

Table C-58: Rose Creek Drainage Groundwater Quality
2010 QA/QC Duplicates - General Parameters

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Chloride mg/L	CN(wad) mg/L	CNTHIO mg/L	CO3 mg/L	Colour TCU	COND µmho/cm	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH (blank)	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU
X26	6/13/2010	M	<0.5	288	340	<0.5		3040	4			<0.5		4190		410	<0.5	<0.5	6.4	3000				21
X26	6/13/2010	DUPLICATE	<0.5	276	350	<0.5		3020	4.2			<0.5		4200		420	<0.5	<0.5	6.5	3000				34
RPD (%)			N/A	4.26	2.90	N/A	N/A	0.66	4.88	N/A	N/A	N/A	N/A	0.24	N/A	2.41	N/A	N/A	0.10	0.00	N/A	N/A	47.27	N/A
Comments																								
Action																								
Result																								
P03-06-2	6/14/2010	M	71.2	731	<0.5	<0.5		1980	2.9			<0.5		4000		<0.5	<0.5	4.2	3200					910
P03-06-2	6/14/2010	DUPLICATE	<0.5	2140	<0.5	<0.5		1650	4.5			<0.5		4500		<0.5	<0.5	4.4	3900					2300
RPD (%)			N/A	98.15	N/A	N/A	N/A	18.18	43.24	N/A	N/A	N/A	N/A	11.76	N/A	N/A	N/A	N/A	0.20	19.72	N/A	N/A	86.60	N/A
Comments			Both values > PQL and correctly entered into emLine.																					
Action			Request Retest																					
Result			Retest performed, see results below.																					
Discrepancy between values remains. Retest not carried out because remainder of samples had been discarded.																								
P03-06-2 Retest	6/14/2010	M		700.00																				
P03-06-2 Retest	6/14/2010	DUPLICATE		2140.00																				
RPD (%)			N/A	101.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	N/A	N/A	N/A	N/A	N/A
Comments			Main sample retested but request for retest on duplicate sample submitted too late. Remainder of sample had been discarded.																					
Action			Let Value Stand																					
Result			New value entered into emLine.																					
P96-6	6/15/2010	M	<0.5	43.5	320	<0.5		724	0.7			<0.5		1170		390	<0.5	7.6	350					300
P96-6	6/15/2010	DUPLICATE	<0.5	37.4	320	<0.5		703	0.7			<0.5		1190		390	<0.5	7.5	350					410
RPD (%)			N/A	15.08	0.00	N/A	N/A	2.94	0.00	N/A	N/A	N/A	N/A	1.69	N/A	0.00	N/A	N/A	0.10	0.00	N/A	N/A	30.99	N/A
Comments																								
Action																								
Result																								
P09-SIS3	7/24/2010	M	<0.5	860.00	170.00	<0.5		5820.00	4.90			<0.5		7720.00		210.00	<0.5	6.65	7200.00					1600.00
P09-SIS3	7/24/2010	DUPLICATE	<0.5	862.00	170.00	<0.5		5930.00	4.80			<0.5		7760.00		210.00	<0.5	6.60	7700.00					840.00
RPD (%)			N/A	0.23	0.00	N/A	N/A	1.87	2.06	N/A	N/A	N/A	N/A	0.52	N/A	0.00	N/A	N/A	0.05	6.71	N/A	N/A	62.30	N/A
Comments			Both values > PQL and correctly entered into emLine.																					
Action			Let Value Stand																					
Result			Discrepancy between values remains. Retest not carried out because remainder of samples had been discarded.																					
P01-02A	9/8/2010	M	<0.5	14.80	260.00	<0.5		423.00	<0.5			<0.5		794.00		310.00	<0.5	7.95	180.00					24.00
P01-02A	9/8/2010	DUPLICATE	<0.5	8.10	260.00	<0.5		418.00	<0.5			<0.5		803.00		310.00	<0.5	7.81	160.00					39.00
RPD (%)			N/A	58.52	0.00	N/A	N/A	1.19	N/A	N/A	N/A	N/A	N/A	1.13	N/A	0.00	N/A	N/A	0.14	11.76	N/A	N/A	47.62	N/A
Comments			Both values > PQL and correctly entered into emLine.																					
Action			Request Retest																					
Result			Retest performed, see results below.																					
RPD > 50%																								

Station	Date	Sample Type	Acid(pH4.5) mg/L	Acid(pH8.3) mg/L	ALK mg/L	ALKPP mg/L	CaCO3 mg/L	CaCO3-d mg/L	Chloride mg/L	CN(wad) mg/L	CNTHIO mg/L	CO3 mg/L	Colour TCU	COND µmho/cm	DOC mg/L	HCO3 mg/L	NH3 mg/L	OH mg/L	pH (blank)	SO4-d mg/L	TDS mg/L	TOC mg/L	TSS mg/L	TURB NTU		
P01-02A Retest	9/8/2010	M		3.20																						
P01-02A Retest	9/8/2010	DUPLICATE		3.40																						
RPD (%)			N/A	6.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	N/A	N/A	N/A	N/A	N/A		
Comments			Retest for September 8 P01-02A sample and duplicate. Both values > PQL and correctly entered into emLine.																							
Action			Let Value Stand																							
Result			New values entered into emLine.																							
P03-04-6	9/20/2010	M	<0.5	2900.00	85.00	<0.5		1760.00	0.60			<0.5		5440.00		100.00		<0.5	6.22	5200.00				130.00		
P03-04-6	9/20/2010	DUPLICATE	<0.5	2850.00	31.00	<0.5		1730.00	0.90			<0.5		5370.00		38.00		<0.5	5.89	5100.00				110.00		
RPD (%)			N/A	1.74	93.10	N/A	N/A	1.72	40.00	N/A	N/A	N/A	N/A	1.30	N/A	89.86	N/A	N/A	0.33	1.94	N/A	N/A	16.67	N/A		
Comments						Both values > PQL and correctly entered into emLine.									Both values > PQL and correctly entered into emLine.											
Action						Request Retest									Request Retest											
Result						Retest performed, see results below.									Retest performed, see results below.											
P03-04-6 Retest	9/20/2010	M			<0.5											<0.5										
P03-04-6 Retest	9/20/2010	DUPLICATE			<0.5											<0.5										
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	N/A	N/A	N/A	N/A	N/A		
Comments						Retest for September 20 P03-04-6 sample and duplicate. Both values > PQL and correctly entered into emLine.									Retest for September 20 P03-04-6 sample and duplicate. Both values > PQL and correctly entered into emLine.											
Action						Let Value Stand									Let Value Stand											
Result						New values entered into emLine.									New values entered into emLine.											
P09-SIS2	11/2/2010	M	<0.5	917.00	190.00	<0.5		7270.00	6.40			<0.5		9340.00		230.00		<0.5	6.93	8800.00				1500.00		
P09-SIS2	11/2/2010	DUPLICATE	<0.5	936.00	190.00	<0.5		7280.00	6.20			<0.5		9300.00		240.00		<0.5	6.92	9500.00				1300.00		
RPD (%)			N/A	2.05	0.00	N/A	N/A	0.14	3.17	N/A	N/A	N/A	N/A	0.43	N/A	4.26	N/A	N/A	0.01	7.65	N/A	N/A	14.29	N/A		
Comments																										
Action																										
Result																										

RPD > 50%

Table C-59: Rose Creek Drainage Groundwater Quality
2010 QA/QC Duplicates - Dissolved Metals



Station	Date	Sample Type	Ag-d µg/L	Al-d µg/L	As-d µg/L	Ba-d µg/L	B-d µg/L	Be-d µg/L	Bi-d µg/L	Ca-d mg/L	Cd-d µg/L	Co-d µg/L	Cr-d µg/L	Cu-d µg/L	Fe-d µg/L	Hg-d µg/L	K-d mg/L	Li-d mg/L	Mg-d mg/L	Mn-d µg/L	Mo-d µg/L	Na-d mg/L	Ni-d µg/L	Pb-d µg/L	Sb-d µg/L	S-d mg/L	Se-d µg/L	Si-d µg/L	Sn-d µg/L	Sr-d µg/L	Ti-d µg/L	Tl-d µg/L	U-d µg/L	V-d µg/L	Zn-d µg/L	Zr-d µg/L	
X26	6/13/2010	M	0.08		13	3.4	7	<100	0.3	<2	563	27	504	<2	0.9	85700	16.2	0.274	397	14600	<2	63.9	1380	59	<1	1030	<0.2	7050	<10	3410	<10	1.5	14.8	<10	92900	<1	
X26	6/13/2010	DUPLICATE	0.05		7	3.4	7	<50	0.3	<1	551	25.8	516	<1	1.1	84000	17.1	0.267	399	14600	<1	64.7	1360	55.8	0.9	1040	<0.1	6740	<5	3420	<5	1.57	14.8	<5	85500	<0.5	
	RPD (%)		46.15	60.00	0.00	0.00	N/A	0.00	N/A	2.15	4.55	2.35	N/A	20.00	2.00	N/A	5.41	2.59	0.50	0.00	N/A	1.24	1.46	5.57	N/A	0.97	N/A	4.50	N/A	0.29	N/A	4.56	0.00	N/A	8.30	N/A	
	Comments		Both values correctly entered into emLine; however, neither value > PQL. Therefore, RPD analysis not valid in this case.																																		
	Action		Let Value Stand																																		
	Result		Discrepancy between values remains.																																		
P03-06-2	6/14/2010	M	<0.04		128	0.4	14	<100	0.3	<2	529	20.2	863	<2	0.7	444000	5.7	0.049	161	105000	3	33.2	1000	2.8	<1	1090	<0.2	19700	<10	1760	<10	<0.1	1.6	<10	8010	<1	
P03-06-2	6/14/2010	DUPLICATE	<0.08		451	<0.4	11	<200	1	<4	412	47.6	838	<4	<0.8	986000	6.5	0.079	152	87800	<4	19.7	861	1.7	<2	1270	<0.4	21600	<20	1520	<20	<0.2	2.3	<20	13900	<2	
	RPD (%)		N/A	111.57	N/A	24.00	N/A	107.69	N/A	24.87	80.83	2.94	N/A	N/A	75.80	N/A	13.11	46.88	5.75	17.84	N/A	51.04	14.94	48.89	N/A	15.25	N/A	9.20	N/A	14.63	N/A	N/A	35.90	N/A	53.77	N/A	
	Comments		Both values > PQL and correctly entered into emLine.																																		
	Action		Request Retest																																		
	Result		Retest performed, see results below.																																		
P03-06-2 Retest	6/14/2010	M			201.00																																
P03-06-2 Retest	6/14/2010	DUPLICATE			483.00																																
	RPD (%)		N/A	82.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Comments		Retest for June 14 P03-06-2 sample and duplicate. Both values > PQL and correctly entered into emLine.																																		
	Action		Let Value Stand																																		
	Result		New values entered into emLine.																																		
P96-6	6/15/2010	M	<0.005		2.6	0.11	18.7	<50	0.07	<0.005	188	0.219	0.023	<0.1	0.65	7	4.55	0.0374	61.5	2.24	<0.05	7.62	13.9	0.132	<0.02	153	2.89	10600	<0.01	619	<0.5	0.003	26.1	<0.2	419	<0.1	
P96-6	6/15/2010	DUPLICATE	<0.005		2.8	0.09	18.2	<50	0.07	<0.005	185	0.228	0.017	<0.1	0.6	8	4.42	0.0364	58.9	2.04	<0.05	7.26	13	0.204	<0.02	147	2.84	10100	<0.01	610	<0.5	0.003	25.5	<0.2	400	<0.1	
	RPD (%)		N/A	7.41	20.00	2.71	N/A	0.00	N/A	1.61	4.03	30.00	N/A	8.00	13.33	N/A	2.90	2.71	4.32	9.35	N/A	4.84	6.69	42.86	N/A	4.00	1.75	4.83	N/A	1.46	N/A	0.00	2.33	N/A	4.64	N/A	
	Comments																																				
	Action																																				
	Result																																				
P09-SIS3	7/24/2010	M	0.40		205.00	2.00	24.00	<500	<1	<10	341.00	141.00	305.00	<10	17.00	266.00	15.00	0.20	1210.00	101000.00	<10	41.40	2900.00	<2	<5	2350.00	<1	12100.00	<50	1980.0	<50	<0.5	3.00	<50	493000.00	<5	
P09-SIS3	7/24/2010	DUPLICATE	0.40		348.00	<1	24.00	<500	<1	<10	384.00	139.00	292.00	<10	18.00	480.00	15.10	0.20	1210.00	99100.00	<10	41.60	2920.00	3.00	<5	2370.00	<1	13700.00	<50	1930.0	<50	<0.5	3.00	<50	494000.00	<5	
	RPD (%)		0.00	51.72	N/A	0.00	N/A	N/A	N/A	11.86	1.43	4.36	N/A	5.71	57.37	N/A	0.66	1.50	0.00	1.90	N/A	0.48	0.69	N/A	N/A	0.85	N/A	12.40	N/A	2.56	N/A	N/A	0.00	N/A	0.20	N/A	
	Comments		Both values > PQL and correctly entered into emLine.																																		
	Action		Let Value Stand																																		
	Result		Discrepancy between values remains.																																		
P01-02A	9/8/2010	M	<0.005		1.80	0.60	67.20	<50	<0.01	<0.005	117.00	0.09	0.70	<0.1	0.46	22.00	3.12	0.01	31.50	1300.00	1.48	9.07	2.56	0.10	0.04	61.00	<0.04	4950.00	<0.01	345.0	<0.5	0.012	2.96	<0.2	5.10	<0.1	
P01-02A	9/8/2010	DUPLICATE	<0.005		1.90	0.64	68.70	<50	<0.01	<0.005	118.00	0.10	0.70	<0.1	0.44	23.00	3.13	0.01	30.10	1340.00	1.55	8.86	2.53	0.09	0.04	65.00	<0.04	4990.00	<0.01	347.0	<0.5	0.012	2.97	<0.2	4.80	<0.1	
	RPD (%)		N/A	5.41	6.45	2.21	N/A	N/A	N/A	0.85	8.42	0.00	N/A	4.44	4.44	N/A	0.32	1.36	4.55	3.03	4.62	2.34	1.18	5.41	0.00	6.35	N/A	0.80	N/A	0.58	N/A	0.00	0.34	N/A	6.06	N/A	
	Comments																																				
	Action																																				
	Result																																				
P03-04-6	9/20/2010	M	<0.2		<30.0	15.00	<10.0	<500.0	<1.0	<10.0	500.00	<0.1	53.00	12.00	<2.0	1650000.00	10.60	<0.05	124.00	14900.00	<10.0	87.60	133.00	<2.0	<5.0	1630.00	<1.0	12000.00	<50.0	3060.0	<50.0	<0.5	3.00	<50.0	1970.00	<5.0	
P03-04-6	9/20/2010	DUPLICATE	<0.2		<30.0	16.00	<10.0	<500.0	<1.0	<10.0	491.00	<0.1	52.00	<10.0	<2.0	1620000.00	10.40	<0.05	123.00	14700.00	<10.0	89.40	122.00	<2.0	<5.0	1600.00	<1.0	11700.00	<50.0	3070.0	<50.0	<0.5	3.00	<50.0	1840.00	<5.0	
	RPD (%)		N/A	N/A	6.45	N/A	N/A	N/A	N/A	1.82	N/A	1.90	N/A	N/A	1.83	N/A	1.90	N/A	0.81	1.35	N/A	2.03	8.63	N/A	N/A	1.86	N/A	2.53	N/A	0.33	N/A	N/A	0.00	N/A	6.82	N/A	
	Comments																																				
	Action																																				
	Result																																				
P09-SIS2	11/2/2010	M	0.60		<60	<2	28.00	<1000	<2	<20	459.00	249.00	1180.00	<20	7.00	1130.00	15.00	0.18	1490.00	149000.00	<20	44.00	3560.00	<4	<10	3190.00	<2	12900.00	<100	2110.0	<100	<1	6.00	<100	667000.00	<10	
P09-SIS2	11/2/2010	DUPLICATE	0.50		<60	<2	21.00	<1000	<2	<20	441.00	244.00	1170.00	<20	5.00	1030.00	15.00	0.18	1500.00	150000.00	<20	44.00	3570.00	<4	<10	2980.00	<2	12300.00	<100	2070.0	<100	<1	6.00	<100	666000.00	<10	
	RPD (%)		18.18	N/A	N/A	28.57	N/A	N/A	N/A	4.00	2.03	0.85	N/A	33.33	9.26	N/A	0.00	2.75	0.67	0.67	N/A	0.00	0.28	N/A	N/A	6.81	N/A	4.76	N/A	1.91	N/A	N/A	0.00	N/A	0.15	N/A	
	Comments																																				
	Action																																				
	Result																																				

RPD > 50%
RPD > 100%

