DOE–LM/GJ739–2004

Verification Monitoring Report for the Gunnison, Colorado, UMTRCA Title I Processing Site

September 2004

U.S. Department of Energy

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

Verification Monitoring Report for the

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Acronyms and Abbreviations

CDPHE	Colorado Department of Public Health and Environment
COPC	constituent of potential concern
DOE	U.S. Department of Energy
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
FONSI	Finding of no Significant Impact
ft	foot (feet)
GCAP	Ground Water Compliance Action Plan
IC	institutional control(s)
MCL	maximum concentration limit
mg/L	milligram(s) per liter
NRC	U.S. Nuclear Regulatory Commission
RBC	risk-based concentration
RRM	residual radioactive material
SOWP	Site Observational Work Plan
UMTRCA	Uranium Mill Tailings Radiation Control Act
VMR	Verification Monitoring Report

End of current text

1.0 Introduction

1.1 Purpose of Report

The purpose of this Verification Monitoring Report (VMR) is to evaluate ground water and surface water monitoring data collected during the annual 2004 sampling event at the Gunnison, Colorado, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I processing site and to assess the status of the compliance strategy for ground water cleanup (Figure 1). Detailed information for the Gunnison processing site and water quality data through 1999 are found in the Final Site Observational Work Plan (SOWP) (DOE 2001a). Water quality data from 2000 through 2003 are found in the previous VMR (DOE 2003). Water quality data for 2004 are provided in Appendices A through C of this report. All water quality data for the Gunnison processing site are archived in the SEEPro database at the U.S. Department of Energy (DOE) Grand Junction Office.

Information regarding monitoring and compliance with water quality standards at the Gunnison disposal site (6 miles east of the processing site) is reported in the 2003 Annual Site Inspection and Monitoring Report for Uranium Mill Tailings Radiation Control Act Title I Disposal Sites (DOE 2004).

1.2 Site Status

The SOWP (DOE 2001a) is complete and has been conditionally accepted by the U.S. Nuclear Regulatory Commission (NRC) and the Colorado Department of Public Health and Environment (CDPHE). The conditions are that DOE shall install two additional monitor wells in the network downgradient from the site and implement institutional controls (IC) in the potentially affected area (NRC 2002) (Figure 2). A draft Ground Water Compliance Action Plan (GCAP) was completed based on information in the SOWP (DOE 2001b).

Additional review of the monitoring network was initiated by a letter from DOE to NRC and CDPHE dated August 26, 2003 and a follow-up site visit on September 11, 2003. This led to a letter and Technical Evaluation Report from NRC to DOE dated July 9, 2004 where NRC (1) accepted the proposed locations of the above-mentioned monitor wells; (2) determined locations for 3 additional monitor wells to be installed north of Tomichi Creek upstream from its confluence with the South Fork of the Gunnison River; (3) added 3 existing domestic wells south of Tomichi Creek to the ground water monitoring network; (4) concluded that 36 unneeded monitor wells could be decommissioned; and (5) added 10 existing monitor wells to the monitoring network (NRC 2004). Installation of the additional monitor wells and decommissioning activities are scheduled to be conducted before the end of Fiscal Year 2004. Modifications to the monitoring program will be implemented in Fiscal Year 2005.

Discussions with Gunnison County officials and CDPHE regarding ICs and expansion of the existing domestic water supply system are in progress. The final Environmental Assessment (EA) (DOE 2002) and Finding of No Significant Impact (FONSI) have been completed and distributed.

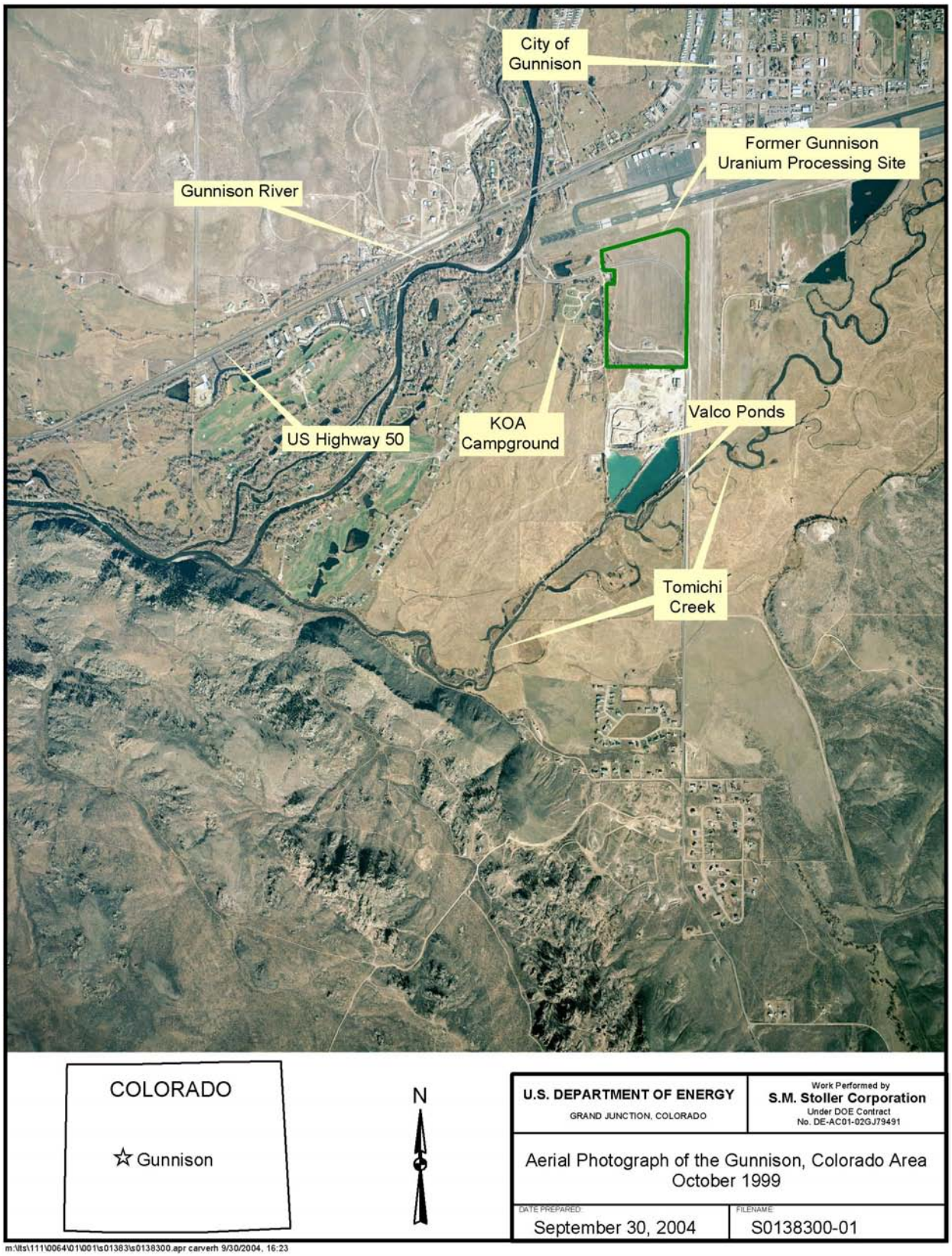

Figure 1. Aerial Photograph of the Gunnison, Colorado, Area

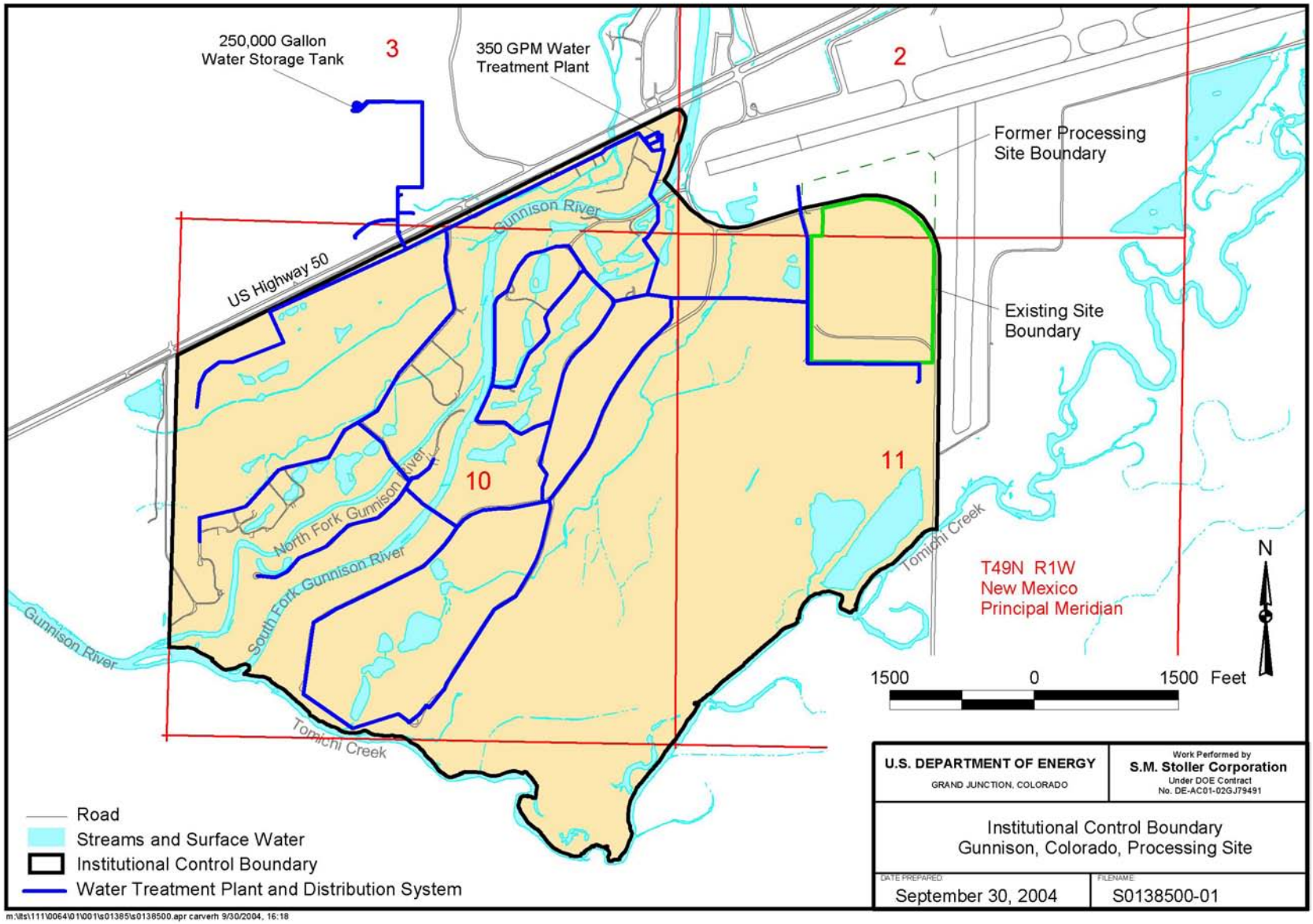

Figure 2. Proposed Institutional Control Boundary at the Gunnison, Colorado, Processing Site

The GCAP will be revised when the above monitoring conditions are met and ICs are in place. The final GCAP will be submitted to NRC for concurrence and will provide the guidance for long-term management activities at the Gunnison processing site.

1.3 Ground Water Quality

Ground water in the alluvial aquifer beneath and downgradient from the Gunnison processing site was contaminated by uranium processing activities. Uranium mill tailings and other residual radioactive material (RRM) were removed from the millsite between 1992 and 1995 and stabilized in a disposal cell 6 miles east of Gunnison. RRM beneath the site was cleaned up to just below the water table with some contaminated material left in place. Clean fill was placed above these areas to prevent radiation from emanating to the surface.

Uranium is the primary constituent of potential concern (COPC) in ground water, with concentrations up to 0.680 milligrams per liter (mg/L) beneath the site, and exceeding the uranium maximum concentration limit (MCL) of 0.044 mg/L (40 CFR 192) several thousand feet downgradient from the site boundary (Figure 3 and Appendix A). Concentrations of uranium in ground water below the MCL, but above background, extend approximately 7,000 feet (ft) downgradient from the site boundary and have migrated beneath the Gunnison River just beyond the confluence with Tomichi Creek. The zone of contamination attenuates and migrates deeper into the aquifer as it progresses laterally in a southwesterly direction.

Manganese is also a COPC in ground water, with concentrations up to 10.0 mg/L beneath the site (Figure 4 and Appendix A). There is no MCL for manganese, but an acceptable human health risk-based concentration (RBC) is 1.7 mg/L (DOE 2001a). Manganese does not appear to be widespread in the aquifer and concentrations beneath the site are decreasing. Concentrations of manganese are above the RBC beneath and immediately downgradient from site. Concentrations are below the RBC in all other downgradient monitor wells. The presence of manganese above the RBC in ground water in the area of the processing site does not represent a risk to human health and the environment because of ground water use restrictions (DOE 2001a).

1.4 Land and Water Use

The former uranium-ore processing site is owned by Gunnison County. Adjacent properties are owned by Gunnison County, Valco, Inc., and other private parties. Valco, Inc. is involved in commercial aggregate mining operations just south of the Gunnison site. Some of the adjacent area most likely will be subject to residential development in the future. A domestic water supply system was constructed in 1994 to provide drinking water to potentially impacted users in the area (Figure 2). Discussions with Gunnison County officials and CDPHE regarding ICs and expansion of the existing domestic water supply system are in progress.

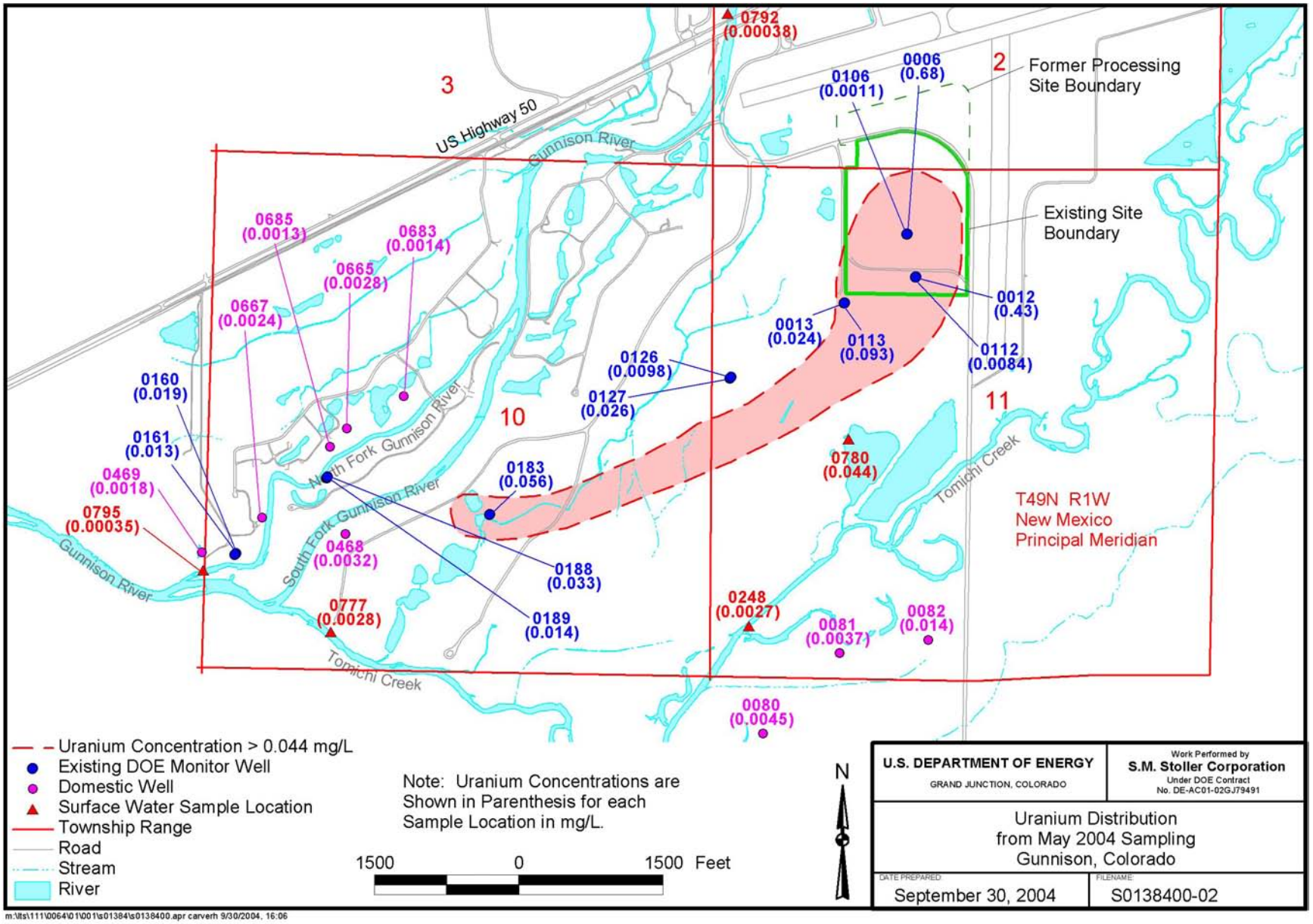

Figure 3. Uranium Distribution from May 2004 Sampling, Gunnison, Colorado

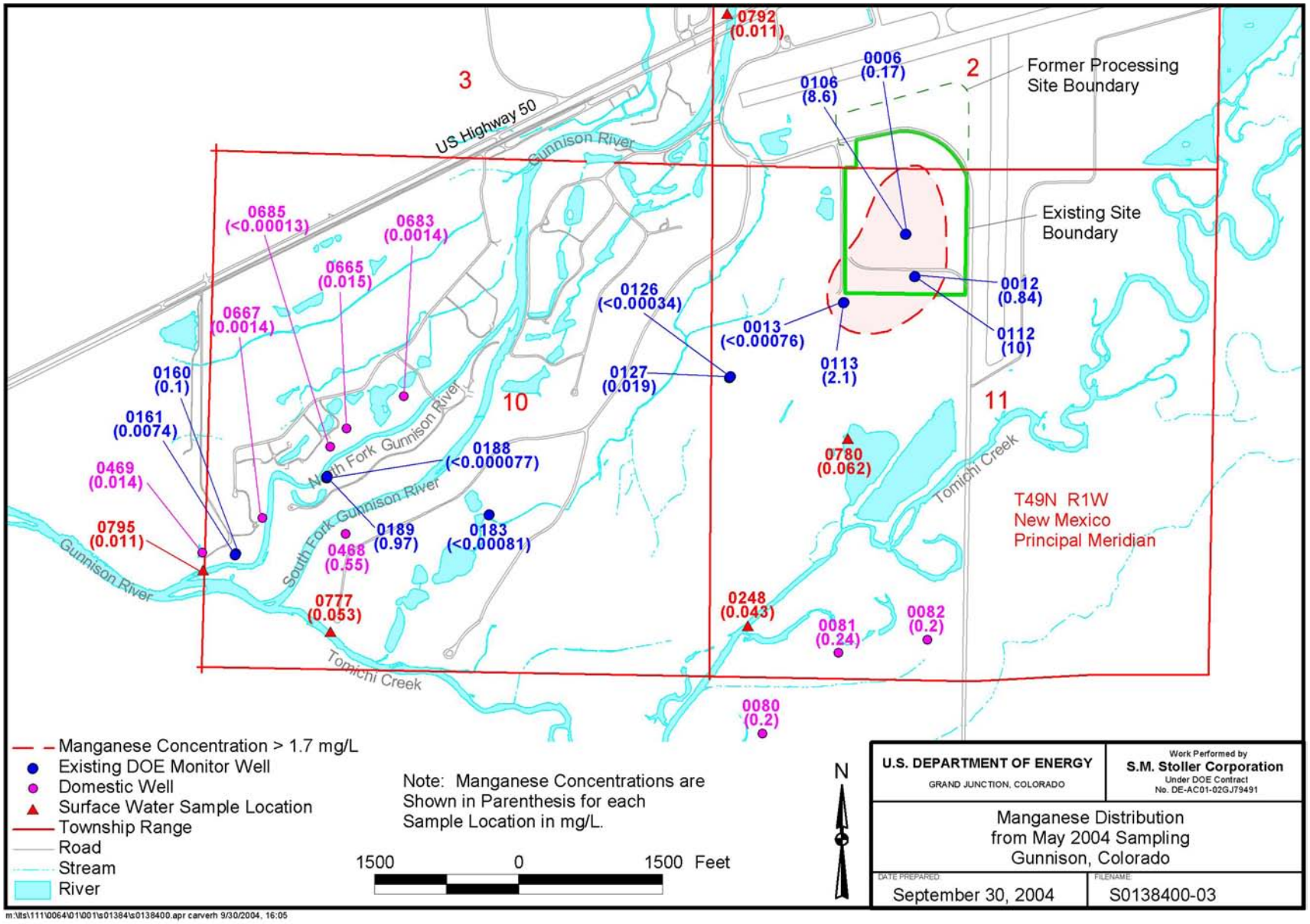

Figure 4. Manganese Distribution from May 2004 Sampling, Gunnison, Colorado

2.0 Monitoring Program

2.1 Monitoring Network

Locations in the monitoring network at the Gunnison processing site sampled during May 2004 included thirteen DOE monitor wells, five surface water locations, and nine domestic wells in the area (Figure 3 and Table 1) (DOE 2001a and 2001b). Uranium and manganese are the COPCs that were analyzed during this period. Annual ground water and surface water verification monitoring as proposed in the SOWP and GCAP was implemented in May 2000. Results for the May 2004 sampling event are presented in this report. The next update to this report will be compiled after ground water and surface water monitoring in May 2005.

Verification monitoring will be performed annually for the first 5 years after NRC concurrence with the GCAP (revision in progress) to ascertain that natural flushing is progressing as predicted by ground water flow and transport modeling (DOE 2001a). Ongoing monitoring requirements will be periodically evaluated and modified as determined by DOE and the regulators.

2.2 Results of 2004 Monitoring Program

Ground water and surface water analytical results through October 1999 are discussed in the SOWP (DOE 2001a), and results from 2000 through 2003 are presented and discussed in the previous VMR (DOE 2003). Only concentrations of uranium and manganese in ground water and surface water are discussed in this report since they are the COPCs. Concentration versus time plots for uranium and manganese in DOE monitor wells, domestic wells, and surface water, from 1997 (post-remedial action) through 2004, are shown in Figure 5 through Figure 10, respectively. The alluvial aquifer has been divided into three zones: (1) shallow zone from 10 to 15 ft; (2) intermediate zone from 35 to 60 ft; and (3) deep zone from 90 to 100 ft (Table 1). Analytical data for uranium and manganese in ground water in DOE monitor wells and domestic wells, and surface water for 2004 are provided in Appendices A through C, respectively.

2.2.1 DOE Monitor Wells

Concentrations of uranium in ground water in DOE monitor wells are shown in Figure 5. Concentrations of uranium in the shallow zone beneath the site (monitor wells 0006 and 0012) are still above the MCL of 0.044 mg/L. Concentrations have decreased since 2003 and the overall trend indicates that natural flushing in ground water in the alluvial aquifer is progressing. Concentrations of uranium in ground water in the intermediate zone beneath the site (monitor well 0106 and 0112) remain at or below background levels. Uranium concentrations in ground water just off the southwest corner of the site are elevated deeper in the alluvium, with levels below the MCL in the shallow zone (monitor well 0013) and above the MCL in the intermediate zone (monitor well 0113). Concentrations are below the MCL and decreasing in monitor wells 0126 (intermediate zone) and 0127 (deep zone), with concentrations slightly more elevated in the deep zone. Concentrations are above the MCL in monitor well 0183 in the deep zone and are decreasing slightly. Concentrations are less than the MCL, but also decreasing in monitor well 0188 (intermediate zone), and are relatively constant in monitor well 0189 (deep zone). Concentrations are less than the MCL and slowly decreasing in monitor wells 0160 (intermediate zone) and 0161 (deep zone) across the Gunnison River. This pattern of concentration intensity and distribution

shows that uranium in ground water is migrating deeper in the alluvial sequence while progressing downgradient from the site, as predicted.

Table 1. Summary of Ground Water and Surface Water Monitoring Network at the Gunnison, Colorado, Processing Site

Sample Location ID	Aquifer Zone	Screened Interval (ft)	Location	Rationale for Inclusion (Uranium)
Ground Water – DOE Monitor Wells				
0006	Shallow	10–15	On site	Above MCL
0106	Intermediate	34–39	On site	Background
0012	Shallow	10–15	On site	Above MCL
0112	Intermediate	40–45	On site	Background
0013	Shallow	11–16	Just off site	Below MCL
0113	Intermediate	41–46	Just off site	Above MCL
0126	Intermediate	54–59	Downgradient	Below MCL
0127	Deep	94–99	Downgradient	Below MCL
0183	Deep	93–98	Beneath golf course	Above MCL
0188	Intermediate	53–58	West of Gunnison River	Above background
0189	Deep	93–98	West of Gunnison River	Above background
0160	Intermediate	51–56	West of Gunnison River	Above background
0161	Deep	93–98	West of Gunnison River	Above background
Surface Water				
0248			Tomichi Creek	Near Valco gravel pit
0777			Tomichi Creek	Downstream
0780			Valco gravel pit	At MCL
0792			Gunnison River	Upstream
0795			Gunnison River	Downstream
Ground Water – Domestic Wells				
0080	Shallow	Unknown	Southeast of Tomichi Creek	Subdivision
0081	Shallow	Unknown	Southeast of Tomichi Creek	Subdivision
0082	Shallow	Unknown	Southeast of Tomichi Creek	Subdivision
0468	Shallow	Unknown	East of Gunnison River	Subdivision
0469	Shallow	Unknown	West of Gunnison River	Subdivision
0665	Shallow	Unknown	West of Gunnison River	Subdivision
0667	Shallow	Unknown	West of Gunnison River	Subdivision
0683	Shallow	Unknown	West of Gunnison River	Subdivision
0685	Shallow	Unknown	West of Gunnison River	Subdivision

Concentrations of manganese in ground water beneath the site are above the RBC of 1.7 mg/L in the intermediate zone, with concentrations below the RBC in the shallow zone (Figure 6). All exceedences of the RBC are beneath or immediately adjacent to the south end of the site. Concentrations are generally decreasing over time.

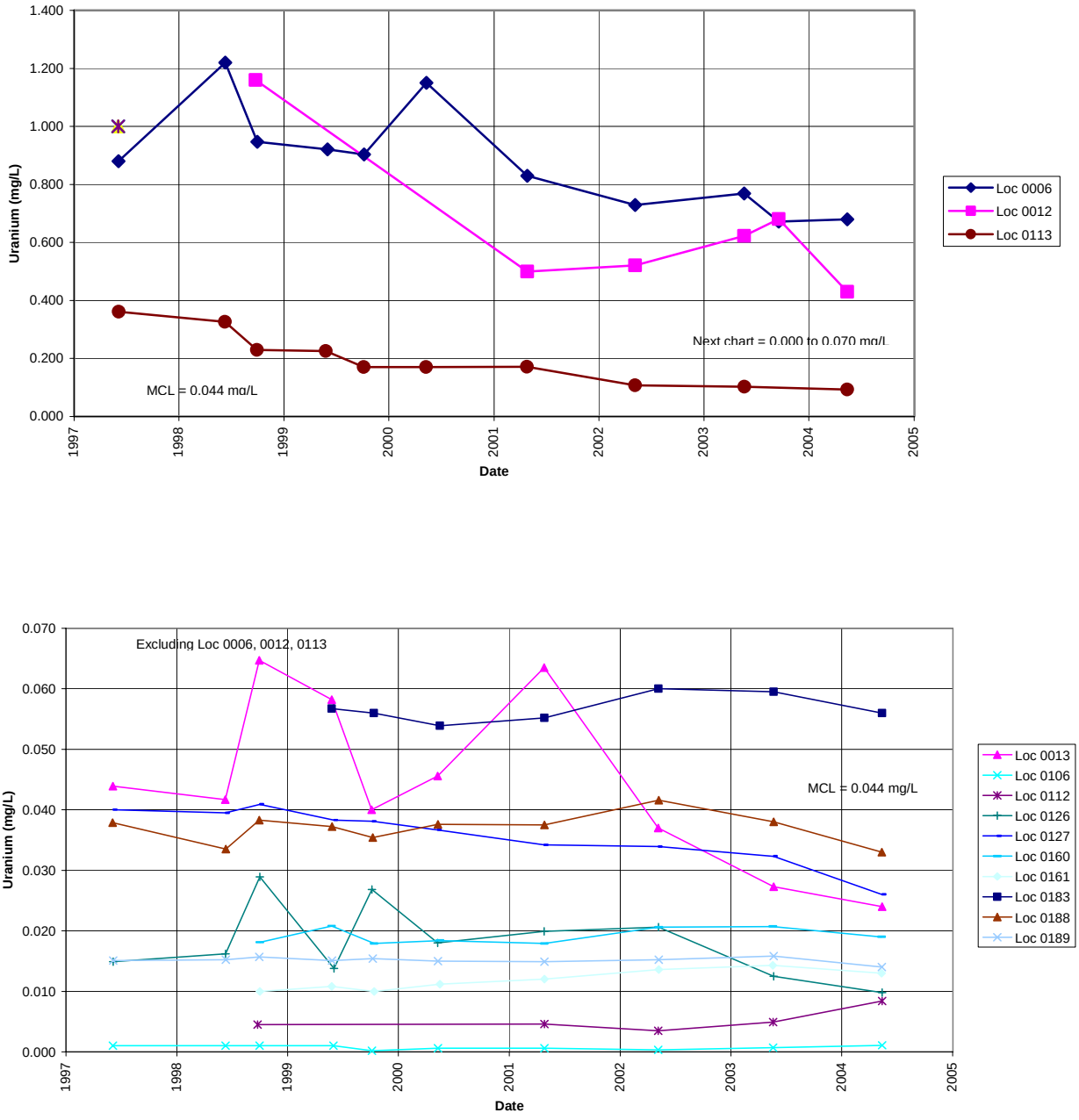

Figure 5. Uranium Concentrations in Ground Water in DOE Monitor Wells at the Gunnison, Colorado, Site

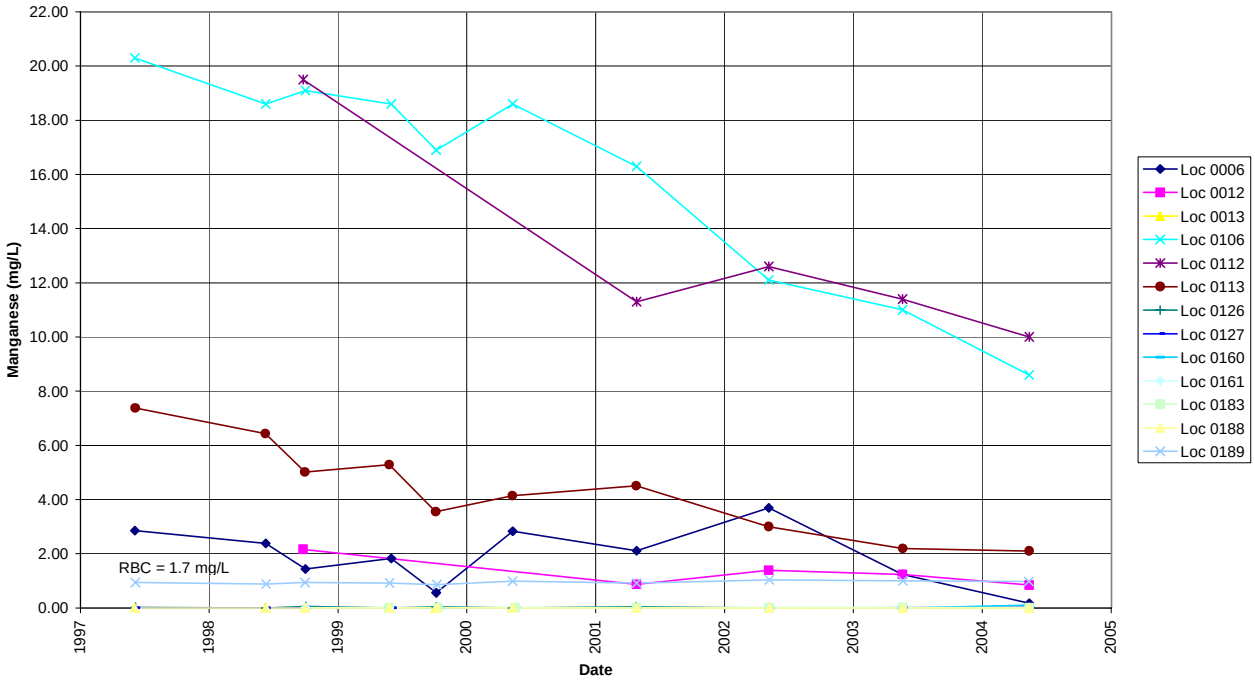

Figure 6. Manganese Concentrations in Ground Water for DOE Monitor Wells at the Gunnison, Colorado, Site

2.2.2 Domestic Wells

Concentrations of uranium in ground water in the domestic wells downgradient from the site are well below the MCL of 0.044 mg/L and below the action level set by CDPHE of 0.020 mg/L (Figure 7). Concentration of uranium in the agricultural well (0468) is well below the CDPHE action level of 0.200 mg/L.

Ground water has been sampled since 2002 in three new domestic wells (0080, 0081, and 0082) installed just southeast of Tomichi Creek in the new Tomichi Creek Preserve subdivision. The wells are approximately 44 ft deep and the open interval in the casing is unknown. Concentrations of uranium in ground water in these three wells during the past three years has ranged from 0.002 to 0.0155 mg/L, with the maximum below the CDPHE action level of 0.020 mg/L for domestic wells. The uranium concentration in ground water in well 0082 was slightly above the upper range of background (0.0085 mg/L) (DOE 1996) during May 2003 (0.016 mg/L) and May 2004 (0.014 mg/L). It was resampled in September 2003 and the uranium concentration was below background at 0.0064 mg/L. The validity and consistency of results from the domestic well may be questionable as the turbidity of the water from the well was elevated above that normally required during sampling of DOE monitor wells. Also, the construction of the well is unknown, and may have an impact on water quality results. DOE does not use results from domestic wells for characterization activities because of these uncertainties. To assess ground water quality in this part of the aquifer, DOE will install a monitor well adjacent to domestic well 0082 in 2004.

Concentrations of manganese in ground water in the domestic wells are well below the RBC of 1.7 mg/L (Figure 8).

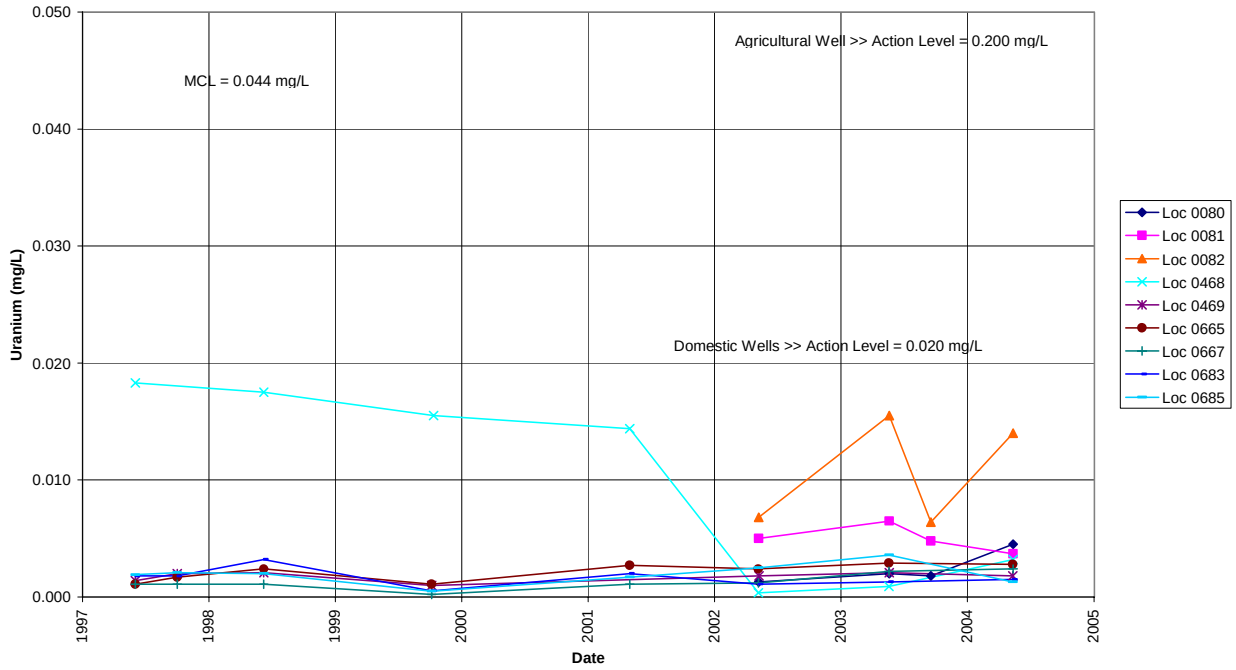

Figure 7. Uranium Concentrations in Ground Water in Domestic Wells at the Gunnison, Colorado, Site

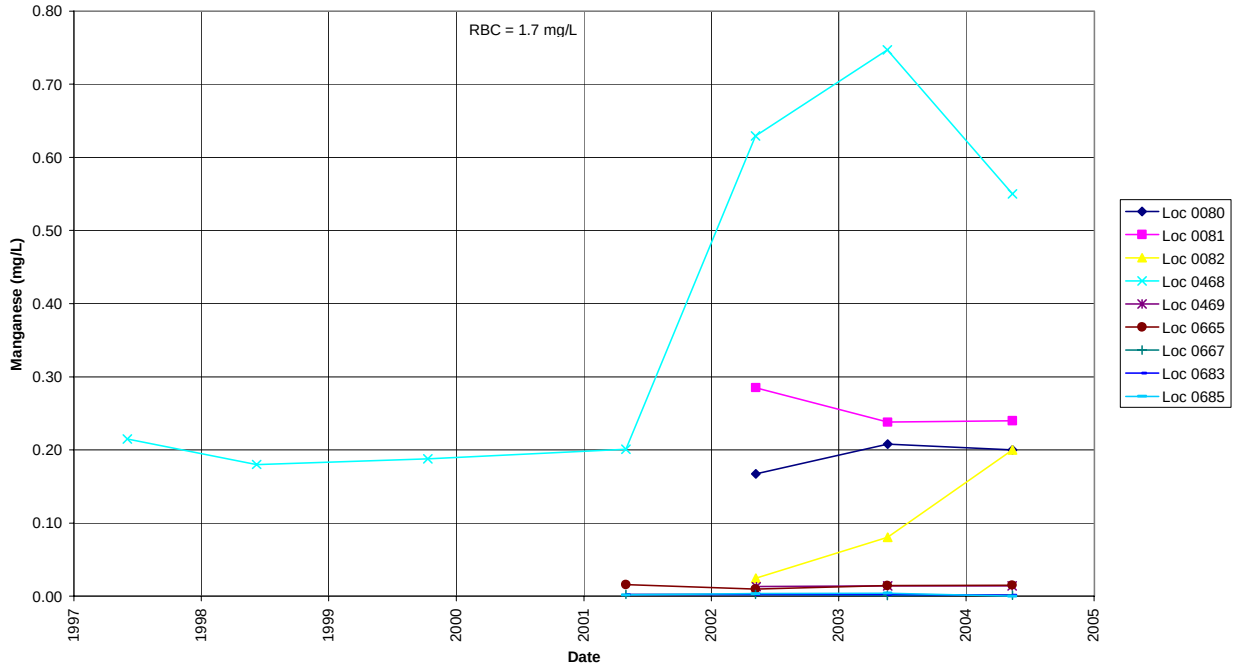

Figure 8. Manganese Concentrations in Ground Water in Domestic Wells at the Gunnison, Colorado, Site

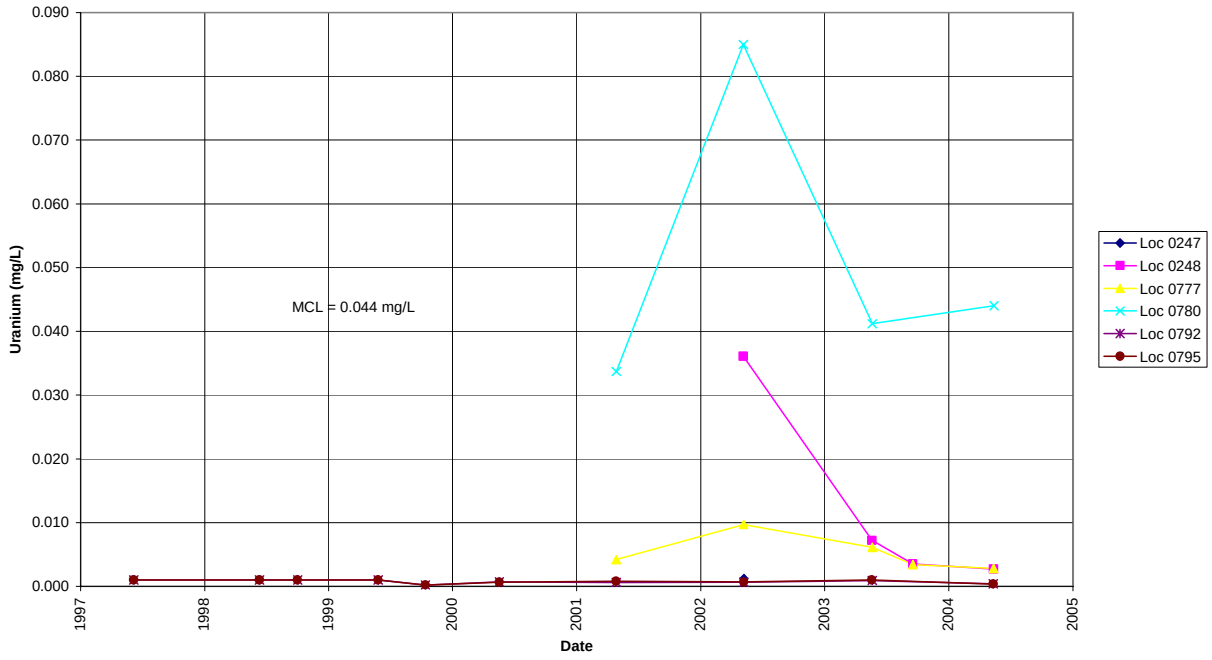

Figure 9. Uranium Concentrations in Surface Water at the Gunnison, Colorado, Site

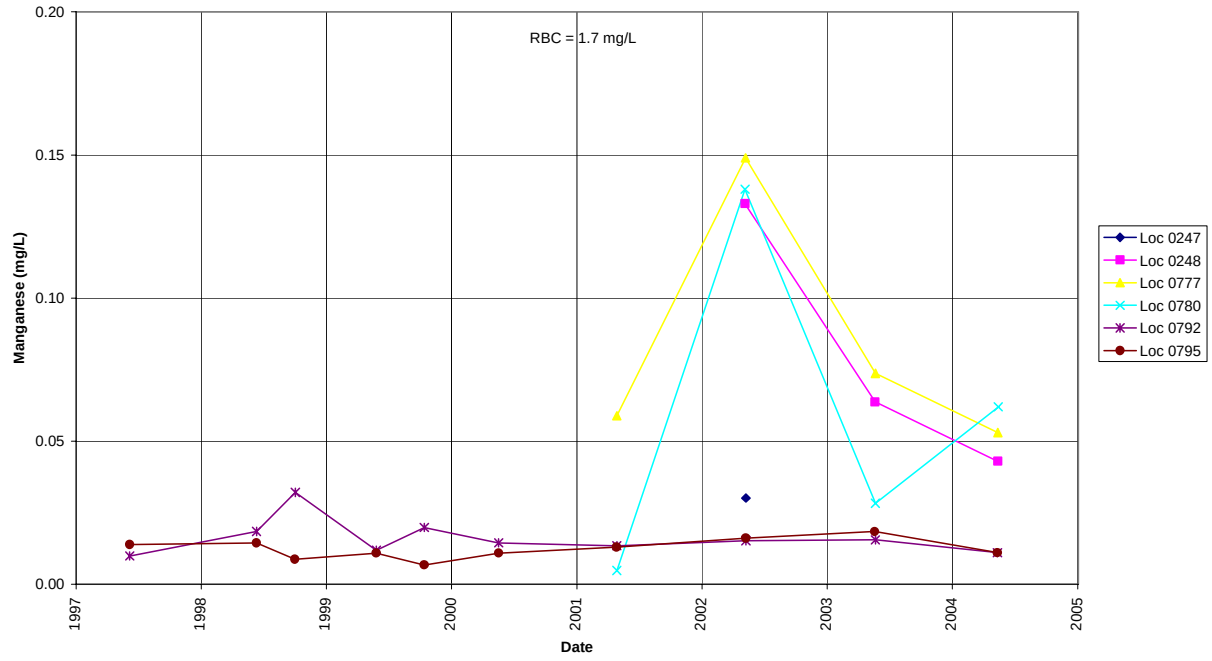

Figure 10. Manganese Concentrations in Surface Water at the Gunnison, Colorado, Site

2.2.3 Surface Water

Concentrations of uranium in surface water in the Gunnison River during 2004 were at or below the background level of 0.003 mg/L, indicating no site-related contamination in the river (Figure 9). Concentration of uranium in surface water in the Valco, Inc. pond (0780) increased slightly during 2004 and is just at the MCL for ground water. Variable concentrations of uranium in surface water in the pit are expected since it is recharged by contaminated ground water; concentrations vary depending on the area and depth of pumping, the rate of discharge, and seasonal interactions between ground water and surface water. Concentration of uranium in Tomichi Creek approximately 1,500 ft downstream from the Valco, Inc. pond discharge point (0248) was below background levels for ground water during 2004. Concentration farther down Tomichi Creek, before the confluence with the Gunnison River, was also below background levels.

Concentrations of manganese in surface water are well below the RBC of 1.7 mg/L (Figure 10).

3.0 Conclusions

Concentrations of uranium and manganese in ground water beneath the Gunnison processing site are still above the relevant MCLs and RBCs, but are decreasing with time, indicating that natural flushing is occurring in the alluvial aquifer (Figure 5 and Figure 6). Concentrations of uranium in ground water downgradient from the site and deeper in the alluvial aquifer in some areas are still elevated, as expected, as the plume migrates downgradient.

Concentrations of COPCs in ground water in the domestic wells are below the MCL and CDPHE action levels for uranium, and below the RBC for manganese (Figure 7 and Figure 8).

Concentrations of uranium in surface water of the Gunnison River are below 0.001 mg/L, indicating no site-related contamination of the river (Figure 9). Concentrations of uranium in surface water in the Valco, Inc. pond are variable, which is expected because the pit is recharged by contaminated ground water. Based on a risk assessment in the SOWP, there is no unacceptable risk to human health at these levels (DOE 2001a). Concentrations of uranium are below background levels for ground water in Tomichi Creek. Concentrations of manganese in surface water are at or less than 0.05 mg/L (Figure 10).

Comparison of uranium concentrations in ground water just off the southwest corner of the site in the intermediate zone in the alluvial aquifer predicted by ground water flow and transport modeling, versus actual concentrations determined by analysis of ground water samples from monitor well 0113, are shown in Figure 11. There is good correlation between the predicted and actual results, showing that the natural flushing process is working in ground water in the alluvial aquifer.

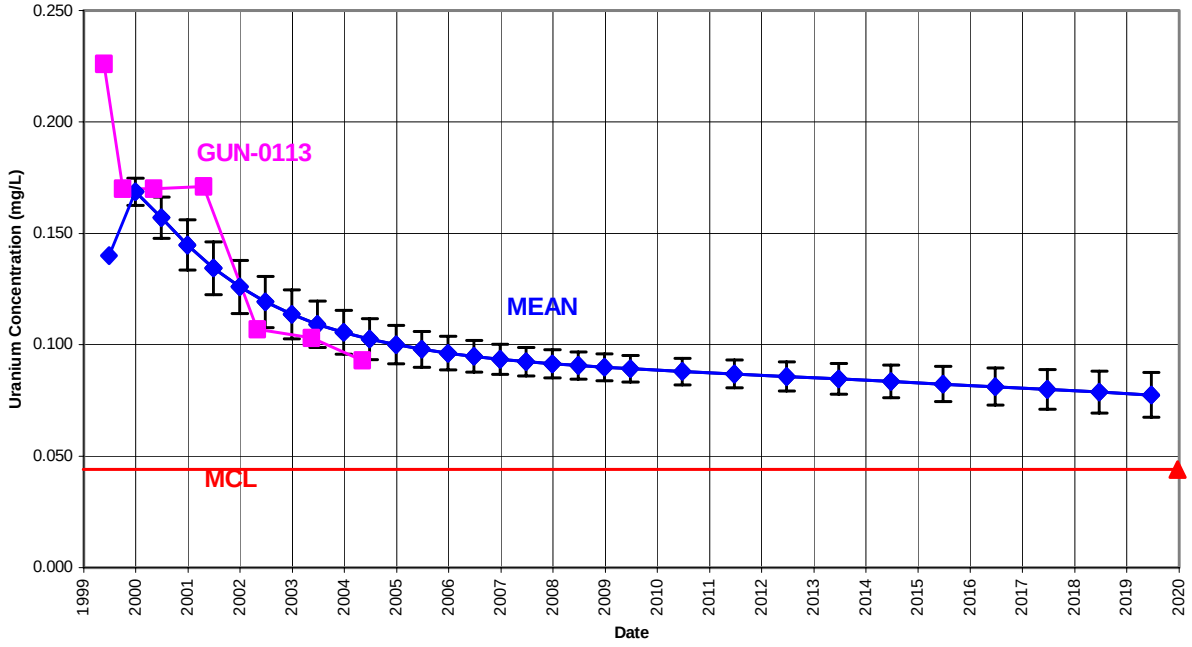

Figure 11. Uranium Concentration—Monitor Well 0113 at the Gunnison, Colorado, Site

4.0 References

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Appendix A

Ground Water Quality Data by Parameter for DOE Monitor Wells

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:16 am

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
Alkalinity, Total (As CaCO3	mg/L	0006	WL	05/13/2004	0001	10.00 - 15.00	224		FQ	#	-	-
	mg/L	0013	WL	05/13/2004	0001	11.00 - 16.00	227		F	#	-	-
	mg/L	0106	WL	05/13/2004	0001	34.00 - 39.00	45		F	#	-	-
	mg/L	0112	WL	05/13/2004	0001	40.00 - 45.00	92		F	#	-	-
	mg/L	0113	WL	05/13/2004	0001	41.00 - 46.00	182		F	#	-	-
	mg/L	0126	WL	05/13/2004	0001	54.00 - 59.00	232		F	#	-	-
	mg/L	0127	WL	05/13/2004	0001	94.00 - 99.00	234		F	#	-	-
	mg/L	0160	WL	05/11/2004	0001	51.00 - 56.00	258		F	#	-	-
	mg/L	0161	WL	05/11/2004	0001	93.00 - 98.00	202		F	#	-	-
	mg/L	0183	WL	05/13/2004	0001	93.00 - 98.00	277		F	#	-	-
	mg/L	0188	WL	05/12/2004	0001	53.00 - 58.00	169		F	#	-	-
	mg/L	0189	WL	05/12/2004	0001	93.00 - 98.00	887		FQ	#	-	-
Manganese	mg/L	0006	WL	05/13/2004	0001	10.00 - 15.00	0.170		FQ	#	7.7E-05	-
	mg/L	0012	WL	05/13/2004	0001	10.00 - 15.00	0.840		F	#	7.7E-05	-
	mg/L	0013	WL	05/13/2004	0001	11.00 - 16.00	0.00076	B	UF	#	7.7E-05	-
	mg/L	0013	WL	05/13/2004	0002	11.00 - 16.00	0.00008	B	UF	#	7.7E-05	-
	mg/L	0106	WL	05/13/2004	0001	34.00 - 39.00	8.600		F	#	7.7E-05	-
	mg/L	0112	WL	05/13/2004	0001	40.00 - 45.00	10.000		F	#	0.00039	-
	mg/L	0113	WL	05/13/2004	0001	41.00 - 46.00	2.100		F	#	7.7E-05	-
	mg/L	0126	WL	05/13/2004	0001	54.00 - 59.00	0.00034	B	UF	#	7.7E-05	-
	mg/L	0127	WL	05/13/2004	0001	94.00 - 99.00	0.019		F	#	7.7E-05	-
	mg/L	0160	WL	05/11/2004	0001	51.00 - 56.00	0.100		F	#	7.7E-05	-
	mg/L	0161	WL	05/11/2004	0001	93.00 - 98.00	0.0074		F	#	7.7E-05	-
	mg/L	0183	WL	05/13/2004	0001	93.00 - 98.00	0.00081	B	UF	#	7.7E-05	-
	mg/L	0188	WL	05/12/2004	0001	53.00 - 58.00	0.00007	U	F	#	7.7E-05	-
	mg/L	0189	WL	05/12/2004	0001	93.00 - 98.00	0.970		FQ	#	7.7E-05	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:16 am

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	0006	WL	05/13/2004	N001	10.00 - 15.00	95.7		FQ	#	-	-
	mV	0012	WL	05/13/2004	N001	10.00 - 15.00	-0.7		F	#	-	-
	mV	0013	WL	05/13/2004	N001	11.00 - 16.00	97		F	#	-	-
	mV	0106	WL	05/13/2004	N001	34.00 - 39.00	146.5		F	#	-	-
	mV	0112	WL	05/13/2004	N001	40.00 - 45.00	120.5		F	#	-	-
	mV	0113	WL	05/13/2004	N001	41.00 - 46.00	148		F	#	-	-
	mV	0126	WL	05/13/2004	N001	54.00 - 59.00	118.2		F	#	-	-
	mV	0127	WL	05/13/2004	N001	94.00 - 99.00	-44.5		F	#	-	-
	mV	0160	WL	05/11/2004	N001	51.00 - 56.00	87		F	#	-	-
	mV	0161	WL	05/11/2004	N001	93.00 - 98.00	105		F	#	-	-
	mV	0183	WL	05/13/2004	N001	93.00 - 98.00	31.9		F	#	-	-
	mV	0188	WL	05/12/2004	N001	53.00 - 58.00	152.4		F	#	-	-
	mV	0189	WL	05/12/2004	N001	93.00 - 98.00	-11		FQ	#	-	-
pH	s.u.	0006	WL	05/13/2004	N001	10.00 - 15.00	7.07		FQ	#	-	-
	s.u.	0012	WL	05/13/2004	N001	10.00 - 15.00	6.97		F	#	-	-
	s.u.	0013	WL	05/13/2004	N001	11.00 - 16.00	7.40		F	#	-	-
	s.u.	0106	WL	05/13/2004	N001	34.00 - 39.00	6.19		F	#	-	-
	s.u.	0112	WL	05/13/2004	N001	40.00 - 45.00	6.13		F	#	-	-
	s.u.	0113	WL	05/13/2004	N001	41.00 - 46.00	6.97		F	#	-	-
	s.u.	0126	WL	05/13/2004	N001	54.00 - 59.00	7.23		F	#	-	-
	s.u.	0127	WL	05/13/2004	N001	94.00 - 99.00	7.33		F	#	-	-
	s.u.	0160	WL	05/11/2004	N001	51.00 - 56.00	6.84		F	#	-	-
	s.u.	0161	WL	05/11/2004	N001	93.00 - 98.00	6.84		F	#	-	-
	s.u.	0183	WL	05/13/2004	N001	93.00 - 98.00	6.79		F	#	-	-
	s.u.	0188	WL	05/12/2004	N001	53.00 - 58.00	7.20		F	#	-	-
	s.u.	0189	WL	05/12/2004	N001	93.00 - 98.00	6.37		FQ	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:16 am

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	0006	WL	05/13/2004	N001	10.00 - 15.00	2300		FQ	#	-	-
	umhos/cm	0012	WL	05/13/2004	N001	10.00 - 15.00	1446		F	#	-	-
	umhos/cm	0013	WL	05/13/2004	N001	11.00 - 16.00	557		F	#	-	-
	umhos/cm	0106	WL	05/13/2004	N001	34.00 - 39.00	1899		F	#	-	-
	umhos/cm	0112	WL	05/13/2004	N001	40.00 - 45.00	1150		F	#	-	-
	umhos/cm	0113	WL	05/13/2004	N001	41.00 - 46.00	615		F	#	-	-
	umhos/cm	0126	WL	05/13/2004	N001	54.00 - 59.00	511		F	#	-	-
	umhos/cm	0127	WL	05/13/2004	N001	94.00 - 99.00	1120		F	#	-	-
	umhos/cm	0160	WL	05/11/2004	N001	51.00 - 56.00	840		F	#	-	-
	umhos/cm	0161	WL	05/11/2004	N001	93.00 - 98.00	8255		F	#	-	-
	umhos/cm	0183	WL	05/13/2004	N001	93.00 - 98.00	1138		F	#	-	-
	umhos/cm	0188	WL	05/12/2004	N001	53.00 - 58.00	873		F	#	-	-
	umhos/cm	0189	WL	05/12/2004	N001	93.00 - 98.00	2083		FQ	#	-	-
Sulfate	mg/L	0006	WL	05/13/2004	0001	10.00 - 15.00	1200		FQ	#	10	-
	mg/L	0012	WL	05/13/2004	0001	10.00 - 15.00	580		F	#	10	-
	mg/L	0013	WL	05/13/2004	0001	11.00 - 16.00	41		F	#	2.5	-
	mg/L	0013	WL	05/13/2004	0002	11.00 - 16.00	41		F	#	2.5	-
	mg/L	0106	WL	05/13/2004	0001	34.00 - 39.00	1100		F	#	10	-
	mg/L	0112	WL	05/13/2004	0001	40.00 - 45.00	520		F	#	5	-
	mg/L	0113	WL	05/13/2004	0001	41.00 - 46.00	120		F	#	2.5	-
	mg/L	0126	WL	05/13/2004	0001	54.00 - 59.00	26		F	#	2.5	-
	mg/L	0127	WL	05/13/2004	0001	94.00 - 99.00	370		F	#	5	-
	mg/L	0160	WL	05/11/2004	0001	51.00 - 56.00	110		F	#	5	-
	mg/L	0161	WL	05/11/2004	0001	93.00 - 98.00	150		F	#	5	-
	mg/L	0183	WL	05/13/2004	0001	93.00 - 98.00	340		F	#	5	-
	mg/L	0188	WL	05/12/2004	0001	53.00 - 58.00	230		F	#	5	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:16 am

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	0189	WL	05/12/2004	0001	93.00 - 98.00	150		FQ	#	10	-
Temperature	C	0006	WL	05/13/2004	N001	10.00 - 15.00	9.74		FQ	#	-	-
	C	0012	WL	05/13/2004	N001	10.00 - 15.00	8.39		F	#	-	-
	C	0013	WL	05/13/2004	N001	11.00 - 16.00	7.60		F	#	-	-
	C	0106	WL	05/13/2004	N001	34.00 - 39.00	9.68		F	#	-	-
	C	0112	WL	05/13/2004	N001	40.00 - 45.00	9.24		F	#	-	-
	C	0113	WL	05/13/2004	N001	41.00 - 46.00	8.68		F	#	-	-
	C	0126	WL	05/13/2004	N001	54.00 - 59.00	6.45		F	#	-	-
	C	0127	WL	05/13/2004	N001	94.00 - 99.00	8.12		F	#	-	-
	C	0160	WL	05/11/2004	N001	51.00 - 56.00	8.46		F	#	-	-
	C	0161	WL	05/11/2004	N001	93.00 - 98.00	8.63		F	#	-	-
	C	0183	WL	05/13/2004	N001	93.00 - 98.00	8.89		F	#	-	-
	C	0188	WL	05/12/2004	N001	53.00 - 58.00	7.32		F	#	-	-
	C	0189	WL	05/12/2004	N001	93.00 - 98.00	7.10		FQ	#	-	-
Turbidity	NTU	0006	WL	05/13/2004	N001	10.00 - 15.00	3.81		FQ	#	-	-
	NTU	0012	WL	05/13/2004	N001	10.00 - 15.00	2.01		F	#	-	-
	NTU	0013	WL	05/13/2004	N001	11.00 - 16.00	0.48		F	#	-	-
	NTU	0106	WL	05/13/2004	N001	34.00 - 39.00	0.23		F	#	-	-
	NTU	0112	WL	05/13/2004	N001	40.00 - 45.00	0.61		F	#	-	-
	NTU	0113	WL	05/13/2004	N001	41.00 - 46.00	1.10		F	#	-	-
	NTU	0126	WL	05/13/2004	N001	54.00 - 59.00	1.89		F	#	-	-
	NTU	0127	WL	05/13/2004	N001	94.00 - 99.00	1.44		F	#	-	-
	NTU	0160	WL	05/11/2004	N001	51.00 - 56.00	9.00		F	#	-	-
	NTU	0161	WL	05/11/2004	N001	93.00 - 98.00	6.64		F	#	-	-
	NTU	0183	WL	05/13/2004	N001	93.00 - 98.00	1.20		F	#	-	-
	NTU	0188	WL	05/12/2004	N001	53.00 - 58.00	0.370		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:16 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0189	WL	05/12/2004	N001	93.00 - 98.00	8.24		FQ	#	-	-
Uranium	mg/L	0006	WL	05/13/2004	0001	10.00 - 15.00	0.680		FQ	#	6.9E-05	-
	mg/L	0012	WL	05/13/2004	0001	10.00 - 15.00	0.430		F	#	6.9E-05	-
	mg/L	0013	WL	05/13/2004	0001	11.00 - 16.00	0.024	E	F	#	6.9E-06	-
	mg/L	0013	WL	05/13/2004	0002	11.00 - 16.00	0.024		F	#	6.9E-06	-
	mg/L	0106	WL	05/13/2004	0001	34.00 - 39.00	0.0011		F	#	6.9E-06	-
	mg/L	0112	WL	05/13/2004	0001	40.00 - 45.00	0.0084		F	#	6.9E-06	-
	mg/L	0113	WL	05/13/2004	0001	41.00 - 46.00	0.093		F	#	6.9E-06	-
	mg/L	0126	WL	05/13/2004	0001	54.00 - 59.00	0.0098		F	#	6.9E-06	-
	mg/L	0127	WL	05/13/2004	0001	94.00 - 99.00	0.026		F	#	6.9E-06	-
	mg/L	0160	WL	05/11/2004	0001	51.00 - 56.00	0.019		F	#	6.9E-06	-
	mg/L	0161	WL	05/11/2004	0001	93.00 - 98.00	0.013		F	#	6.9E-06	-
	mg/L	0183	WL	05/13/2004	0001	93.00 - 98.00	0.056		F	#	6.9E-06	-
	mg/L	0188	WL	05/12/2004	0001	53.00 - 58.00	0.033		F	#	6.9E-06	-
	mg/L	0189	WL	05/12/2004	0001	93.00 - 98.00	0.014		FQ	#	6.9E-06	-

GROUND WATER QUALITY DATA BY PARAMETER WITH DEPTH (USEE200) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:16 am

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='GUN01' AND location_code in('0006','0012','0013','0106','0112','0113','0126','0127','0160','0161','0183','0188','0189') AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #5/1/2004# and #5/30/2004#

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: 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.	Q	Qualitative result due to sampling technique	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

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

Appendix B

Ground Water Quality Data by Parameter for Domestic Wells

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:31 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0080	WL	05/12/2004	N001	NR		119			#	-	-
	mg/L	0081	WL	05/12/2004	N001	NR		149		F	#	-	-
	mg/L	0082	WL	05/12/2004	N001	NR		226		F	#	-	-
	mg/L	0468	WL	05/12/2004	N001	AL	D	74		F	#	-	-
	mg/L	0469	WL	05/11/2004	N001	AL	D	98			#	-	-
	mg/L	0665	WL	05/11/2004	N001	AL	C	114			#	-	-
	mg/L	0667	WL	05/12/2004	N001	AL	N	123			#	-	-
	mg/L	0683	WL	05/11/2004	N001	NR	N	101			#	-	-
	mg/L	0685	WL	05/11/2004	N001	NR	N	106			#	-	-
Manganese	mg/L	0080	WL	05/12/2004	N001	NR		0.200			#	7.7E-05	-
	mg/L	0081	WL	05/12/2004	N001	NR		0.240		F	#	7.7E-05	-
	mg/L	0082	WL	05/12/2004	N001	NR		0.200		F	#	7.7E-05	-
	mg/L	0468	WL	05/12/2004	N001	AL	D	0.550		F	#	7.7E-05	-
	mg/L	0469	WL	05/11/2004	N001	AL	D	0.014	E		#	7.7E-05	-
	mg/L	0665	WL	05/11/2004	N001	AL	C	0.015			#	7.7E-05	-
	mg/L	0667	WL	05/12/2004	N001	AL	N	0.0014	B		#	7.7E-05	-
	mg/L	0683	WL	05/11/2004	N001	NR	N	0.0014	B		#	7.7E-05	-
	mg/L	0683	WL	05/11/2004	N002	NR	N	0.0014	B		#	7.7E-05	-
	mg/L	0685	WL	05/11/2004	N001	NR	N	0.00013	B	U	#	7.7E-05	-
Oxidation Reduction Potent	mV	0080	WL	05/12/2004	N001	NR		-106.6			#	-	-
	mV	0081	WL	05/12/2004	N001	NR		-202.3		F	#	-	-
	mV	0082	WL	05/12/2004	N001	NR		-241.2		F	#	-	-
	mV	0468	WL	05/12/2004	N001	AL	D	-319.4		F	#	-	-
	mV	0469	WL	05/11/2004	N001	AL	D	84			#	-	-
	mV	0665	WL	05/11/2004	N001	AL	C	92			#	-	-
	mV	0667	WL	05/12/2004	N001	AL	N	143.5			#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:31 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0683	WL	05/11/2004	N001	NR	N	112			#	-	-
	mV	0685	WL	05/11/2004	N001	NR	N	28			#	-	-
pH	s.u.	0080	WL	05/12/2004	N001	NR		7.43			#	-	-
	s.u.	0081	WL	05/12/2004	N001	NR		7.66		F	#	-	-
	s.u.	0082	WL	05/12/2004	N001	NR		7.89		F	#	-	-
	s.u.	0468	WL	05/12/2004	N001	AL	D	8.71		F	#	-	-
	s.u.	0469	WL	05/11/2004	N001	AL	D	7.20			#	-	-
	s.u.	0665	WL	05/11/2004	N001	AL	C	7.33			#	-	-
	s.u.	0667	WL	05/12/2004	N001	AL	N	7.25			#	-	-
	s.u.	0683	WL	05/11/2004	N001	NR	N	7.53			#	-	-
	s.u.	0685	WL	05/11/2004	N001	NR	N	7.46			#	-	-
Specific Conductance	umhos/cm	0080	WL	05/12/2004	N001	NR		489			#	-	-
	umhos/cm	0081	WL	05/12/2004	N001	NR		513		F	#	-	-
	umhos/cm	0082	WL	05/12/2004	N001	NR		524		F	#	-	-
	umhos/cm	0468	WL	05/12/2004	N001	AL	D	329		F	#	-	-
	umhos/cm	0469	WL	05/11/2004	N001	AL	D	378			#	-	-
	umhos/cm	0665	WL	05/11/2004	N001	AL	C	350			#	-	-
	umhos/cm	0667	WL	05/12/2004	N001	AL	N	310			#	-	-
	umhos/cm	0683	WL	05/11/2004	N001	NR	N	328			#	-	-
	umhos/cm	0685	WL	05/11/2004	N001	NR	N	345			#	-	-
Sulfate	mg/L	0080	WL	05/12/2004	N001	NR		19			#	0.5	-
	mg/L	0081	WL	05/12/2004	N001	NR		12		F	#	0.5	-
	mg/L	0082	WL	05/12/2004	N001	NR		18		F	#	2.5	-
	mg/L	0468	WL	05/12/2004	N001	AL	D	76		F	#	0.5	-
	mg/L	0469	WL	05/11/2004	N001	AL	D	28			#	2.5	-
	mg/L	0665	WL	05/11/2004	N001	AL	C	25			#	2.5	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:31 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	0667	WL	05/12/2004	N001	AL	N	26			#	2.5	-
	mg/L	0683	WL	05/11/2004	N001	NR	N	25			#	2.5	-
	mg/L	0683	WL	05/11/2004	N002	NR	N	26			#	2.5	-
	mg/L	0685	WL	05/11/2004	N001	NR	N	26			#	2.5	-
Temperature	C	0080	WL	05/12/2004	N001	NR		9.75			#	-	-
	C	0081	WL	05/12/2004	N001	NR		10.26		F	#	-	-
	C	0082	WL	05/12/2004	N001	NR		7.84		F	#	-	-
	C	0468	WL	05/12/2004	N001	AL	D	5.82		F	#	-	-
	C	0469	WL	05/11/2004	N001	AL	D	10.39			#	-	-
	C	0665	WL	05/11/2004	N001	AL	C	8.39			#	-	-
	C	0667	WL	05/12/2004	N001	AL	N	7.93			#	-	-
	C	0683	WL	05/11/2004	N001	NR	N	10.33			#	-	-
	C	0685	WL	05/11/2004	N001	NR	N	18.36			#	-	-
Turbidity	NTU	0080	WL	05/12/2004	N001	NR		2.60			#	-	-
	NTU	0081	WL	05/12/2004	N001	NR		45.3		F	#	-	-
	NTU	0082	WL	05/12/2004	N001	NR		131		F	#	-	-
	NTU	0468	WL	05/12/2004	N001	AL	D	52.8		F	#	-	-
	NTU	0469	WL	05/11/2004	N001	AL	D	3.88			#	-	-
	NTU	0665	WL	05/11/2004	N001	AL	C	0.86			#	-	-
	NTU	0667	WL	05/12/2004	N001	AL	N	3.96			#	-	-
	NTU	0683	WL	05/11/2004	N001	NR	N	0.53			#	-	-
	NTU	0685	WL	05/11/2004	N001	NR	N	0.59			#	-	-
Uranium	mg/L	0080	WL	05/12/2004	N001	NR		0.0045			#	6.9E-06	-
	mg/L	0081	WL	05/12/2004	N001	NR		0.0037		F	#	6.9E-06	-
	mg/L	0082	WL	05/12/2004	N001	NR		0.014		F	#	6.9E-06	-
	mg/L	0468	WL	05/12/2004	N001	AL	D	0.0032		F	#	6.9E-06	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:31 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0469	WL	05/11/2004	N001	AL	D	0.0018	E		#	6.9E-06	-
	mg/L	0665	WL	05/11/2004	N001	AL	C	0.0028			#	6.9E-06	-
	mg/L	0667	WL	05/12/2004	N001	AL	N	0.0024			#	6.9E-06	-
	mg/L	0683	WL	05/11/2004	N001	NR	N	0.0014			#	6.9E-06	-
	mg/L	0683	WL	05/11/2004	N002	NR	N	0.0015			#	6.9E-06	-
	mg/L	0685	WL	05/11/2004	N001	NR	N	0.0013			#	6.9E-06	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:31 am

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

RECORDS: SELECTED FROM USEE200 WHERE site_code='GUN01' AND location_code in('0080','0081','0082','0468','0469','0665','0667','0683','0685') AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #5/1/2004# and #5/30/2004#

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

LOCATION TYPES: WL WELL

ZONES OF COMPLETION:

AL ALLUVIUM
NR NO RECOVERY OF DATA FOR CLASSIFYING

FLOW CODES: C CROSS GRADIENT D DOWN GRADIENT N UNKNOWN

LAB QUALIFIERS:

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

DATA QUALIFIERS:

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

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

Appendix C

Surface Water Quality Data by Parameter

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:31 am

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA.	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0248	05/12/2004	0001	98			#	-	-
	mg/L	0777	05/12/2004	0001	117			#	-	-
	mg/L	0780	05/13/2004	0001	158			#	-	-
	mg/L	0792	05/11/2004	0001	64			#	-	-
	mg/L	0795	05/11/2004	0001	67			#	-	-
Manganese	mg/L	0248	05/12/2004	0001	0.043			#	7.7E-05	-
	mg/L	0777	05/12/2004	0001	0.053			#	7.7E-05	-
	mg/L	0780	05/13/2004	0001	0.062			#	7.7E-05	-
	mg/L	0792	05/11/2004	0001	0.011			#	7.7E-05	-
	mg/L	0795	05/11/2004	0001	0.011	E		#	7.7E-05	-
Oxidation Reduction Potent	mV	0248	05/12/2004	N001	-72.5			#	-	-
	mV	0777	05/12/2004	N001	-13.0			#	-	-
	mV	0780	05/13/2004	N001	105.6			#	-	-
	mV	0792	05/11/2004	N001	126			#	-	-
	mV	0795	05/11/2004	N001	181			#	-	-
pH	s.u.	0248	05/12/2004	N001	8.21			#	-	-
	s.u.	0777	05/12/2004	N001	7.87			#	-	-
	s.u.	0780	05/13/2004	N001	7.99			#	-	-
	s.u.	0792	05/11/2004	N001	8.51			#	-	-
	s.u.	0795	05/11/2004	N001	8.49			#	-	-
Specific Conductance	umhos/cm	0248	05/12/2004	N001	292			#	-	-
	umhos/cm	0777	05/12/2004	N001	344			#	-	-
	umhos/cm	0780	05/13/2004	N001	665			#	-	-
	umhos/cm	0792	05/11/2004	N001	265			#	-	-
	umhos/cm	0795	05/11/2004	N001	247			#	-	-
Sulfate	mg/L	0248	05/12/2004	0001	24			#	0.5	-
	mg/L	0777	05/12/2004	0001	25			#	0.5	-
	mg/L	0780	05/13/2004	0001	160			#	2.5	-
	mg/L	0792	05/11/2004	0001	14			#	0.5	-
	mg/L	0795	05/11/2004	0001	14			#	0.5	-
Temperature	C	0248	05/12/2004	N001	9.84			#	-	-
	C	0777	05/12/2004	N001	9.03			#	-	-
	C	0780	05/13/2004	N001	12.28			#	-	-
	C	0792	05/11/2004	N001	12.26			#	-	-
	C	0795	05/11/2004	N001	11.49			#	-	-
Turbidity	NTU	0248	05/12/2004	N001	21.7			#	-	-
	NTU	0777	05/12/2004	N001	18.7			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 9/13/2004 11:31 am

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0780	05/13/2004	N001	25.9			#	-	-
	NTU	0792	05/11/2004	N001	13.4			#	-	-
	NTU	0795	05/11/2004	N001	14.6			#	-	-
Uranium	mg/L	0248	05/12/2004	0001	0.0027			#	6.9E-06	-
	mg/L	0777	05/12/2004	0001	0.0028			#	6.9E-06	-
	mg/L	0780	05/13/2004	0001	0.044			#	6.9E-06	-
	mg/L	0792	05/11/2004	0001	0.0003			#	6.9E-06	-
	mg/L	0795	05/11/2004	0001	0.0003			#	6.9E-06	-

RECORDS: SELECTED FROM USEE800 WHERE site_code='GUN01' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #5/1/2004# and #5/30/2004#

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: 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).
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DATA QUALIFIERS:

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

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