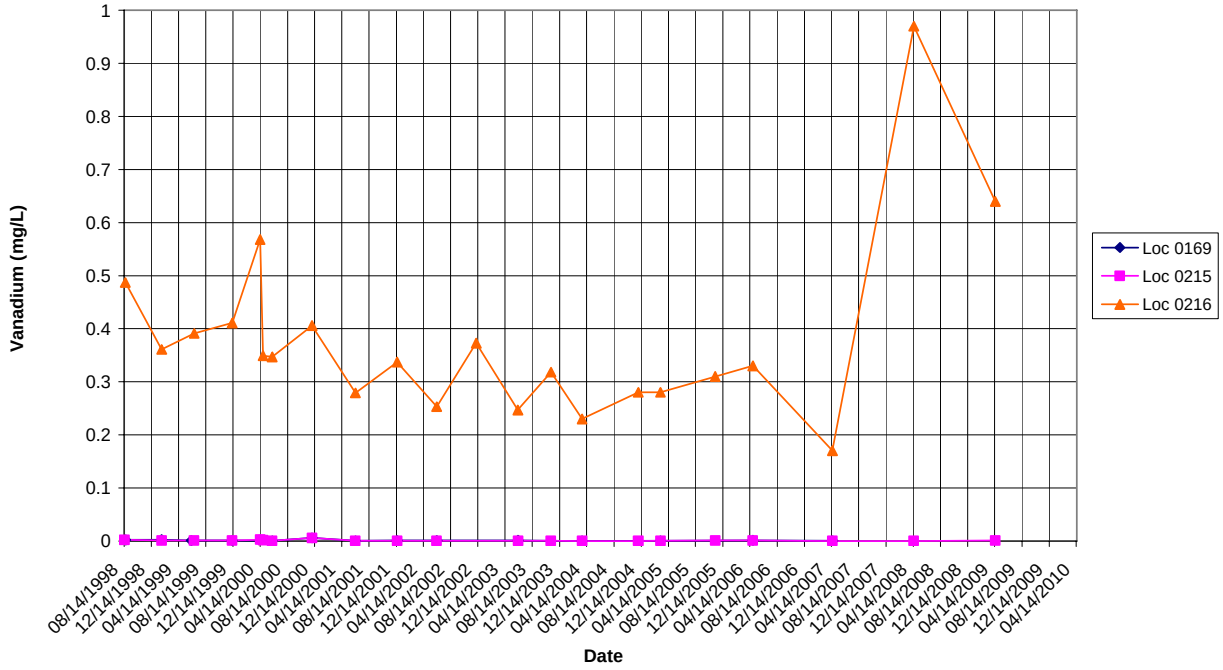


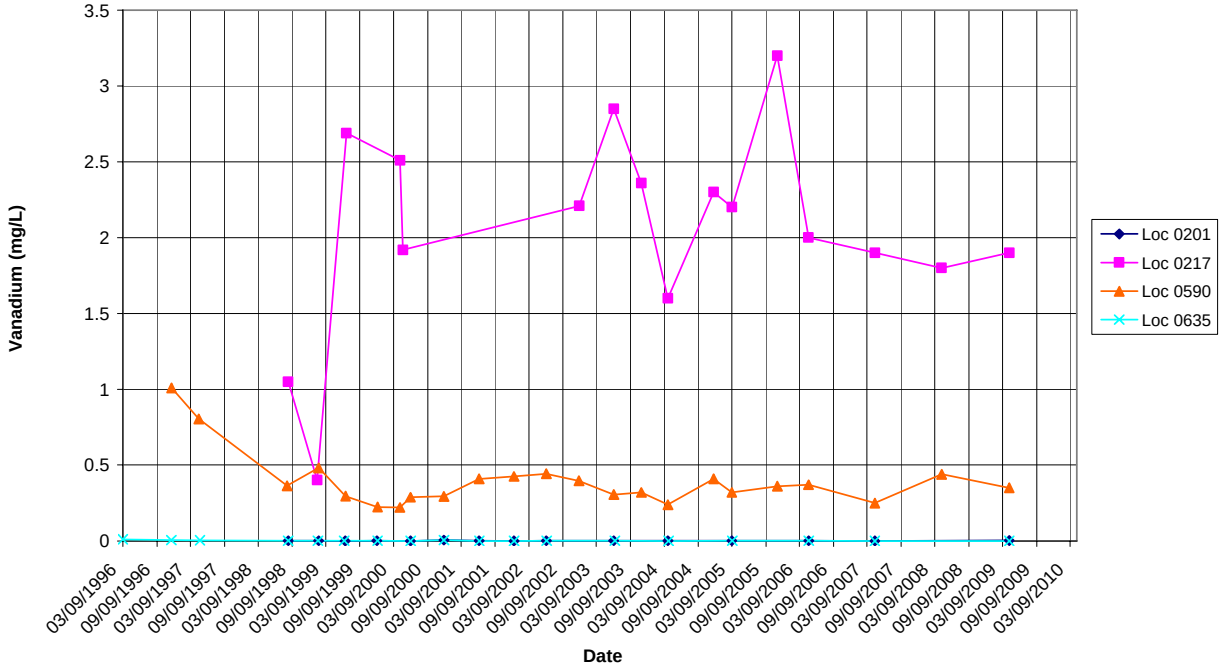
Rifle New Processing Site (RFN01)

Vanadium Concentration



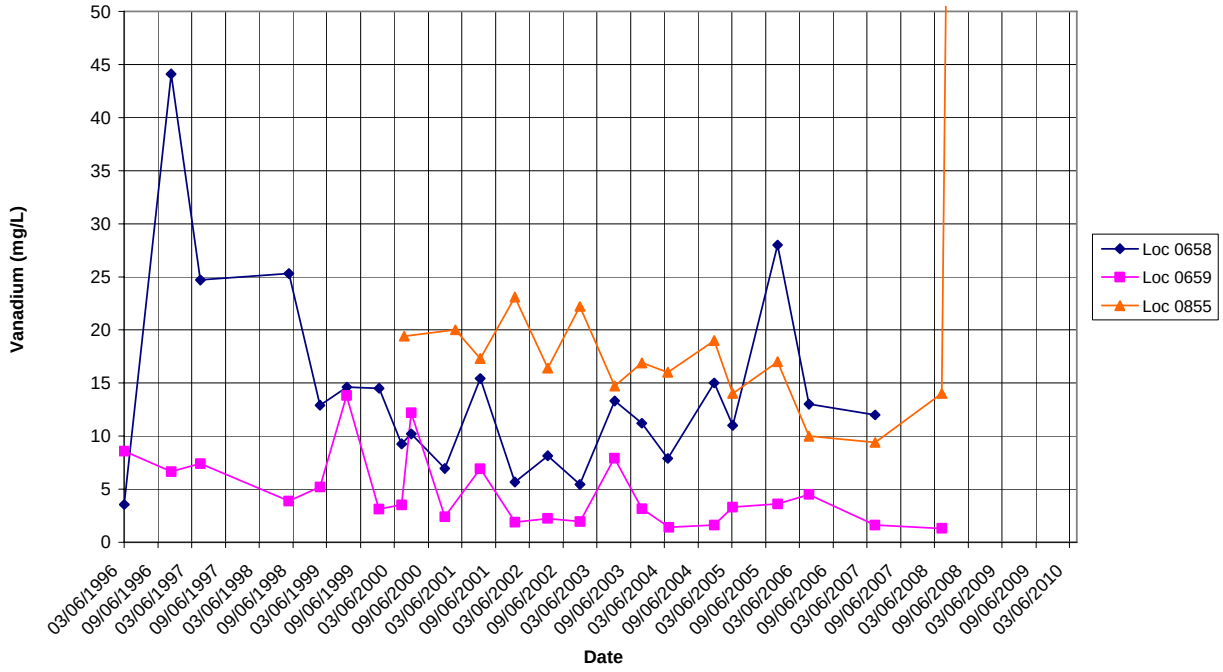
Rifle New Processing Site (RFN01)

Vanadium Concentration



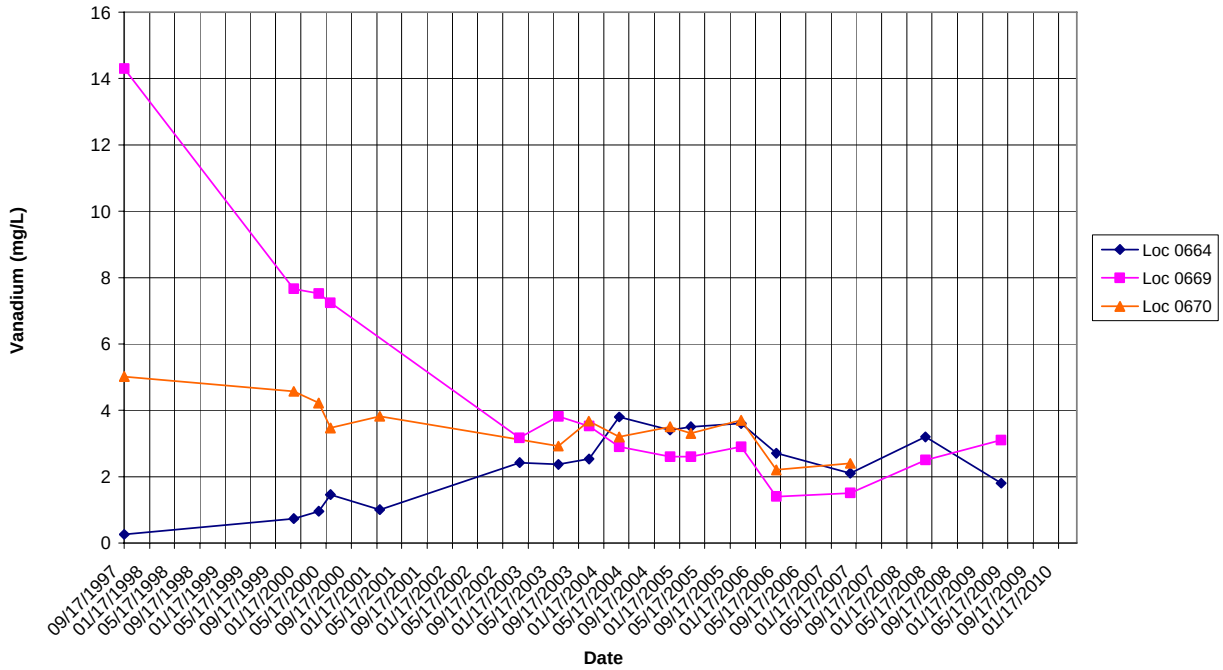
Rifle New Processing Site (RFN01)

Vanadium Concentration



Rifle New Processing Site (RFN01)

Vanadium Concentration



Appendix B

Application of Mann-Kendall Test to New Rifle Monitoring Data

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The Visual Sample Plan (VSP) computer module used for the trend analysis is the nonparametric Mann-Kendall test for trend (Gilbert 1987). In this procedure missing values are allowed and the data need not conform to any particular distribution. In this Mann-Kendall test only the relative magnitudes of the data are used rather than the measured values.

A one-tailed test is used because it is desired to test the null hypothesis, H_O, of no trend against the alternative hypothesis, H_A, of a downward trend. If no trend is detected, then it is desired to test the null hypothesis, H_O, of no trend against the alternative hypothesis, H_A, of an upward trend.

Alpha (α) is often called the level of significance. It is also referred to as a Type I error. For α = .05, this would be a 5 percent probability of rejecting the null hypothesis when the null hypothesis is true, i.e., there is a 5 percent probability of concluding there is a trend when no trend is present. In table format the Type I and Type II errors can be expressed as shown in Table B−1.

Table B−1. Type I and Type II Errors

	Hypothesis is correct	**Hypothesis is incorrect**
Hypothesis is accepted	Correct decision	Type II error (β)
Hypothesis is rejected	Type I error (α)	Correct decision

Table A18 (Gilbert 1987) gives probability values only for n less than or equal 10. An extension of this table up to n = 40 is given in Table A.21 in Hollander and Wolfe (1973) and has been incorporated within VSP.

The VSP module was used to analyze monitoring data collected from four wells at the New Rifle site. Results are based on data collected since surface remediation was completed (1998 time frame). Data for both uranium and molybdenum were used in the analysis. Results are summarized in Table B−2. Molybdenum did not show a trend, either downward or upward, and any of the alpha significance levels.

Table B−2. Summary of Mann-Kendall Test Results for Selected Wells at the New Rifle Site

Location	**Uranium Trend**	**Alpha**	**Molybdenum Trend**	**Alpha**
RFN-0195	down	5%	None	5%, 10%, or 15%
RFN-0201	down	5%	down	5%
RFN-0664	down	5%	down	5%
RFN-0669	down	5%	down	5%

References:

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

Hollander, M., and D.A. Wolfe, 1973. *Nonparametric Statistical Methods*, Wiley, New York.

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Appendix C

Groundwater and Surface Water Monitoring Results for 2009

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GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	492		F	#	-	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	952		F	#	-	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	430		F	#	-	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	262		F	#	-	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	189		F	#	-	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	203		F	#	-	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	199		F	#	-	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	332		F	#	-	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	548		F	#	-	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	337		F	#	-	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	190		F	#	-	-
	mg/L	0664	WL	04/15/2009	0001	7.70 - 14.70	529		FQ	#	-	-
	mg/L	0669	WL	04/15/2009	0001	4.00 - 10.60	274		FQ	#	-	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	331		F	#	-	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	330		FQ	#	-	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	973		F	#	-	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	490		F	#	-	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	445		F	#	-	-
	mg/L	CW31	WL	04/17/2009	N001		160		F	#	-	-
	mg/L	CW32	WL	04/16/2009	0001		388		FQ	#	-	-
	mg/L	CW33	WL	04/17/2009	N001		187		F	#	-	-
	mg/L	CW34	WL	04/17/2009	N001		178		F	#	-	-
	mg/L	CW35	WL	04/17/2009	N001		156		F	#	-	-
Ammonia Total as N	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	0.11	N	JF	#	0.1	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	0.1	U	F	#	0.1	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	1.6		F	#	0.1	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	93		F	#	5	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	3.2		F	#	0.1	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	8.7		F	#	0.5	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	61		F	#	5	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	170		F	#	10	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	0.1	U	F	#	0.1	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	120		F	#	5	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	51		F	#	5	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	53		F	#	5	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	34		FQ	#	5	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	85		FQ	#	5	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	17		F	#	2	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	78		FQ	#	5	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	50		F	#	5	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	61		F	#	5	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	290		F	#	10	-
	mg/L	CW31	WL	04/17/2009	N001		7.9		F	#	0.5	-
	mg/L	CW32	WL	04/16/2009	0001		4.9		FQ	#	0.1	-
	mg/L	CW33	WL	04/17/2009	N001		12		F	#	0.5	-
	mg/L	CW33	WL	04/17/2009	N002		12		F	#	0.5	-
	mg/L	CW34	WL	04/17/2009	N001		9.6		F	#	0.5	-
	mg/L	CW35	WL	04/17/2009	N001		5.1		F	#	0.5	-
Arsenic	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	0.0002		F	#	0.00001	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	0.0053		F	#	0.00001	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	0.0014		F	#	0.00001	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	0.00038		F	#	0.00001	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Arsenic	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	0.00027		F	#	0.00001	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	0.041		F	#	0.0001	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	0.00081		F	#	0.00001	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	0.00062		F	#	0.00001	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	0.00044		F	#	0.00001	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	0.00014		UF	#	0.00001	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	0.0093		F	#	0.0001	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	0.0095		F	#	0.0001	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	0.0026		FQ	#	5.2E-05	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	0.0056		FQ	#	5.2E-05	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	0.0027		F	#	0.00001	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	2.200		FQ	#	0.0021	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	0.023		F	#	0.00052	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	0.088		F	#	0.00052	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	0.0027		F	#	0.00001	-
	mg/L	CW31	WL	04/17/2009	N001		0.120		F	#	0.00052	-
	mg/L	CW32	WL	04/16/2009	0001		0.140		FQ	#	0.00052	-
	mg/L	CW33	WL	04/17/2009	N001		0.280		F	#	0.00052	-
	mg/L	CW33	WL	04/17/2009	N002		0.280		F	#	0.00052	-
	mg/L	CW34	WL	04/17/2009	N001		0.047		F	#	0.00052	-
	mg/L	CW35	WL	04/17/2009	N001		0.027		F	#	0.00021	-
Calcium	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	160.000		F	#	0.0031	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	460.000		F	#	0.0031	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	100.000		F	#	0.0031	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	550.000		F	#	0.031	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	98.000		F	#	0.0031	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Calcium	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	70.000		F	#	0.0031	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	590.000		F	#	0.031	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	520.000		F	#	0.031	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	340.000		F	#	0.0031	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	550.000		F	#	0.031	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	600.000		F	#	0.031	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	600.000		F	#	0.031	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	280.000		FQ	#	0.0031	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	530.000		FQ	#	0.031	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	210.000		F	#	0.0031	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	780.000		FQ	#	0.016	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	230.000		F	#	0.0031	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	340.000		F	#	0.0031	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	490.000		F	#	0.16	-
	mg/L	CW31	WL	04/17/2009	N001		170.000		F	#	0.0031	-
	mg/L	CW32	WL	04/16/2009	0001		200.000		FQ	#	0.0031	-
	mg/L	CW33	WL	04/17/2009	N001		290.000		F	#	0.0031	-
	mg/L	CW33	WL	04/17/2009	N002		300.000		F	#	0.0031	-
	mg/L	CW34	WL	04/17/2009	N001		150.000		F	#	0.0031	-
	mg/L	CW35	WL	04/17/2009	N001		140.000		F	#	0.0031	-
Chloride	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	150		F	#	10	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	2900		F	#	40	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	39		F	#	4	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	150		F	#	10	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	150		F	#	2	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	160		F	#	2	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Chloride	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	240		F	#	10	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	300		F	#	10	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	550		F	#	10	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	240		F	#	10	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	140		F	#	10	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	140		F	#	10	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	70		FQ	#	10	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	120		FQ	#	10	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	95		F	#	4	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	170		FQ	#	10	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	74		F	#	4	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	76		F	#	4	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	180		F	#	10	-
	mg/L	CW31	WL	04/17/2009	N001		99		F	#	4	-
	mg/L	CW32	WL	04/16/2009	0001		110		FQ	#	4	-
	mg/L	CW33	WL	04/17/2009	N001		120		F	#	4	-
	mg/L	CW33	WL	04/17/2009	N002		130		F	#	4	-
	mg/L	CW34	WL	04/17/2009	N001		120		F	#	4	-
	mg/L	CW35	WL	04/17/2009	N001		120		F	#	4	-
Dissolved Oxygen	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	1.67		F	#	-	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	0.03		F	#	-	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	0.10		F	#	-	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	1.88		F	#	-	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	1.07		F	#	-	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	0.85		F	#	-	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	0.25		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Dissolved Oxygen	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	0.27		F	#	-	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	2.17		F	#	-	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	0.22		F	#	-	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	1.33		F	#	-	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	2.53		FQ	#	-	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	4.48		FQ	#	-	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	2.67		F	#	-	-
	mg/L	0855	WL	04/15/2009	N001	6.00 - 11.00	0.72		FQ	#	-	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	0.36		F	#	-	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	0.49		F	#	-	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	0.18		F	#	-	-
	mg/L	CW31	WL	04/17/2009	N001		1.83		F	#	-	-
	mg/L	CW32	WL	04/16/2009	N001		0.76		FQ	#	-	-
	mg/L	CW33	WL	04/17/2009	N001		0.40		F	#	-	-
	mg/L	CW34	WL	04/17/2009	N001		0.49		F	#	-	-
	mg/L	CW35	WL	04/17/2009	N001		1.65		F	#	-	-
Field Ferrous Iron	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	0.03		F	#	-	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	1.81		F	#	-	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	0.35		F	#	-	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	0.01		F	#	-	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	0.01		F	#	-	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	0.01		F	#	-	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	0.01		F	#	-	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	0.01		F	#	-	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	0.08		F	#	-	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	0.08		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Field Ferrous Iron	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	0.01		F	#	-	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	0.01		FQ	#	-	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	0.15		FQ	#	-	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	0.01		F	#	-	-
	mg/L	0855	WL	04/15/2009	N001	6.00 - 11.00	0.01		FQ	#	-	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	0.01		F	#	-	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	0.09		F	#	-	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	0.82		F	#	-	-
	mg/L	CW31	WL	04/17/2009	N001		0.01		F	#	-	-
	mg/L	CW32	WL	04/16/2009	N001		0.10		FQ	#	-	-
	mg/L	CW33	WL	04/17/2009	N001		0.15		F	#	-	-
	mg/L	CW34	WL	04/17/2009	N001		1.07		F	#	-	-
	mg/L	CW35	WL	04/17/2009	N001		0.03		F	#	-	-
Iron	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	0.047	B	F	#	0.0013	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	7.200		F	#	0.0013	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	1.400		F	#	0.0013	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	0.014	B	F	#	0.0013	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	0.025	B	F	#	0.0013	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	0.260		F	#	0.0013	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	0.044	B	F	#	0.0013	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	0.020	B	F	#	0.0013	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	0.012	B	F	#	0.0013	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	0.041	B	F	#	0.0013	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	0.0013	U	JF	#	0.0013	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	0.120		F	#	0.0013	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	0.0022	B	JFQ	#	0.0013	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Iron	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	0.021	B	FQ	#	0.0013	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	0.058	B	F	#	0.0013	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	0.710		FQ	#	0.0067	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	0.510		F	#	0.0013	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	0.160		F	#	0.0013	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	0.320		F	#	0.0013	-
	mg/L	CW31	WL	04/17/2009	N001		0.0067	B	F	#	0.0013	-
	mg/L	CW32	WL	04/16/2009	0001		0.076	B	FQ	#	0.0013	-
	mg/L	CW33	WL	04/17/2009	N001		0.011	B	F	#	0.0013	-
	mg/L	CW33	WL	04/17/2009	N002		0.012	B	F	#	0.0013	-
	mg/L	CW34	WL	04/17/2009	N001		1.300		F	#	0.0013	-
	mg/L	CW35	WL	04/17/2009	N001		0.019	B	F	#	0.0013	-
Magnesium	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	99.000		F	#	0.0075	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	710.000		F	#	0.38	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	48.000		F	#	0.0075	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	62.000		F	#	0.0075	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	42.000		F	#	0.0075	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	20.000		F	#	0.0075	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	20.000		F	#	0.0075	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	54.000		F	#	0.0075	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	210.000		F	#	0.0075	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	33.000		F	#	0.0075	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	19.000		F	#	0.0075	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	19.000		F	#	0.0075	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	68.000		FQ	#	0.0075	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	41.000		FQ	#	0.0075	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Magnesium	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	56.000		F	#	0.0075	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	25.000		FQ	#	0.038	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	54.000		F	#	0.0075	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	26.000		F	#	0.0075	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	35.000		F	#	0.0075	-
	mg/L	CW31	WL	04/17/2009	N001		37.000		F	#	0.0075	-
	mg/L	CW32	WL	04/16/2009	0001		28.000		FQ	#	0.0075	-
	mg/L	CW33	WL	04/17/2009	N001		25.000		F	#	0.0075	-
	mg/L	CW33	WL	04/17/2009	N002		26.000		F	#	0.0075	-
	mg/L	CW34	WL	04/17/2009	N001		25.000		F	#	0.0075	-
	mg/L	CW35	WL	04/17/2009	N001		30.000		F	#	0.0075	-
Manganese	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	0.028	E	F	#	0.00012	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	1.100		F	#	0.00012	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	0.560		F	#	0.00012	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	3.200		F	#	0.00012	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	0.650		F	#	0.00012	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	0.700		F	#	0.00012	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	5.300		F	#	0.00012	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	11.000		F	#	0.0012	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	1.000		F	#	0.00012	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	6.200		F	#	0.00012	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	2.400		F	#	0.00012	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	2.400		F	#	0.00012	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	1.700		FQ	#	0.00012	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	2.600		FQ	#	0.00012	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	2.100		F	#	0.00012	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Manganese	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	1.700		FQ	#	0.00058	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	2.600		F	#	0.00012	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	2.100		F	#	0.00012	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	3.600		F	#	0.00012	-
	mg/L	CW31	WL	04/17/2009	N001		1.200		F	#	0.00012	-
	mg/L	CW32	WL	04/16/2009	0001		1.200		FQ	#	0.00012	-
	mg/L	CW33	WL	04/17/2009	N001		1.200		F	#	0.00012	-
	mg/L	CW33	WL	04/17/2009	N002		1.200		F	#	0.00012	-
	mg/L	CW34	WL	04/17/2009	N001		1.300		F	#	0.00012	-
	mg/L	CW35	WL	04/17/2009	N001		1.100		F	#	0.00012	-
Molybdenum	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	0.0036	E	JF	#	0.00007	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	0.011		JF	#	0.00007	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	0.054		JF	#	0.00007	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	1.900		JF	#	0.0014	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	0.019		JF	#	0.00007	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	0.150		JF	#	0.00014	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	1.600		JF	#	0.0014	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	1.500		JF	#	0.0014	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	0.0099		JF	#	0.00007	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	0.380		JF	#	0.00035	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	2.200		F	#	0.0035	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	2.300		JF	#	0.0035	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	0.400		JFQ	#	0.00035	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	1.500		JFQ	#	0.0014	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	0.100		F	#	0.00014	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	18.000		FQ	#	0.035	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	0.170		F	#	0.00014	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	0.510		F	#	0.0007	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	1.600		F	#	0.0035	-
	mg/L	CW31	WL	04/17/2009	N001		0.510		F	#	0.0007	-
	mg/L	CW32	WL	04/16/2009	0001		0.480		FQ	#	0.0007	-
	mg/L	CW33	WL	04/17/2009	N001		0.590		F	#	0.0007	-
	mg/L	CW33	WL	04/17/2009	N002		0.570		F	#	0.0007	-
	mg/L	CW34	WL	04/17/2009	N001		0.360		F	#	0.00035	-
	mg/L	CW35	WL	04/17/2009	N001		0.240		F	#	0.00035	-
Nitrate + Nitrite as Nitrogen	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	22		F	#	0.5	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	0.018		F	#	0.01	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	0.01	U	F	#	0.01	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	61		F	#	0.5	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	0.047		F	#	0.01	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	0.77		F	#	0.01	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	13		F	#	0.1	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	73		F	#	0.5	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	35		F	#	0.2	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	31		F	#	0.2	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	23		F	#	0.2	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	22		F	#	0.2	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	19		FQ	#	0.1	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	13		FQ	#	0.1	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	40		F	#	0.2	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	17		FQ	#	0.2	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	15		F	#	0.1	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Nitrate + Nitrite as Nitrogen	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	2		F	#	0.02	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	0.056		F	#	0.01	-
	mg/L	CW31	WL	04/17/2009	N001		16		F	#	0.1	-
	mg/L	CW32	WL	04/16/2009	0001		9.3		FQ	#	0.05	-
	mg/L	CW33	WL	04/17/2009	N001		5		F	#	0.05	-
	mg/L	CW33	WL	04/17/2009	N002		5		F	#	0.05	-
	mg/L	CW34	WL	04/17/2009	N001		3		F	#	0.05	-
	mg/L	CW35	WL	04/17/2009	N001		12		F	#	0.1	-
Oxidation Reduction Potent	mV	0170	WL	04/17/2009	N001	92.23 - 112.23	53.2		F	#	-	-
	mV	0172	WL	04/17/2009	N001	6.98 - 31.98	-99.0		F	#	-	-
	mV	0195	WL	04/16/2009	N001	5.29 - 25.29	14.4		F	#	-	-
	mV	0201	WL	04/16/2009	N001	7.35 - 22.35	191.3		F	#	-	-
	mV	0215	WL	04/16/2009	N001	6.84 - 21.84	22.2		F	#	-	-
	mV	0216	WL	04/16/2009	N001	5.50 - 20.50	96.1		F	#	-	-
	mV	0217	WL	04/15/2009	N001	7.40 - 22.40	146		F	#	-	-
	mV	0590	WL	04/15/2009	N001	5.21 - 19.21	161		F	#	-	-
	mV	0620	WL	04/17/2009	N001	6.70 - 10.70	76.3		F	#	-	-
	mV	0635	WL	04/16/2009	N001	12.00 - 17.00	117.7		F	#	-	-
	mV	0659	WL	04/15/2009	N001	0.50 - 10.50	150		F	#	-	-
	mV	0664	WL	04/15/2009	N001	7.70 - 14.70	143		FQ	#	-	-
	mV	0669	WL	04/15/2009	N001	4.00 - 10.60	81		FQ	#	-	-
	mV	0687	WL	04/16/2009	N001	9.70 - 14.70	101.1		F	#	-	-
	mV	0855	WL	04/15/2009	N001	6.00 - 11.00	190		FQ	#	-	-
	mV	0856	WL	04/15/2009	N001	12.00 - 16.00	210		F	#	-	-
	mV	0857	WL	04/15/2009	N001	19.00 - 23.00	35		F	#	-	-
	mV	0863	WL	04/15/2009	N001	10.50 - 25.50	28		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	CW31	WL	04/17/2009	N001		289.7		F	#	-	-
	mV	CW32	WL	04/16/2009	N001		69.0		FQ	#	-	-
	mV	CW33	WL	04/17/2009	N001		282.4		F	#	-	-
	mV	CW34	WL	04/17/2009	N001		-69.3		F	#	-	-
	mV	CW35	WL	04/17/2009	N001		3.7		F	#	-	-
pH	s.u.	0170	WL	04/17/2009	N001	92.23 - 112.23	7.18		F	#	-	-
	s.u.	0172	WL	04/17/2009	N001	6.98 - 31.98	7.11		F	#	-	-
	s.u.	0195	WL	04/16/2009	N001	5.29 - 25.29	7.29		F	#	-	-
	s.u.	0201	WL	04/16/2009	N001	7.35 - 22.35	7.00		F	#	-	-
	s.u.	0215	WL	04/16/2009	N001	6.84 - 21.84	7.65		F	#	-	-
	s.u.	0216	WL	04/16/2009	N001	5.50 - 20.50	7.69		F	#	-	-
	s.u.	0217	WL	04/15/2009	N001	7.40 - 22.40	6.97		F	#	-	-
	s.u.	0590	WL	04/15/2009	N001	5.21 - 19.21	6.84		F	#	-	-
	s.u.	0620	WL	04/17/2009	N001	6.70 - 10.70	7.45		F	#	-	-
	s.u.	0635	WL	04/16/2009	N001	12.00 - 17.00	6.94		F	#	-	-
	s.u.	0659	WL	04/15/2009	N001	0.50 - 10.50	7.14		F	#	-	-
	s.u.	0664	WL	04/15/2009	N001	7.70 - 14.70	7.04		FQ	#	-	-
	s.u.	0669	WL	04/15/2009	N001	4.00 - 10.60	6.92		FQ	#	-	-
	s.u.	0687	WL	04/16/2009	N001	9.70 - 14.70	7.11		F	#	-	-
	s.u.	0855	WL	04/15/2009	N001	6.00 - 11.00	6.41		FQ	#	-	-
	s.u.	0856	WL	04/15/2009	N001	12.00 - 16.00	7.12		F	#	-	-
	s.u.	0857	WL	04/15/2009	N001	19.00 - 23.00	7.25		F	#	-	-
	s.u.	0863	WL	04/15/2009	N001	10.50 - 25.50	7.01		F	#	-	-
	s.u.	CW31	WL	04/17/2009	N001		7.25		F	#	-	-
	s.u.	CW32	WL	04/16/2009	N001		7.29		FQ	#	-	-
	s.u.	CW33	WL	04/17/2009	N001		7.27		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	CW34	WL	04/17/2009	N001		7.41		F	#	-	-
	s.u.	CW35	WL	04/17/2009	N001		7.52		F	#	-	-
Potassium	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	8.600	EN	JF	#	0.11	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	31.000		JF	#	0.11	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	11.000		JF	#	0.11	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	19.000		JF	#	0.11	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	5.700		JF	#	0.11	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	8.900		JF	#	0.11	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	22.000		JF	#	0.11	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	28.000		JF	#	0.11	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	13.000		JF	#	0.11	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	56.000		JF	#	0.11	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	13.000		JF	#	0.11	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	13.000		JF	#	0.11	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	14.000		JFQ	#	0.11	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	13.000		JFQ	#	0.11	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	20.000	E	JF	#	0.11	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	8.600		JFQ	#	0.54	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	19.000		JF	#	0.11	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	17.000		JF	#	0.11	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	21.000		JF	#	0.11	-
	mg/L	CW31	WL	04/17/2009	N001		7.600		JF	#	0.11	-
	mg/L	CW32	WL	04/16/2009	0001		6.800		JFQ	#	0.11	-
	mg/L	CW33	WL	04/17/2009	N001		8.800		JF	#	0.11	-
	mg/L	CW33	WL	04/17/2009	N002		8.900		JF	#	0.11	-
	mg/L	CW34	WL	04/17/2009	N001		8.900		JF	#	0.11	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Potassium	mg/L	CW35	WL	04/17/2009	N001		7.200		JF	#	0.11	-
Selenium	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	0.0058		F	#	1.8E-05	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	0.00031		F	#	1.8E-05	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	0.00017		UF	#	1.8E-05	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	0.065		F	#	0.00018	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	0.0018		F	#	1.8E-05	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	0.045		F	#	0.00018	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	0.039		F	#	9.1E-05	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	0.056		F	#	0.00018	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	0.011		F	#	1.8E-05	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	0.0018		F	#	1.8E-05	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	0.120		F	#	0.00018	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	0.120		F	#	0.00018	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	0.041		FQ	#	9.1E-05	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	0.016		FQ	#	9.1E-05	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	0.300		F	#	0.00091	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	1.800		FQ	#	0.0036	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	0.530		F	#	0.00091	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	0.320		F	#	0.00091	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	0.0019		F	#	1.8E-05	-
	mg/L	CW31	WL	04/17/2009	N001		0.420		F	#	0.00091	-
	mg/L	CW32	WL	04/16/2009	0001		0.520		FQ	#	0.00091	-
	mg/L	CW33	WL	04/17/2009	N001		0.230		F	#	0.00091	-
	mg/L	CW33	WL	04/17/2009	N002		0.220		F	#	0.00091	-
	mg/L	CW34	WL	04/17/2009	N001		0.290		F	#	0.00091	-
	mg/L	CW35	WL	04/17/2009	N001		0.160		F	#	0.00036	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Sodium	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	460.000		F	#	0.047	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	3500.000		F	#	0.23	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	130.000		F	#	0.0047	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	360.000		F	#	0.047	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	89.000		F	#	0.0047	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	130.000		F	#	0.0047	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	180.000		F	#	0.0047	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	420.000		F	#	0.047	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	770.000		F	#	0.23	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	270.000		F	#	0.047	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	150.000		F	#	0.0047	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	150.000		F	#	0.0047	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	210.000		FQ	#	0.0047	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	220.000		FQ	#	0.0047	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	140.000		F	#	0.0047	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	160.000		FQ	#	0.023	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	190.000		F	#	0.0047	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	170.000		F	#	0.0047	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	390.000		F	#	0.23	-
	mg/L	CW31	WL	04/17/2009	N001		120.000		F	#	0.0047	-
	mg/L	CW32	WL	04/16/2009	0001		110.000		FQ	#	0.0047	-
	mg/L	CW33	WL	04/17/2009	N001		110.000		F	#	0.0047	-
	mg/L	CW33	WL	04/17/2009	N002		110.000		F	#	0.0047	-
	mg/L	CW34	WL	04/17/2009	N001		100.000		F	#	0.0047	-
	mg/L	CW35	WL	04/17/2009	N001		100.000		F	#	0.0047	-
Specific Conductance	umhos/cm	0170	WL	04/17/2009	N001	92.23 - 112.23	3482		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	0172	WL	04/17/2009	N001	6.98 - 31.98	18323		F	#	-	-
	umhos/cm	0195	WL	04/16/2009	N001	5.29 - 25.29	1403		F	#	-	-
	umhos/cm	0201	WL	04/16/2009	N001	7.35 - 22.35	4792		F	#	-	-
	umhos/cm	0215	WL	04/16/2009	N001	6.84 - 21.84	1310		F	#	-	-
	umhos/cm	0216	WL	04/16/2009	N001	5.50 - 20.50	2527		F	#	-	-
	umhos/cm	0217	WL	04/15/2009	N001	7.40 - 22.40	3650		F	#	-	-
	umhos/cm	0590	WL	04/15/2009	N001	5.21 - 19.21	5680		F	#	-	-
	umhos/cm	0620	WL	04/17/2009	N001	6.70 - 10.70	6269		F	#	-	-
	umhos/cm	0635	WL	04/16/2009	N001	12.00 - 17.00	4592		F	#	-	-
	umhos/cm	0659	WL	04/15/2009	N001	0.50 - 10.50	3400		F	#	-	-
	umhos/cm	0664	WL	04/15/2009	N001	7.70 - 14.70	2855		FQ	#	-	-
	umhos/cm	0669	WL	04/15/2009	N001	4.00 - 10.60	3975		FQ	#	-	-
	umhos/cm	0687	WL	04/16/2009	N001	9.70 - 14.70	2074		F	#	-	-
	umhos/cm	0855	WL	04/15/2009	N001	6.00 - 11.00	4100		FQ	#	-	-
	umhos/cm	0856	WL	04/15/2009	N001	12.00 - 16.00	2560		F	#	-	-
	umhos/cm	0857	WL	04/15/2009	N001	19.00 - 23.00	2700		F	#	-	-
	umhos/cm	0863	WL	04/15/2009	N001	10.50 - 25.50	6480		F	#	-	-
	umhos/cm	CW31	WL	04/17/2009	N001		1702		F	#	-	-
	umhos/cm	CW32	WL	04/16/2009	N001		1646		FQ	#	-	-
	umhos/cm	CW33	WL	04/17/2009	N001		2030		F	#	-	-
	umhos/cm	CW34	WL	04/17/2009	N001		1458		F	#	-	-
	umhos/cm	CW35	WL	04/17/2009	N001		1426		F	#	-	-
Sulfate	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	1200		F	#	25	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	6700		F	#	100	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	240		F	#	10	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	2100		F	#	25	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	210		F	#	5	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	210		F	#	5	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	1500		F	#	25	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	2200		F	#	25	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	2200		F	#	25	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	1800		F	#	25	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	1500		F	#	25	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	1600		F	#	25	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	870		FQ	#	25	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	1700		FQ	#	25	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	450		F	#	10	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	1500		FQ	#	25	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	740		F	#	10	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	890		F	#	10	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	2700		F	#	25	-
	mg/L	CW31	WL	04/17/2009	N001		480		F	#	10	-
	mg/L	CW32	WL	04/16/2009	0001		440		FQ	#	10	-
	mg/L	CW33	WL	04/17/2009	N001		710		F	#	10	-
	mg/L	CW33	WL	04/17/2009	N002		700		F	#	10	-
	mg/L	CW34	WL	04/17/2009	N001		370		F	#	10	-
	mg/L	CW35	WL	04/17/2009	N001		320		F	#	10	-
Temperature	C	0170	WL	04/17/2009	N001	92.23 - 112.23	13.70		F	#	-	-
	C	0172	WL	04/17/2009	N001	6.98 - 31.98	12.75		F	#	-	-
	C	0195	WL	04/16/2009	N001	5.29 - 25.29	8.52		F	#	-	-
	C	0201	WL	04/16/2009	N001	7.35 - 22.35	10.24		F	#	-	-
	C	0215	WL	04/16/2009	N001	6.84 - 21.84	10.8		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0216	WL	04/16/2009	N001	5.50 - 20.50	9.01		F	#	-	-
	C	0217	WL	04/15/2009	N001	7.40 - 22.40	9.1		F	#	-	-
	C	0590	WL	04/15/2009	N001	5.21 - 19.21	9.4		F	#	-	-
	C	0620	WL	04/17/2009	N001	6.70 - 10.70	10.40		F	#	-	-
	C	0635	WL	04/16/2009	N001	12.00 - 17.00	10.85		F	#	-	-
	C	0659	WL	04/15/2009	N001	0.50 - 10.50	10.4		F	#	-	-
	C	0664	WL	04/15/2009	N001	7.70 - 14.70	16.8		FQ	#	-	-
	C	0669	WL	04/15/2009	N001	4.00 - 10.60	15.5		FQ	#	-	-
	C	0687	WL	04/16/2009	N001	9.70 - 14.70	10.41		F	#	-	-
	C	0855	WL	04/15/2009	N001	6.00 - 11.00	11.9		FQ	#	-	-
	C	0856	WL	04/15/2009	N001	12.00 - 16.00	11.7		F	#	-	-
	C	0857	WL	04/15/2009	N001	19.00 - 23.00	13.0		F	#	-	-
	C	0863	WL	04/15/2009	N001	10.50 - 25.50	12.3		F	#	-	-
	C	CW31	WL	04/17/2009	N001		8.66		F	#	-	-
	C	CW32	WL	04/16/2009	N001		9.51		FQ	#	-	-
	C	CW33	WL	04/17/2009	N001		8.07		F	#	-	-
	C	CW34	WL	04/17/2009	N001		9.22		F	#	-	-
	C	CW35	WL	04/17/2009	N001		8.44		F	#	-	-
Turbidity	NTU	0170	WL	04/17/2009	N001	92.23 - 112.23	5.31		F	#	-	-
	NTU	0172	WL	04/17/2009	N001	6.98 - 31.98	4.55		F	#	-	-
	NTU	0195	WL	04/16/2009	N001	5.29 - 25.29	9.7		F	#	-	-
	NTU	0201	WL	04/16/2009	N001	7.35 - 22.35	1.88		F	#	-	-
	NTU	0215	WL	04/16/2009	N001	6.84 - 21.84	1.95		F	#	-	-
	NTU	0216	WL	04/16/2009	N001	5.50 - 20.50	2.64		F	#	-	-
	NTU	0217	WL	04/15/2009	N001	7.40 - 22.40	3.00		F	#	-	-
	NTU	0590	WL	04/15/2009	N001	5.21 - 19.21	1.31		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0620	WL	04/17/2009	N001	6.70 - 10.70	1.72		F	#	-	-
	NTU	0635	WL	04/16/2009	N001	12.00 - 17.00	3.12		F	#	-	-
	NTU	0659	WL	04/15/2009	N001	0.50 - 10.50	6.07		F	#	-	-
	NTU	0664	WL	04/15/2009	N001	7.70 - 14.70	44.9		FQ	#	-	-
	NTU	0669	WL	04/15/2009	N001	4.00 - 10.60	653		FQ	#	-	-
	NTU	0687	WL	04/16/2009	N001	9.70 - 14.70	1.45		F	#	-	-
	NTU	0855	WL	04/15/2009	N001	6.00 - 11.00	76.5		FQ	#	-	-
	NTU	0856	WL	04/15/2009	N001	12.00 - 16.00	9.05		F	#	-	-
	NTU	0857	WL	04/15/2009	N001	19.00 - 23.00	8.23		F	#	-	-
	NTU	0863	WL	04/15/2009	N001	10.50 - 25.50	2.08		F	#	-	-
	NTU	CW31	WL	04/17/2009	N001		1.94		F	#	-	-
	NTU	CW32	WL	04/16/2009	N001		249		FQ	#	-	-
	NTU	CW33	WL	04/17/2009	N001		3.04		F	#	-	-
	NTU	CW34	WL	04/17/2009	N001		9.84		F	#	-	-
	NTU	CW35	WL	04/17/2009	N001		1.42		F	#	-	-
Uranium	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	0.060		F	#	4.5E-06	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	0.057		F	#	4.5E-06	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	0.029		F	#	4.5E-06	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	0.077		F	#	0.00009	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	0.023		F	#	4.5E-06	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	0.052		F	#	9E-06	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	0.120		F	#	0.00009	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	0.057		F	#	0.00009	-
	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	0.060		F	#	4.5E-06	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	0.100		F	#	2.2E-05	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	0.110		F	#	0.00022	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	0.110		F	#	0.00022	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	0.082		FQ	#	2.2E-05	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	0.069		FQ	#	0.00009	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	0.060		F	#	9E-06	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	0.0084		FQ	#	4.5E-05	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	0.089		F	#	9E-06	-
	mg/L	0857	WL	04/08/2009	N001	19.00 - 23.00	0.092			#	4.5E-06	-
	mg/L	0857	WL	04/12/2009	N001	19.00 - 23.00	0.092			#	4.5E-06	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	0.090		F	#	4.5E-05	-
	mg/L	0857	WL	04/16/2009	N001	19.00 - 23.00	0.092			#	4.5E-06	-
	mg/L	0857	WL	04/20/2009	N001	19.00 - 23.00	0.094			#	4.5E-06	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	0.094		F	#	0.00022	-
	mg/L	CW31	WL	04/17/2009	N001		0.039		F	#	4.5E-05	-
	mg/L	CW32	WL	04/16/2009	0001		0.035		FQ	#	4.5E-05	-
	mg/L	CW33	WL	04/17/2009	N001		0.047		F	#	4.5E-05	-
	mg/L	CW33	WL	04/17/2009	N002		0.045		F	#	4.5E-05	-
	mg/L	CW34	WL	04/17/2009	N001		0.022		F	#	2.2E-05	-
	mg/L	CW35	WL	04/17/2009	N001		0.016		F	#	2.2E-05	-
Vanadium	mg/L	0170	WL	04/17/2009	N001	92.23 - 112.23	0.00075		JF	#	0.00014	-
	mg/L	0172	WL	04/17/2009	N001	6.98 - 31.98	0.00014	U	JF	#	0.00014	-
	mg/L	0195	WL	04/16/2009	N001	5.29 - 25.29	0.0003		JF	#	0.00014	-
	mg/L	0201	WL	04/16/2009	N001	7.35 - 22.35	0.0028		F	#	0.00014	-
	mg/L	0215	WL	04/16/2009	N001	6.84 - 21.84	0.00069		JF	#	0.00014	-
	mg/L	0216	WL	04/16/2009	N001	5.50 - 20.50	0.640		F	#	0.0045	-
	mg/L	0217	WL	04/15/2009	N001	7.40 - 22.40	1.900		F	#	0.023	-
	mg/L	0590	WL	04/15/2009	N001	5.21 - 19.21	0.350		F	#	0.0023	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Vanadium	mg/L	0620	WL	04/17/2009	N001	6.70 - 10.70	0.0011		JF	#	0.00014	-
	mg/L	0635	WL	04/16/2009	N001	12.00 - 17.00	0.00039		JF	#	0.00014	-
	mg/L	0659	WL	04/15/2009	0002	0.50 - 10.50	0.710		F	#	0.0045	-
	mg/L	0659	WL	04/15/2009	N001	0.50 - 10.50	0.760		F	#	0.0091	-
	mg/L	0664	WL	04/15/2009	N001	7.70 - 14.70	1.800		FQ	#	0.023	-
	mg/L	0669	WL	04/15/2009	N001	4.00 - 10.60	3.100		FQ	#	0.023	-
	mg/L	0687	WL	04/16/2009	N001	9.70 - 14.70	2.200		F	#	0.023	-
	mg/L	0855	WL	04/15/2009	0001	6.00 - 11.00	1000.000		FQ	#	9.1	-
	mg/L	0856	WL	04/15/2009	N001	12.00 - 16.00	8.600		F	#	0.091	-
	mg/L	0857	WL	04/08/2009	N001	19.00 - 23.00	44.000			#	0.45	-
	mg/L	0857	WL	04/12/2009	N001	19.00 - 23.00	41.000			#	0.45	-
	mg/L	0857	WL	04/15/2009	N001	19.00 - 23.00	33.000		F	#	0.45	-
	mg/L	0857	WL	04/16/2009	N001	19.00 - 23.00	34.000			#	0.45	-
	mg/L	0857	WL	04/20/2009	N001	19.00 - 23.00	34.000			#	0.45	-
	mg/L	0863	WL	04/15/2009	N001	10.50 - 25.50	0.480		F	#	0.0045	-
	mg/L	CW31	WL	04/17/2009	N001		4.100		F	#	0.045	-
	mg/L	CW32	WL	04/16/2009	0001		7.500		FQ	#	0.045	-
	mg/L	CW33	WL	04/17/2009	N001		9.100		F	#	0.091	-
	mg/L	CW33	WL	04/17/2009	N002		8.900		F	#	0.091	-
	mg/L	CW34	WL	04/17/2009	N001		5.100		F	#	0.045	-
	mg/L	CW35	WL	04/17/2009	N001		3.700		F	#	0.045	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 9/3/2009 12:33 pm

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

RECORDS: SELECTED FROM USEE200 WHERE site_code='RFN01' 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 #4/1/2009# and #4/20/2009#

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

LOCATION TYPES: WL WELL

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.

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0292A	WL	04/14/2009	0001		518		FQ	#	-	-
	mg/L	0304	WL	04/14/2009	N001	13.20 - 18.20	290		F	#	-	-
	mg/L	0305	WL	04/13/2009	N001	13.76 - 18.76	380		F	#	-	-
	mg/L	0309	WL	04/13/2009	N001	16.93 - 21.93	360		F	#	-	-
	mg/L	0310	WL	04/13/2009	N001	17.93 - 22.93	440		F	#	-	-
	mg/L	0655	WL	04/13/2009	N001	13.60 - 23.60	474		F	#	-	-
	mg/L	0656	WL	04/14/2009	N001	6.35 - 21.35	358		F	#	-	-
	mg/L	0658	WL	04/14/2009	N001	2.30 - 17.30	530		F	#	-	-
Oxidation Reduction Potent	mV	0292A	WL	04/14/2009	N001		88.3		FQ	#	-	-
	mV	0304	WL	04/14/2009	N001	13.20 - 18.20	181		F	#	-	-
	mV	0305	WL	04/13/2009	N001	13.76 - 18.76	90.3		F	#	-	-
	mV	0309	WL	04/13/2009	N001	16.93 - 21.93	39.3		F	#	-	-
	mV	0310	WL	04/13/2009	N001	17.93 - 22.93	23.1		F	#	-	-
	mV	0655	WL	04/13/2009	N001	13.60 - 23.60	85.1		F	#	-	-
	mV	0656	WL	04/14/2009	N001	6.35 - 21.35	150		F	#	-	-
	mV	0658	WL	04/14/2009	N001	2.30 - 17.30	165		F	#	-	-
pH	s.u.	0292A	WL	04/14/2009	N001		6.99		FQ	#	-	-
	s.u.	0304	WL	04/14/2009	N001	13.20 - 18.20	7.22		F	#	-	-
	s.u.	0305	WL	04/13/2009	N001	13.76 - 18.76	7.27		F	#	-	-
	s.u.	0309	WL	04/13/2009	N001	16.93 - 21.93	7.07		F	#	-	-
	s.u.	0310	WL	04/13/2009	N001	17.93 - 22.93	7.08		F	#	-	-
	s.u.	0655	WL	04/13/2009	N001	13.60 - 23.60	7.83		F	#	-	-
	s.u.	0656	WL	04/14/2009	N001	6.35 - 21.35	7.09		F	#	-	-
	s.u.	0658	WL	04/14/2009	N001	2.30 - 17.30	7.02		F	#	-	-
Selenium	mg/L	0292A	WL	04/14/2009	0001		0.0022		FQ	#	1.8E-05	-
	mg/L	0304	WL	04/14/2009	N001	13.20 - 18.20	0.0094		F	#	1.8E-05	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	0305	WL	04/13/2009	N001	13.76 - 18.76	0.025		F	#	3.6E-05	-
	mg/L	0309	WL	04/13/2009	0002	16.93 - 21.93	0.00014		UF	#	1.8E-05	-
	mg/L	0309	WL	04/13/2009	N001	16.93 - 21.93	0.00019		UF	#	1.8E-05	-
	mg/L	0310	WL	04/13/2009	N001	17.93 - 22.93	0.00016		UF	#	1.8E-05	-
	mg/L	0655	WL	04/13/2009	N001	13.60 - 23.60	0.0088		F	#	1.8E-05	-
	mg/L	0656	WL	04/14/2009	N001	6.35 - 21.35	0.0017		F	#	1.8E-05	-
	mg/L	0658	WL	04/14/2009	N001	2.30 - 17.30	0.015		F	#	1.8E-05	-
Specific Conductance	umhos/cm	0292A	WL	04/14/2009	N001		2856		FQ	#	-	-
	umhos/cm	0304	WL	04/14/2009	N001	13.20 - 18.20	1450		F	#	-	-
	umhos/cm	0305	WL	04/13/2009	N001	13.76 - 18.76	1933		F	#	-	-
	umhos/cm	0309	WL	04/13/2009	N001	16.93 - 21.93	2335		F	#	-	-
	umhos/cm	0310	WL	04/13/2009	N001	17.93 - 22.93	2785		F	#	-	-
	umhos/cm	0656	WL	04/14/2009	N001	6.35 - 21.35	1635		F	#	-	-
	umhos/cm	0658	WL	04/14/2009	N001	2.30 - 17.30	2090		F	#	-	-
Temperature	C	0292A	WL	04/14/2009	N001		11.2		FQ	#	-	-
	C	0304	WL	04/14/2009	N001	13.20 - 18.20	9.9		F	#	-	-
	C	0305	WL	04/13/2009	N001	13.76 - 18.76	11.17		F	#	-	-
	C	0309	WL	04/13/2009	N001	16.93 - 21.93	12.79		F	#	-	-
	C	0310	WL	04/13/2009	N001	17.93 - 22.93	12.29		F	#	-	-
	C	0655	WL	04/13/2009	N001	13.60 - 23.60	16.84		F	#	-	-
	C	0656	WL	04/14/2009	N001	6.35 - 21.35	12.2		F	#	-	-
	C	0658	WL	04/14/2009	N001	2.30 - 17.30	7.4		F	#	-	-
Turbidity	NTU	0292A	WL	04/14/2009	N001		114		FQ	#	-	-
	NTU	0304	WL	04/14/2009	N001	13.20 - 18.20	5.47		F	#	-	-
	NTU	0305	WL	04/13/2009	N001	13.76 - 18.76	1.68		F	#	-	-
	NTU	0309	WL	04/13/2009	N001	16.93 - 21.93	8.45		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/3/2009 12:33 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0310	WL	04/13/2009	N001	17.93 - 22.93	7.25		F	#	-	-
	NTU	0655	WL	04/13/2009	N001	13.60 - 23.60	0.62		F	#	-	-
	NTU	0656	WL	04/14/2009	N001	6.35 - 21.35	2.71		F	#	-	-
	NTU	0658	WL	04/14/2009	N001	2.30 - 17.30	3.96		F	#	-	-
Uranium	mg/L	0292A	WL	04/14/2009	0001		0.036		FQ	#	4.5E-06	-
	mg/L	0304	WL	04/14/2009	N001	13.20 - 18.20	0.036		F	#	4.5E-06	-
	mg/L	0305	WL	04/13/2009	N001	13.76 - 18.76	0.110		F	#	2.2E-05	-
	mg/L	0309	WL	04/13/2009	0002	16.93 - 21.93	0.016		F	#	4.5E-06	-
	mg/L	0309	WL	04/13/2009	N001	16.93 - 21.93	0.016		F	#	4.5E-06	-
	mg/L	0310	WL	04/13/2009	N001	17.93 - 22.93	0.220		F	#	2.2E-05	-
	mg/L	0655	WL	04/13/2009	N001	13.60 - 23.60	0.120		F	#	2.2E-05	-
	mg/L	0656	WL	04/14/2009	N001	6.35 - 21.35	0.110		F	#	2.2E-05	-
	mg/L	0658	WL	04/14/2009	N001	2.30 - 17.30	0.031		F	#	4.5E-06	-
Vanadium	mg/L	0292A	WL	04/14/2009	0001		0.00014	U	JFQ	#	0.00014	-
	mg/L	0304	WL	04/14/2009	N001	13.20 - 18.20	0.110		F	#	0.0023	-
	mg/L	0305	WL	04/13/2009	N001	13.76 - 18.76	0.520		F	#	0.0045	-
	mg/L	0309	WL	04/13/2009	0002	16.93 - 21.93	0.00014	U	JF	#	0.00014	-
	mg/L	0309	WL	04/13/2009	N001	16.93 - 21.93	0.00014	U	JF	#	0.00014	-
	mg/L	0310	WL	04/13/2009	N001	17.93 - 22.93	0.011		F	#	0.00014	-
	mg/L	0655	WL	04/13/2009	N001	13.60 - 23.60	0.330		F	#	0.0023	-
	mg/L	0656	WL	04/14/2009	N001	6.35 - 21.35	0.027		F	#	0.00023	-
	mg/L	0658	WL	04/14/2009	N001	2.30 - 17.30	0.0018		F	#	0.00014	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/3/2009 12:33 pm

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

RECORDS: SELECTED FROM USEE200 WHERE site_code='RFO01' 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 #4/1/2009# and #4/20/2009#

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

LOCATION TYPES: WL WELL

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.

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/3/2009 12:34 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0294	04/14/2009	N001	124			#	-	-
	mg/L	0396	04/13/2009	0001	156			#	-	-
	mg/L	0398	04/14/2009	N001	327			#	-	-
	mg/L	0741	04/13/2009	0001	133			#	-	-
Oxidation Reduction Potent	mV	0294	04/14/2009	N001	119.31			#	-	-
	mV	0396	04/13/2009	N001	70.1			#	-	-
	mV	0398	04/14/2009	N001	172			#	-	-
	mV	0741	04/13/2009	N001	56.1			#	-	-
pH	s.u.	0294	04/14/2009	N001	8.21			#	-	-
	s.u.	0396	04/13/2009	N001	8.27			#	-	-
	s.u.	0398	04/14/2009	N001	8.03			#	-	-
	s.u.	0741	04/13/2009	N001	8.23			#	-	-
Selenium	mg/L	0294	04/14/2009	0001	0.0003			#	1.8E-05	-
	mg/L	0396	04/13/2009	0001	0.0004			#	1.8E-05	-
	mg/L	0398	04/14/2009	N001	0.0056			#	1.8E-05	-
	mg/L	0741	04/13/2009	0001	0.0003			#	1.8E-05	-
Specific Conductance	umhos/cm	0294	04/14/2009	N001	902			#	-	-
	umhos/cm	0396	04/13/2009	N001	946			#	-	-
	umhos/cm	0398	04/14/2009	N001	1885			#	-	-
	umhos/cm	0741	04/13/2009	N001	949			#	-	-
Temperature	C	0294	04/14/2009	N001	10.21			#	-	-
	C	0396	04/13/2009	N001	15.72			#	-	-
	C	0398	04/14/2009	N001	10.1			#	-	-
	C	0741	04/13/2009	N001	12.85			#	-	-
Turbidity	NTU	0294	04/14/2009	N001	86.9			#	-	-
	NTU	0396	04/13/2009	N001	36.9			#	-	-
	NTU	0398	04/14/2009	N001	2.7			#	-	-
	NTU	0741	04/13/2009	N001	36.8			#	-	-
Uranium	mg/L	0294	04/14/2009	0001	0.002			#	4.5E-06	-
	mg/L	0396	04/13/2009	0001	0.0021			#	4.5E-06	-
	mg/L	0398	04/14/2009	N001	0.030			#	4.5E-06	-
	mg/L	0741	04/13/2009	0001	0.002			#	4.5E-06	-
Vanadium	mg/L	0294	04/14/2009	0001	0.0004		J	#	0.00014	-
	mg/L	0396	04/13/2009	0001	0.0015			#	0.00014	-
	mg/L	0398	04/14/2009	N001	0.0067			#	0.00014	-
	mg/L	0741	04/13/2009	0001	0.0003		J	#	0.00014	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 9/3/2009 12:34 pm

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

RECORDS: SELECTED FROM USEE800 WHERE site_code='RFO01' 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 #4/1/2009# and #4/20/2009#

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

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